RELEASE THE RIVER!
An ecotheological reading of how the Murray-Darling Basin’s human inhabitants have affected its waterways

A Thesis Submitted to
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Doctor of Philosophy

by

David Carl Reichardt

School of Theology
Charles Sturt University

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To God be the glory.

David Reichardt
Sydney
January, 2009
Abstract

Not simply a theological reading, this thesis is an ecotheological reading of a case study in human ecology that explores whether the argument advanced by Lynn White Jnr in his article *The Historical Roots of our Ecologic Crisis*[^1] is supported by the effects humans have had on the waterways of Australia’s Murray Darling Basin. One of the progenitors of the modern environmental movement, and an irritating voice who stimulated the modern discipline of ecotheology, White claimed in this article that Christianity, as it has developed in the West, has formed the worldview responsible for the ecological crisis afflicting the world today. After reading ecotheologically the Aboriginal societies and the development of European settler society that supplanted them in the Murray-Darling Basin in regard to spirituality, worldview and the ways in which each has affected the Basin’s waterways; and having conducted a field study that explored how participants connected with a number of Uniting Church congregations around the Basin relate their Christian faith with the environments in which they live, I conclude that this ecotheological case study supports White’s “ecological complaint” against western Christianity.

The rich ecotheological resources of the Bible and Christian theology invite the question of how this complaint can be sustained. I argue that in western theology God’s transcendence dominates God’s immanence, allowing the Bible’s and Christian theology’s high view of humankind to be distorted into an anthropocentrism inimical to the rest of creation. The world-wide ecological crisis provides the Church with an impetus to restore an integrated understanding of the Trinitarian God who is both transcendent and immanent, and of the Gospel which is theocentric, biocentric and enriched by the insight that “God’s kingdom is creation healed”[^2], rather than anthropocentrically focused upon some form of human salvation. Starting from the exhortation *Release the river!* in the thesis’ title I outline an “ecotheology of rivers” that, centering on the biblical motif of “the river of

the water of life\textsuperscript{3} and Jesus’ invitation at Sukkot, the Feast of Tabernacles, to drink from Him\textsuperscript{4}, argues that a proper understanding and acceptance of the Holy Spirit helps humans to experience God immanently and to release to God the many things that we, in our desire for control over creation, have dammed.\textsuperscript{5}

\footnotesize
\begin{itemize}
  \item \textsuperscript{3} Revelation 22:1
  \item \textsuperscript{4} John 7:37-39
  \item \textsuperscript{5} Jeremiah 2:13
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Structure

The thesis is organized into 3 parts.

Part I establishes its context. The introductory chapter and literature review chapter set the research context, a chapter which comprises a short, scientific reading of the Murray-Darling Basin establishes the hydrological, geographical and ecological contexts, and the fourth chapter establishes the human context by reading ecotheologically how Aborigines affected the Murray-Darling Basin’s waterways.

Part II reads ecotheologically in 3 chapters how European settlement of the Murray-Darling Basin has affected its waterways. Chapter 5 addresses how European settlers first used, and Chapter 6 how European settlers then changed the Basin’s waterways. There is of course no clean division between the processes of using and changing: these terms describe the developing ability of technology to alter the waterways to suit human purposes by damming, diversion and irrigation. Chapter 7 reports and reflects upon an ecotheological field study I conducted among 8 Uniting Church Congregations situated around the Murray-Darling Basin in which I listened for embedded & deliberative ecotheologies, that is, how participants related their Christian faith to the environment in which they lived. Part II continues to reflect ecotheologically upon what Wilhelm Dilthey calls the ‘human sciences’. 6

Part III consists of three chapters of ecotheological reflection. Chapter 8 answers the thesis’ central question, whether Lynn White’s argument is borne out by how European settlement of the Murray-Darling Basin has affected its waterways. The phrase “Release the river!” however, leads beyond consideration of whether White was right or wrong to a theological call for decision and action. In chapter 9 I offer an ecotheological way forward in the form of an ‘ecotheology of rivers’ as a resource for better connecting Christian faith and theology with the still-wonderful landscapes in which we live. Chapter 10 concludes the thesis.

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The Thesis’ Geographical Context

Fig. 1 The Murray-Darling Basin

Fig. 2 Striking the Rock: “The principal work of the session will be irrigation.” – Hon. Deakin

8 “Striking the Rock” Alfred Deakin as Moses, the Deliverer,” (Melbourne Melbourne Punch, 1886).
Part I

Looking with a Loving Eye:
Establishing the Thesis’ Context
Chapter 1

From Striking the Rock to Releasing the River: Outlining the thesis

The Glocal Ecological crisis

It is now broadly accepted that Planet Earth is suffering a multi-faceted, acute ecological crisis whose effects require drastic action simply to limit, let alone reverse. The British economist Sir Nicholas Stern’s statement:

“...scientific evidence is now overwhelming: climate change is a serious global threat, and it demands an urgent global response”¹

reinforces a call made by ecofeminist Sallie McFague to fellow theologians some years ago to attend to ecological crisis in general:

“The times are too perilous and it is too late in the day for such games. We need to work together, each in his or her own small way, to create a planetary situation that is more viable and less vulnerable.”²

Global in scope, climate change has the potential to overwhelm both ecosystems and human societies,³ but it is only the most comprehensive of many forms of ecological degradation that are affecting local landscapes. To use Roland Robertson’s composite term,⁴ introduced to theology by the Catholic missiologist Robert Schreiter,⁵ ecological crisis is “glocal”, both global and local in character. Drought and flood events associated with the El Niño – La Niña events that affect much of the southern hemisphere have for thousands of years characterised the climate of the Murray-Darling

³ Climate change reminds of Garrett Hardin, "The Tragedy of the Commons," Science 162 no. 3859 (1968).
Basin, Australia’s greatest river system, currently the nation’s foodbowl, and arguably the landscape in which the basis of the modern Australian character was formed. The claim that decreased precipitation over the Basin during the past fifty years, resulting currently in very low levels of water in the Basin’s waterways, is at least partly due to anthropogenic climate change is therefore still subject to controversy.

It is generally accepted, however, that human activities in the Basin, as elsewhere, have harmed its ecology, even as they have resulted in economic prosperity. In response to the Basin’s ecological crisis the July, 2008 meeting of the Council of Australian Governments (COAG) signed an Intergovernmental Agreement on Murray-Darling Basin reform that established a new, unified governance of the Basin called the Murray-Darling Basin Authority. The Commonwealth government also agreed in principle to provide nearly $A3.7 billion for projects for the four states and the territory that lie partially or wholly within the Basin. Days later the Garnaut Climate Change Review Draft Report was released. Some of the initial publicity for the Report was conducted on the bed of Lake Alexandrina near the mouth of the Murray River, made dry by years of low rainfall and over-allocations of water to irrigation and town water supplies.

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9 R. Jones et al., "Future Impact of Climate Variability, Climate Change and Land Use Change on Water Resources in the Murray-Darling Basin. Overview and Draft Program of Research,” (Canberra: CSIRO, 2001). report that in the Murray-Darling Basin, a 10 per cent change in rainfall seems to result in a 35 per cent change in streamflow.
10 Ross Garnaut, "Garnaut Climate Change Review Draft Report,” (Canberra: Commonwealth of Australia, 2008). reports that rainfall declines in parts of the country, such as south-east Australia, have not been definitively attributed to climate change. By contrast, the higher temperatures that have accompanied and exacerbated the drought conditions have been so attributed. Bjørn Lomborg puts the global argument for eco-skeptics. Bjørn Lomborg, The Skeptical Environmentalist: Measuring the Real State of the World, 1 vols. (Cambridge: Cambridge University Press, 2001).
12 Garnaut, "Garnaut Climate Change Review Draft Report.”
throughout the Basin. It is now virtually beyond dispute that these two ‘ecologic’ crises of climate change and the Murray-Darling Basin are linked and have come to a head.

The response, however, has been informative. While few now deny the reality of climate change\(^\text{13}\) the calls to protect self-interest were swift and insistent. The agricultural sector and the aluminium industry quickly stated their desire for special status in the competition for scarce water resources. Knowing voter sensitivity to increased transport fuel prices the federal Opposition challenged the government not to link this issue to any carbon emissions trading scheme, and the government considered reducing fuel excise as compensation. The Opposition on the one hand claimed that the Government had done little more than produce plans for environmental mitigation in 7 months of office, but on the other insisted that the government not move ahead of other countries in implementing a carbon trading scheme so that Australia will not be disadvantaged economically. There were cries to protect industries the Garnaut Report described as “trade-exposed, emissions-intensive”. The environmental lobby have described both the COAG initiatives and the Garnaut Report’s recommendations as “too little, too late”. As director of the Wentworth Group of Concerned Scientists Peter Cosier speaks for a relatively conservative environmental constituency,\(^\text{14}\) but he still criticised the COAG agreement and the state of Victoria in particular for its continued self-interest and conservatism.\(^\text{15}\) Meanwhile, various state premiers returned to their constituencies insisting that they had brokered good deals from COAG and, at the same time, that they were being environmentally responsible and pro-active.

Professor Garnaut’s comment on the “prisoners’ dilemma” each nation faces applies also to stakeholders in the Murray-Darling Basin:

“Each country benefits from a national point of view if it does less of

\(^{13}\) One prominent climate change sceptic is Michael Costa, Treasurer of the New South Wales government.

\(^{14}\) The Wentworth Group is allied to WWF Australia, which has tended over the years to work with government and business interests more than many other environmental groups.

\(^{15}\) ABC Radio, AM Programme, 4\(^{th}\) July, 2008
http://www.abc.net.au/am/content/2008/s2294203.htm
the mitigation itself, and others do more. If all countries act on this basis, without forethought and cooperation, there will be no resolution of the dilemma. We will all judge the outcome, in the fullness of time, to be insufficient and unsatisfactory.”

For over 100 years such parochialism and selfishness has hindered all efforts to treat the Murray-Darling Basin as the great, integral catchment area it is rather than a landscape filled with resources to be utilised. Meanwhile, the diversion and storage of water for irrigation have reduced the availability of water for environmental flows and for other forms of farming, some forms of irrigation have tended to draw underlying salt to the surface of the soil, and desnagging of waterways, the installation of weirs and dams, and introduced species have altered riverine habitats to the detriment of native species. One of the costs associated with the Murray-Darling Basin’s vital role in Australia’s economy, despite the restorative ecological work being done in a number of places, has been the detrimental effects on the ecology of the Basin’s waterways. A varied landscape of almost mythological significance for both Aborigines and Euraustralians, after approximately 180 years of European settlement the Murray-Darling Basin is today in severe ecological crisis characterised by low water flows and high salinity levels.

**The Historical Roots of our Ecologic Crisis**

The state of the Murray-Darling Basin’s waterways is a prominent Australian example of what the American medieval historian Lynn White termed “ecologic crisis” more than 40 years ago. In a lecture entitled *The Historical Roots of our Ecologic Crisis* and published in the journal *Science* White famously took the western form of Christianity to task for “bearing a huge burden of guilt” for the ecological crisis. This paper has had a profound impact on ecological awareness and discussion. White’s identification of the roots of ecological crisis as being theological in nature stimulated the emergence of the discipline of ecotheology. Reprinted in

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17 For example, the wetlands restoration area on the Banrock Station, South Australia
18 My term for Australians belonging to the European settler society that has supplanted Aboriginal society.
20 Ibid., 1206
numerous volumes, treated with deference by many in the ecological movement from the 1970s onward, but greeted with criticism and even derision by a number of scholars and church writers, it nevertheless calls to mind for the Lutheran pastor and theologian Paul Santmire “the influence of Martin Luther’s ’95 Theses”\textsuperscript{21}, and continues to be cited in ecological and ecotheological circles to this day.

This thesis constitutes an ecotheological reading of how humans have affected the Murray-Darling Basin’s waterways. It methodology is to assess whether the claims Lynn White made in \textit{The Historical Roots of our Ecologic Crisis} hold true in the Basin. White’s thesis, written at a high level of generality, provides a “generative framework”, an “ideal type” of which Max Weber has written:

“The more sharply and precisely the ideal type has been constructed, thus the more abstract and unrealistic in this sense it is, the better it is able to perform its functions in formulating terminology, classifications, and hypotheses. In working out a concrete causal of individual events, the procedure of the historian is essentially the same.”\textsuperscript{22}

White argued at a \textit{global} level of generality, or at least at that of the whole of western civilization. However, I shall evaluate White’s claims in this \textit{local} context, a region which was settled by Europeans during the time period crucial to White’s argument. This thesis is not an attempt to prove that “White was right”. Rather, the purpose of this case study in contextual theology is to provide material for further biblical and ecotheological reflection in the final two chapters.

I shall now review White’s article in detail, discuss the academic community’s response to it, including the development of ecotheology, then suggest why, despite the criticism White’s article has received, it is still valid as the foundation for this thesis’ methodology, and why the Murray-Darling Basin is an excellent context in which to test it.

“All forms of life modify their contexts”, wrote White and,

“ever since man became a numerous species he has affected his environment notably.”

That word “affected” is vital to my purpose, forming the past participle of the verb in my thesis’ title. White’s premise is that humans, like all other species, affect their contexts but, in contrast to, say, coral polyps, whose effects he describes as “spectacular and benign”, up until the last third of the twentieth century the effects that humans have had on their ecological contexts have been spectacularly deleterious.

White attributes the huge increases in “man-induced changes” to ecology to the “marriage between science and technology” about four (now five) generations ago in Western Europe and North America. He dates the widespread acceptance of this “Baconian creed” whereby scientific knowledge means technological power over nature to about 1850, and rates its acceptance as a normal pattern of action as

“the greatest event in human history since the invention of agriculture, and perhaps in nonhuman terrestrial history as well.”

This is because

“the impact of our race upon the environment has so increased in force that it has increased in essence.”

Through science and technology humans can now completely change the ecology of the planet.

“…surely no creature other than man has ever managed to foul its nest in such short order,” White remarked.

Addressing the question of what to do about this crisis White suggested that we

“begin by looking in some historical depth at the presuppositions that underlie modern technology and science.”

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23 As many have noted those deleterious, anthropogenic effects have accelerated since the publications of White’s paper.
His first point was that these fused, quite suddenly, towards the middle of the 19th century, a development

“surely related to the slightly prior and contemporary democratic revolutions which, by reducing social barriers, tended to assert a functional unity of brain and hand.”

White wondered whether

“a democratised world can survive its own implications,”

and concluded that

“presumably we cannot unless we rethink our axioms.”

Next White pointed out that although both endeavours have taken much from all over the world, in their present form modern science and technology are both distinctively occidental, and that the West has led in these areas for longer than is generally thought. White put a tentative date of as early as 800 CE on the beginnings of the West’s use of technology in industry, and argued that the distinctive Western tradition of science began in the late 11th century

“with a massive movement of translation of Arabic and Greek scientific works into Latin.”

Since the roots of Western dominance in both technology and science are therefore medieval White examined

“fundamental medieval assumptions and developments.”

He argued that the development, in northern Europe, of the heavy plough suitable for the heavy soils of the region meant that

“distribution of land was based no longer on the needs of a family but…on the capacity of a power machine to till the earth.”

Man’s relation to the soil was profoundly changed from being “part of nature” to “the exploiter of nature.” He detected the same exploitive attitude to nature in Frankish calendars from before 830 CE, signalling that

“Man and nature are two things, and man is master.”

At this point White made the connection with religion.
“What people do about their ecology depends on what they think about themselves in relation to things around them. Human ecology is deeply conditioned by beliefs about our nature and destiny – that is, by religion.”

Like the word ecology, coined only in 1866, “human ecology” is a recent concept. It is “an emergent science of relationships between people and the natural environment” which investigates how “humans change and are affected by their environment”. The link between humans and the environment was not obvious to many steeped in the tradition of Western Scientific Experimental Method. Under the influence of Descartes’ *Meditations*

“reality came to be viewed as a strictly mechanical realm whose laws of operation could only be expressed in mathematical analysis. A clear distinction had been made between the mechanical and human worlds.”

As if it were not enough, in the 1960s when the natural sciences still reigned supreme in the western mindset, to invoke the new human science of human ecology, White boldly linked it with religion. In so doing he laid a foundation for another emergent discipline – ecotheology.

The western scientific tradition that resulted in the Enlightenment and was epitomised by scholars such as Descartes and Francis Bacon succeeded so thoroughly in separating westerners’ perceptions of religion and science that White pointed to eastern culture to support his argument. That human ecology was very influenced by religion was evident to westerners when they viewed overtly religious eastern cultures such as India or Ceylon, but is “equally true of ourselves and of our medieval ancestors.”

Having demonstrated from his field of expertise in medieval history that medieval Europeans had an exploitative attitude towards nature White argued that this had its roots in our forbears’ religion:

“The victory of Christianity over paganism was the greatest psychic revolution in the history of our culture.”

27 White, "The Historical Roots of Our Ecologic Crisis.", 1205
White began to justify this large claim by observing that although many feel that the scientific and technological age in which we live is post-Christian,

“to my eye the substance [of our thinking and language] often remains amazingly akin to that of the past.”

Specifically, our

“implicit faith in perpetual progress…was unknown either to Greco-Roman antiquity or to the Orient”,

but

“rooted in, and…indefensible apart from…Judeo-Christian teleology”.

If atheistic Marxism, which White regarded as a Judeo-Christian heresy, shares both this teleology and the commitment to progress through science and technology it is not surprising that westerners who regard themselves as post-Christian or non-Christian westerners do the same. Although some have objected that other cultures have shared Christianity’s linear teleology White was simply trying to explain the causes of the worldview responsible for the development of the modern science and technology that are causing the ecological damage.

What did Christianity tell people about their relations with the environment, that is, about human ecology? White pointed out that as well as

“a concept of time as nonrepetitive and linear”

it inherited from Judaism

“a striking story of creation”.

White neglected to mention that the Bible contains several creation accounts and he conflated the first two of them, but his point remains that,

“…although man’s body is made of clay, he is not simply part of nature: he is made in God’s image. Especially in its Western form, Christianity is the most anthropocentric religion the world has seen.”

Now he explained his previous sweeping statement about Christianity’s victory over paganism:
“By destroying pagan animism, Christianity made it possible to exploit nature in a mood of indifference to the feelings of natural objects...Man’s effective monopoly on spirit in this world was confirmed, and the old inhibitions to the exploitation of nature crumbled.”

Next, White further summarized the contrast between Eastern and Western Christianity:

“Eastern theology has been intellectualist. Western theology has been voluntarist. The Greek saint contemplates; the Western saint acts. The implications of Christianity for the conquest of nature would emerge more easily in the Western atmosphere.”

Even the Western doctrine of creation became a means of creation’s harm, according to White. Natural theology has always proceeded from the premise that

“since God had made nature, nature must also reveal the divine mentality...In the early Church, and always in the Greek East, nature was conceived primarily as a symbolic system through which God speaks to men...”

So, for example, the industrious ant became a sermon for sluggards, rising flames symbols of the soul’s aspirations. However, from the early 13th century onwards in the West natural theology ceased to be a decoding of the physical symbols of God’s communication with man. Instead it became an effort to understand God’s mind by discovering how God’s creation operates. From the 13th century to Newton and Leibniz every major scientist explained his motivations in religious terms. Not until the late 18th century was the hypothesis of God considered unnecessary by many scientists.

“Modern Western science,” concluded White, “was cast in a matrix of Christian theology.”

White concluded famously, therefore, that because of the conjunction of science and technology

“Christianity bears a huge burden of guilt”

for the ecological crisis. Baldly and controversially he stated that,

“We shall continue to have a worsening ecological crisis until we reject the Christian axiom that nature has no reason for existence save to serve man.”
He doubted
“that disastrous ecologic backlash can be avoided simply by applying to our problems more science and technology”,

for these very activities
“have grown out of Christian attitudes toward man’s relation to nature which are almost universally held not only by Christians and neo-Christians but also by those who fondly regard themselves as post-Christians.”

White described these attitudes of the species-selfishness called “anthropocentrism” in two ways:
“Despite Copernicus, all the cosmos rotates around our little globe”,
and
“Despite Darwin, we are *not*, in our hearts, part of the natural process. We are superior to nature, contemptuous of it, willing to use it for our slightest whim.”

Therefore,
“more science and technology are not going to get us out of the present ecologic crisis until we find a new religion, or rethink our old one.”

While sympathetic to the beatniks who have explored Zen Buddhism White doubted that religion’s ability to counteract western anthropocentrism precisely because it is not itself western in origin. Whether or not we are aware of it westerners are all the inheritors of two millennia of Christian theology that has profoundly formed our worldview. Accordingly, White advocated finding ecologically-friendly resources within the Christian framework. He suggested that the reader ponder
“the greatest radical in Christian history since Christ: Saint Francis of Assisi”,

and proposed Francis as a patron saint for ecologists. The key to understanding Francis
“is his belief in the virtue of humility – not merely for the individual but for man as a species.”

Building on this quality of humility Francis sought to
“…depose man from his monarchy over creation and set up a democracy of all God’s creatures. With [Francis] the ant is no longer
simply a homily for the lazy, flames a sign of the thrust of the soul toward union with God; now they are Brother Ant and Sister Fire, praising the Creator in their own ways as Brother Man does in his.”

Although White admitted that St Francis failed in his quest to democratise creation he proposed him as the patron saint of ecologists. For White the Franciscan sense of the spiritual autonomy of all parts of nature may point to a better direction than humankind’s hegemony. Fundamentally, White argues that

“since the roots of our trouble are so largely religious, the remedy must also be essentially religious, whether we call it that or not.”

Responses to White’s Paper

Although it is sometimes said that theology has developed an interest in ecology only lately, White’s contribution to ecological debate was early and formative both for environmentalists and for the discipline of ecotheology. It entered a context of increasing ecological concern. The biologist Rachel Carson’s *Silent Spring* had by 1967 influenced many people to campaign against the use of DDT and other insecticides in agriculture. Soon afterwards the ecologist Garrett Hardin, entomologist Paul R. Ehrlich and the Club of Rome would revisit Thomas Malthus’ work on overpopulation and the journalist Annie Dillard would win the Pulitzer Prize with her reflection on ecology and theodicy, *Pilgrim at Tinker Creek*.

In view of these early theological contributions to ecological debate by White and Dillard it seems ironic that, almost 30 years later, the molecular biologist and historical theologian Alister McGrath wrote that environmentalists either wrote Christianity and the churches off as an irrelevance or excoriated them

“as actually *encouraging* the rape of the earth”.

McGrath became convinced

“that the intellectual roots of this attitude turned out to be surprisingly shallow, and actually rested upon one single work, which seemed to have achieved cult status within the environmental movement.”34

That work was, of course, White’s paper. The roots of the so-called “ecological complaint” against Christianity were, however, deeper than that, despite it having often been called “the Lynn White thesis”. James A. Nash cited other writers who expressed similar sentiments, some earlier than White. Among them Alan W. Watts contended that Christianity “is an ‘urban’ religion that fits poorly with nature and has encouraged technological transformations of nature”35 and Arnold Toynbee criticized Judaeo-Christian monotheism which, he wrote, desacralised nature and should be replaced by “a once-universal, nature-reverencing pantheism (actually animism).”36

Nevertheless, while opponents of Christianity may have rejoiced at what they thought was a version of the ecological complaint from within the citadel of faith, one wonders whether they properly understood White. As we have already seen, his historical analysis of the ecological consequences of the occidental Christian worldview, though stark, is more sophisticated than simply naming the biblical call to dominion37 or a “disenchantment of nature”38 many believe to be causes of the problem. White’s goal was to find resources within Christian theology that could act as a kind of antidote to that which had led to the ecological crisis the world now faced. How, then, did his paper stand up to rigorous theological scrutiny?

White’s paper certainly galvanised theologians as well as environmentalists. While McGrath argued that it

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34 Ibid. xv
37 Genesis 1:26-8
38 To appropriate a phrase used by both David Tacey and Alister McGrath.
“opened and closed…discussion (for a new generation of environmentally concerned individuals) of the role of religion in ecological issues”, 39

different theologians were forced to respond to it. Some did so with predictable dismay and negativity, as in the critique that it was

“weak in argument, pejorative in its presentation, superficial in its theology and naïve in the solution it puts forward.”40

Others, of such divergent theologies as Francis Schaeffer41, Thomas Derr42, and more recently Paul Santmire43, James A. Nash44, and Daniel Migliore45, were more gracious, crediting White with linking ecology and theology even while arguing that his reading of Christian theology was simplistic and, at points dependent upon their divergent points of view, wrong.

“With the passage of time,”
wrote McGrath,

“a more sanguine estimation of White’s argument has gained the ascendancy.”46

Nash wrote that

“White has been a prime provocateur, goading some theologians and ethicists to become ‘defenders of the faith’ or, more frequently, critics and reformers of the church, who often are the true defenders of the faith. He awakened many of us from our doldrums.”47

Joseph K. Sheldon remarked that

39 McGrath, The Re-Enchantment of Nature. xvi
43 Santmire, The Travail of Nature.
44 Nash, Loving Nature.
46 McGrath, The Re-Enchantment of Nature. 30
47 Nash, Loving Nature.
“White’s paper, perhaps more than any other single factor, was responsible for making the Creation and the need for its stewedly care an issue in the Christian press.”

If for that reason alone, White has done much good.

One significant way in which Christian theologians have addressed White’s and other ecological critiques of western Christianity has been to relocate blame to the Enlightenment. Alister McGrath has recently put this argument, which has much to recommend it, in detail. The world’s environmental problems have grown sharply worse during precisely the period in which the Enlightenment worldview held greatest sway. This period also corresponds to the time of the Murray-Darling Basin’s Euraustralian settlement which, as we shall see, has itself been a characteristically Enlightenment enterprise. The discussion around whether Christianity, the Enlightenment or neither bears responsibility for what has happened to the Murray-Darling Basin’s waterways, however, belongs in Chapter 8.

**Why White’s Essay & the Murray-Darling Basin’s Waterways?**

If White’s thesis is correct the attitudes he himself critiqued will not easily disappear. Where these attitudes matter most is not in the theological hall but in the lives of ordinary people as they affect their local environments. As far as I am aware White’s thesis has not been explored in a specific context, a ‘field situation’. This thesis asks whether Lynn White’s argument is borne out by the way in which Europeans have affected the waterways of the Murray-Darling Basin. In so doing it must, as mentioned, address the relationship between the Enlightenment and Christianity in the context of

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49 McGrath, *The Re-Enchantment of Nature*.

50 Although, as I shall report in Chapter 8, the Enlightenment has been said to have held sway, at least in philosophical circles between the English and French Revolutions (1688-1789) the consequences of philosophical ideas always take time to work their way through to the behaviour of societies they affect.
Australian settler society, bearing in mind that to a large extent the founding of the Australian penal colonies was an Enlightenment project. 51

The European settlement of the Murray-Darling Basin provides an excellent case study with which to test White’s argument. Although the Basin is large and ecologically diverse, being a catchment area it forms a well-defined ecological region. Jared Diamond 52 and others have studied the respective identities and impacts upon the Australian environment as a whole of Australian Aborigines and Australian European settler society, but to examine these in a particular landscape defined by its waterways allows a greater specificity. For the purposes of this study the Aboriginal peoples who have lived in the Murray-Darling Basin for thousands of years and whose spirituality, worldview, culture and effect on the Basin differed enormously from that of the Europeans who have supplanted them make an important point of comparison with European settler society. The key question is, living in the same landscape as their supplanters, why did they affect its waterways so differently?

That this region is defined by its waterways sets this juxtaposition of landscape with culture formed in very different landscapes in stark relief. Perhaps no other facet of the environment has provoked within European settlers the expectation and desire that it be something more familiar and European as much as Australian waterways. 53 This disappointment typifies the differences in ecology of the Basin from the European landscapes that had formed the settler culture and helped to motivate the desire to change the waterways of the Murray-Darling Basin. The geographical context of waterways also stimulates rich possibilities for biblical and theological reflection by enabling connection with a major biblical and theological motif, “the river of the water of life”. 54

54 Revelation 22:1
The period of European settlement of the Basin also coincides with the fusion of science and technology and the development of democratic culture of which White wrote. The religious and democratic worldview the settlers brought to the Basin was fostered in the robust, temperate, rich-soiled and above all well- and regularly-watered ecological landscapes of western Europe and North America. However, the implications of this worldview have been played out in a complex, fragile environment where the ecological effects are more immediately obvious than in the simpler, more robust ecological environment of its origin. If, as White argued, it is European science, technology and worldview, and behind them the occidental form of Christianity, that are responsible for the current, worldwide ecological crisis, then Australia, the most ecologically fragile of all continents, and colonized by Europeans, has become a vital test case for the environmental future of the world. Because Australia is the least able of all the continents to cope with ecological disruption, and is the most ecologically ‘different’ of all the continents, and because modern Australian society has had the least time to come to terms with the environment in which it lives and from which it draws sustenance it is in a race against time to develop an ecologically sustainable society. As Diamond puts it:

“Australia illustrates in extreme form the exponentially accelerating horse race in which the world now finds itself. On the one hand, the development of environmental problems in Australia, as in the whole world, is accelerating exponentially. On the other hand, the development of public environmental concern, and of private and governmental countermeasures, is also accelerating exponentially.”

The Murray-Darling Basin itself is arguably the best region in Australia to study this “exponentially accelerating horse race”, and therefore its theological implications. Diamond’s horse race is essentially about learning to live sustainably in the land, which necessitates knowing it. Although the

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55 For a discussion on the relationship between the new lands of North America and Australia see Gascoigne, The Enlightenment and the Origins of European Australia. The discussion covers many points including how the Enlightenment was expressed in each context (pp.7-9) and how the Australian colonies compared (disappointingly) with their north American counterparts in the provision of water and food (pp.71-72).

56 Diamond, Collapse: How Societies Choose to Fail or Survive., 296 “...the differences between Eurasia, Africa, North America and South America fade into insignificance compared with the differences between Australia and any of those other landmasses.”

57 Ibid., 415-6
Murray-Darling Basin contains significant cities\textsuperscript{58} it is the rural heartland of one of the most urbanised countries in the world. The results of this thesis’ field study, described in Chapter 7, support qualitatively the cliché that people who live on the land know it in a way that city-dwellers do not.\textsuperscript{59} Though Sallie McFague characterises western, Cartesian, dualistic forms of knowing, as “looking with an arrogant eye”, farmers, others who live “on the land” and even those who live in service towns are better placed to know their land out of a deep sense of involvement in it than their city cousins. Even their scientific knowledge of soil structure, hydrology and so on forms a part of this more intimate knowing, learned by “looking with a loving eye”.\textsuperscript{60}

\textit{The Inspiration for and the “Big Question” of this Thesis}

A photograph, a cartoon, a poem and a film have each provided inspiration for determining this thesis’ topic. One day over a decade ago, having lived in northern Europe for some time, I looked with a perspective affected by that culture at a photo of friends and relatives of the late Dr Fred Hollows\textsuperscript{61} standing by his graveside at Bourke cemetery. Noticing that even the Australians of European descent in the picture seemed subtly no longer European I wondered whether the landscape in which these European Australians now lived was one of the factors causing that change.

This thesis no longer concerns itself with how the Murray-Darling Basin has affected European settlers. To study the process of mutual affectation would make the task too large, and the question of how humans have affected the waterways is more urgent. Yet this process of the landscape knowing its human inhabitants as well as being known by them, affecting them as well as being affected by them, must be studied, for unless the human/ecological relationship is mutual it will not finally work. As Geoff Park wrote,

“Slowly, as the land works on us and, generation after generation, shapes a new culture, there is gathering awareness in settler societies

\textsuperscript{58} Including Canberra, Australia’s capital city.
\textsuperscript{59} It brings to mind the Hebrew verb \textit{yada’}, “to know in a relational sense, to recognize and to be acquainted with.”
\textsuperscript{60} That was reinforced by the interviews I conducted in various places around the Basin.
\textsuperscript{61} An ophthalmologist, and founder of the Hollows Foundation that provides affordable ophthalmic surgery for Aborigines in outback communities and in a number of two-thirds world countries.
like Australia and New Zealand of the increasing necessity of what Australian Ross Gibson calls ways of knowing with country.”

The significance of waterways in this mutual, affecting, “forming” relationship between humans and landscapes lies in the fact that they help to form both. The Murray-Darling Basin, like waterways around the world, continues to be vital to the survival and well-being of human society, and therefore in the formation of character and worldview. The Basin itself, however, is defined by the flow of water. On a later trip to Bourke I discovered that Dr Hollows’ grave lies close to the levee bank humans have built to protect the township from the Darling River. The grave of one of the European Australians who has done most for ‘Country’, and who has been most formed by it is buried by the river which down the aeons has formed Country.

Water and waterways not only shape and define the Basin; they are rich biblical and theological motifs, and make for good ecotheological reflection. My experience of reading the Murray-Darling Basin ecotheologically began with a cartoon, entitled “Striking the Rock”, that depicts Alfred Deakin, then Minister for Irrigation in the Colony of Victoria, as Moses striking the rock at Horeb and Kadesh. The subscript reads, “The principal work of the session will be irrigation.” This image suggests that a biblical worldview underlay ecological attitudes and actions of European settlers in the Murray-Darling Basin, but that it has been reinterpreted in a way typical for the Enlightenment. Humans themselves, not God, will provide by improving the ‘virgin’ territory by the redistribution of water. The biblical story has been reinterpreted to mean its opposite.

This suspicion that the settlers’ worldview and attitude to nature was funded by a Christian theology which had been mediated and reinterpreted under

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62 Geoff Park, Ngā Uruora the Groves of Life: Ecology & History in a New Zealand Landscape (Wellington: Victoria University Press, 1995), 15
64 “Striking the Rock” Alfred Deakin as Moses, the Deliverer,” (Melbourne Melbourne Punch, 1886).
65 Exodus 17:6-8
66 Numbers 20:2-13
the influence of Enlightenment categories was supported by a poem entitled *The Pioneers* published in a centenary history of a region on South Australia’s Eyre peninsula. The poem justifies biblically the displacement of indigenous peoples and the development of the land they had inhabited. For poet Frank Masters the clearing of land westward was “An exodus obedient to great Biblical command.” The word “Exodus” provides the key historical pattern linking this poem to the development of the Murray-Darling Basin and to much else. It is, of course, the Bible’s archetypal event complex, and funds both Jewish and Christian societies with archetypal stories of God: saving God’s people from slavery, leading them on a journey through a desert, giving them the structure and security provided by the Law and the Covenant, and providing for them despite their sin, disobedience and complaints.

God’s provision of water at Horeb and Kadesh despite Israel’s complaints were decisive instances during the Exodus of God’s provision. They funded the “Striking the Rock” cartoon more than 3,000 years after, and across the globe from the event. More significantly, however, they were celebrated in later Jewish history by Sukkot, the Feast of Tabernacles, which at the time of Jesus was the most important Jewish festival. In his reinterpretation of chapters 7 and 8 of John’s gospel Ian Robinson described Jesus’ intervention at Sukkot at which He made the highest possible claims about Himself and reinterpreted God’s mission to the world through Israel. As I develop an “ecotheology of rivers” in Chapter 9 I shall return to Robinson’s exegesis of John 7:37-39 which describes Jesus interrupting the last, great day of Sukkot to identify Himself with the rock of Horeb from which water flowed. This text, which lends Robinson’s thesis its title, has profound pneumatological implications for a renewed understanding of God’s immanence.

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67 See, once again, Gascoigne, *The Enlightenment and the Origins of European Australia.*
69 Ian D T Robinson, "If Anyone Thirsts - a Christian Spirituality of Australia's Desert Land" (PhD, Charles Sturt University, 2007), 297-319
On the other hand the Exodus, baldly described, involved a mass migration to and the invasion of a better land with great slaughter, all ordered by God. For Christian settler societies using the Exodus as a set of precedents legitimised their colonialism theologically. Not infrequently that has had ethical consequences with which many are profoundly uncomfortable today.

To take two examples from Masters’ poem, the command to ‘Be fruitful and multiply and replenish the earth and subdue it!’ was, according to him, the “noblest of stimulant to brace women and men to dare and risk, never danger and risk assessing”. In the light of the ecological complaint against Christianity it arouses quite different responses today. Similarly, “the law of the talent”, deriving from Jesus’ Parable of the Talents even motivated and justified dispossessing the Aborigines. Masters interpreted this parable not simply as permission but as an injunction to develop the land. Because the Aborigines had not done so they were liable to the same fate as the servant in the parable who had merely buried his talent: what the Master had given him was taken from him and given to the servant who had the most:

“…inexorably rigid in the truth doth stand,
the law of talent abjectly unused,
‘tis lost by the owner as high trust betrayed,
should by possession fail to be enthused.”

This interpretation of the parable implied, of course, that development of the resources God has put at one’s disposal is the Christian duty of individuals and societies. To do so brings its rewards:

“Conversely this parable teaches, that diligent employ
Brings increasing possession in larger degree,
Adequately consistent with energised power,
Recompensing faith in this benevolent decree.
This definite law doth not cease to exist,
Whether in tribe, community, person or nation,
But gathers momentum in proportion to unite
Contributing their quota to the equation.”

For Masters the key word was “use”, which brings to mind the Enlightenment philosophy, Utilitarianism. Neither Masters nor Christians are necessarily utilitarians, but Masters spiritualises this determinant, ascribing it to “the infinite Thought”. Because at this point in the poem he is

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70 Flowing with milk and honey. Ex. 3:8
71 Matt. 24:14-30
supporting his argument with biblical texts one must assume that “the infinite Thought” he has in mind is the God of the Bible:

“Use is the term to which all things subscribe.
In its nature defined by the infinite Thought,
Man’s highest course imbued with much wisdom.
Justified his action, though with much danger fraught.
In consonance with this indubitable law,
Franklin Harbour blacks and others Australian,
Failing through ages their country to develop,
Pay forfeit in place to a white race alien.”

Taking possession of Country from its prior inhabitants naturally raised moral scruples. Developing it was difficult and dangerous, as much of the remainder of this poem attests. These verses, however, justified the whole enterprise biblically. The Parable of the Talents still funds the understanding of some Christians of how we are to relate to God’s world.\(^{72}\)

Both the Melbourne Punch cartoon and Masters’ poem provide and justify, biblically and theologically, an Enlightenment worldview and rationale for “improving” the land. In so doing they give suggest the possibility that Christian belief and worldview influenced the European settlers of Australia and the Murray-Darling Basin in their actions and way of life, as Lynn White’s paper argued. As mentioned, the uneasy, complex relationship between the Enlightenment and western Christianity in the Basin will be discussed in Chapter 8.

Finally, the phrase “Release the River!” in the thesis’ title is derived from the cinematic version of The Lord of the Rings.\(^{73}\) In the second film of the trilogy an enraged army of trees and their shepherds, called Ents, destroyed Isengard, home of the sorcerer Saruman the Wise. Isengard was situated downstream of the dam on the river Isen. So Treebeard, leader of the Ents, marched over to the dam, roared “Break the dam! Release the river!” and did just that. A river-tsunami poured through Isengard, washing man, orc, and their filthy, industrial works into the deep caves they had dug. Everyday

\(^{72}\) In a TV programme prior to the 2007 Federal election organized by Churches and giving people belonging to faith-based organizations the opportunity to question political aspirants then Prime Minister John Howard indicated his appreciation for this Parable.

reality is more complicated than story. The suggestion that dams and weirs have been built in the Murray-Darling Basin simply to resource filthy industrial works is untrue, and would be offensive to many. Nevertheless, although dams have brought many short-term benefits, I shall conclude the thesis, drawing on the support of those such as Patrick McCully,74 by arguing that the ecological, and therefore longer term human costs of dams are becoming apparent around the world. These structures powerfully represent human mastery over nature. Therefore the phrase “Release the river!” points at several levels to what I shall argue in this thesis.

Chapter Two

A Multi-System Catchment of Literature

Introduction

The Murray-Darling Basin is a catchment area comprised of three river systems. The Darling River and its tributaries, and the Murrumbidgee and Lachlan Rivers and their tributaries flow into the Murray River and its tributaries. The former two river systems are tributaries of the latter. Analogically, this multi-disciplinary literature review includes literature from the natural sciences, including geological history, geography, ecology and general environmental studies, all of which are properly approached from an Australian perspective\(^1\); human sciences such as history, sociology and anthropology\(^2\); theology and even the arts\(^3\). The literature relevant to this study belongs to different systems of human endeavour and thought each tributary to this ecotheological enterprise. For the purposes of this study literature from several “systems” flows into a theological system. Together they comprise “a multi-system catchment of literature”.

Extending the analogy, this thesis’ Literature R(iv)e(r)view is like mapping the outlines and main features of the catchment area that have already been discovered. Drainage basins\(^4\) such as the Murray-Darling Basin help define the landscapes in which they are set. Similarly, critical contributions to extant literature in the studies of ecotheology and the Murray-Darling Basin have formed the shape and direction of the respective bodies. From these critical contributions emerging themes, landmarks and outlines of the landscape can be discerned. White’s essay *The Historical Roots of our

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1 Graeme Aplin et al., ed., *Global Environmental Crises: An Australian Perspective*, 2 ed. (South Melbourne: Oxford University Press, 1999). and
2 A recent general work with helpful detail for this work is Göran Burenhult, ed., *People of the Past: The Epic Story of Human Origins and Development*, The Illustrated History of Humankind (San Francisco: For City Press, 2003).
3 As noted in Chapter 1 a photograph, a cartoon, a poem and an excerpt from a film have inspired this thesis.
Ecologic Crisis is a feature upstream that has affected all else downstream in the catchment area of ecotheology. Critically, White understood that the contribution that theology can make to the ecological discussion does not lie in identifying technical solutions to environmental problems. That is the province of science and technology. Rather, White identified modern western science and technology, conjoined, as the causes of the developing, worldwide ecological problem, and argued that religion and worldview underlay these.

To explore the Murray-Darling Basin Europeans found and followed its waterways. Although these frequently did not run according to their expectations, within a few decades of crossing the Great Dividing Range the puzzle of where they flowed had been worked out by piecing together the experiences and testimonies of various explorers. Analogically, Chapters 4 to 6 use culture and spirituality of Aboriginal people, and the experience and testimony of European settlers in the Murray-Darling Basin during the nineteenth century, and Chapter 7 uses that of people, mostly of active Christian faith, who live in the Basin today, to help answer the thesis’ central question. This inductive theological method fits well with ecotheology’s contextual character. The first task of this literature review is to define, locate and explore the task of ecotheology.

**A Definition and the Task of Ecotheology**

“Ecological theology, or ecotheology as it is called these days, arises from an attempt to explore the relationships between the academic disciplines of ecology and theology”

wrote Barry Leal. As we have already seen, this academic enterprise was grounded in praxis, stimulated by worsening ecological crisis. “Ecology” is itself a compound word, coined in 1866 by the German biologist Ernst Haeckel from the Greek words oikos, meaning “house” and logos, meaning “word” or “study”. Therefore, ecology’s most basic meaning is the study of one’s house or home, when these words are interpreted broadly as one’s

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habitat or environment. However, it has taken on the more specialized meaning of

“the branch of biology that deals with the relations of organisms to one another and to their physical surroundings.”

Theology is literally the study of theos, God. The medieval theologian Anselm gave the classic definition of theology:

“Faith seeking understanding.”

Gordon Dicker has expanded this to:

“the activity of a person of faith in seeking to understand that faith and its implication for his or her life.”

More recently David Tracy has further refined the praxis element of theology. His definition is:

“the attempt to establish mutually critical correlations between an interpretation of the Christian tradition and an interpretation of the contemporary situation.”

This definition includes the task of theology, which one might say more prosaically is to help people to live Christianly. Using Tracy’s definition of theology, the task of ecotheology is to establish mutually critical correlations between an interpretation of the Christian tradition and an interpretation, or reading, of ecology. In simpler terms it is to help people to live Christianly in relation with the rest of creation.

Because ecology is by its nature a ‘global flow’ much ecotheological thinking must be done on a global scale. However, because people live in particular contexts ecotheology has particular applications. Ecotheology cannot determine whether a bureaucrat should order the damming of a river, or tell a farmer how much water s/he should use to irrigate a field. Rather,

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the function of ecotheology is to establish these mutually critical correlations, to connect Christian faith, theology and ecology so as to help the bureaucrat and the farmer, and each of us to make good ecological decisions.

For ecotheologians to confine themselves to their parent discipline of theology would cripple the ecotheological enterprise. There would be no sense in advocating a set of beliefs and actions concerning the environment if one did not know well what one was trying to help. Ecotheology is necessarily ‘of the earth’, and therefore incarnational and contextual. When the issue is a local one such as the subject for this thesis it would be senseless not to know the area concerned. A purely theoretical approach might win plaudits in traditional theological circles, but it would almost certainly cause resentment among those who actually lived in and had to deal with that landscape in practice. Therefore, Part One of this thesis, entitled “Establishing the Context”, includes chapters that establish the hydrological and geographical, and the human contexts of the Murray-Darling Basin.

Sallie McFague set ecological issues in a broader context. In effect theologically supporting White’s case McFague wrote of

“the dualistic, hierarchical mode of Western thought in which a superior and an inferior are correlated…These correlated terms – most often normatively ranked – reveal clearly that domination and destruction of the natural world is inexorably linked with the domination and oppression of the poor, people of color, and all others that fall on the ‘inferior’ side of the correlation. Nowhere is this more apparent than in the ancient and deep identification of women with nature...” ¹¹

McFague argues that these dualities are used to justify oppression:

“the characteristic Western mind-set has accorded intrinsic value...principally to the upper half of the dualism and has considered it appropriate for those on the lower half to be used for the benefit of those on the upper. Western multinational corporations, for example, regard it as ‘reasonable’ and ‘normal’ to use Third World people and natural resources for their own financial

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benefit, at whatever cost to the indigenous peoples and the health of their lands.”

To her list of dualities Australian theologian Norman Habel has added five that are specific to the Earth Bible project he edits: animate/inanimate, spiritual/material, heavenly/earthly, heaven/earth and sacred/profane.

Many theologians today argue that Western theology has been largely formed by the “characteristic Western mindset”, and indeed has contributed powerfully to it. Generally western Christians believe in a transcendent God who inhabits a Heaven that is separate from and, spiritually at least, above earth; and that human beings, though obviously part of nature are in some decisive sense over it. According to the “anthropocentric” understanding of biblical thought dominant within the western Church, humans are generally thought to be the main actors in life’s drama, while nature is thought of as the stage for God’s dealings within human history. According to one popular view

“the whole creation is the stage and scene of man’s adoption into sonship.”

Some thinkers agree with White that by being so anthropocentric Christian theology contributes to the oppression of nature. Laypeople may not understand theologians when they speak about the doctrine of salvation being given undue precedence over the doctrine of creation, but they notice when in practice Christians talk a lot about eternal salvation, or morals or social action, but very little about creation, and in practice treat creation like anyone else in society.

As we shall see in Part II, in Australia the dominant theological tradition has been and still is anthropocentric and transcendent. Recent years, however, have seen the emergence of ecological concern across a broad spectrum of theological traditions in this country. At the forefront of this development are theologians such as Paul Collins, Norman Habel, Denis Edwards and

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12 Ibid., 13
Andrew Dutney. The latter three work in Adelaide, a city whose water supply is threatened by human activity further upstream in the Murray-Darling Basin. Habel agrees with Collins that

“a major reason for our ecological crisis is anthropocentrism”\(^{15}\), and argues that anthropocentric Christian faith tends to “heavenism”. By heavenism Habel means the view that says because Christ came to save humans and has promised to prepare places for His followers there\(^{16}\) this world can be regarded as disposable.

Habel and other Australian theologians are some of a much larger group of theologians of otherwise disparate theological traditions around the globe who are engaged in a paradigm shift\(^{17}\). McFague expresses this shift in terms of three great questions. She believes that Christian theology has moved from asking, during the first part of the twentieth century the epistemological question,

“How can we know God?”

to asking, from the late ’60s onwards, the question of liberation theologies,

“How can we change the world?”
Theology is now shifting to ask the question:

“How can we save the world from deterioration and its species from extinction?”\(^{18}\)

McFague casts the latter two questions in a distinctly atheological way. Yet what she describes is no more than a renewed, long overdue emphasis on the doctrine of creation. At its most radical this re-emphasis finds expression in Matthew Fox’s “creation spirituality”\(^ {19}\), but it is appearing across the theological spectrum.\(^ {20}\) Clive Pearson has affirmed that

\(^{15}\) Norman Habel, "The Crucified Land: Towards Our Reconciliation with the Earth " Colloquium 28, no. 2 (1996). 10


\(^{17}\) N.T. Wright, for example would quite likely differ considerably on various theological issues with, say, Sallie McFague.


\(^{20}\) For example, as mainstream a theologian as Daniel Migliore is arguing that a good doctrine of creation is essential. Daniel L. Migliore, Faith Seeking Understanding: An
theologians of many persuasions are incorporating consideration of the environment into their theologies, and that all doctrines are in the process of being “greened”. 21 Neil Darragh describes this as “theology adjusting to the newcomer”. 22

This renewed theological emphasis upon creation has enabled natural linkages with indigenous spirituality to be made. Indigenous people around the world have lived in balance with their surrounding environments for millennia. In recent times their perspectives are starting to be listened to more carefully. 23 The new openness to the spirituality of indigenous people is also finding its expression in Australia. Chapter 4 will examine the spirituality of Aboriginal people who lived in the Murray-Darling Basin for thousands of years before Europeans, and address the question: If indigenous peoples have managed to live in relative harmony with their environments for thousands of years, why have western cultures not? The question is one of context, and demands consideration of ecotheology as a theology of context.

On Ecotheology as a Contextual Theology

The phrase “the contextualization of theology” was introduced by the Taiwanese theologian Shoki Coe 24 in 1973 as a new approach to understand the problematic relationship between faith and culture. Shoki Coe’s own context was affected by the Japanese occupation of Taiwan. 25 His friend, the Japanese theologian Kosuke Koyama, later cited Koe’s key understandings of "Christ and culture":

"The gospel must be culturally contextualized, yet it must 'gospelize' the cultural context itself. The incarnation is the ultimate event of

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23 See, for example, P. & Suzuki Knudtson, D., Wisdom of the Elders (North Sydney: Allen & Unwin, 1992). Recent apologies to the indigenous peoples of Australia and Canada by their respective national parliaments provide evidence for changing attitudes on the part of the dominant settler societies.
25 Shoki Koe was his Japanese name. His Chinese name was Chang Hui Hwang, or some other Anglicisation of it. This metamorphosis of his name came to epitomise Koe’s idea of contextualisation.
contextualization. This means that the gospel remains a stumbling block and no contextualization can domesticate it."\(^{26}\)

Like ecotheology itself, the argument that theology is by its nature contextual forms part of a "global theological flow"\(^{27}\) that has developed since World War II. Stephen Bevans argues that contextual theology is characterized by the addition of a third theological source, present human experience, to Scripture and Tradition of classical theology. If "classical theology conceived theology as a kind of objective science of faith"\(^{28}\) the recognition of human experience removes the claim to objectivity.

The missionary and anthropologist Charles Kraft was one of the first to begin to deconstruct traditional theological methodology, arguing that "...there is always a difference between reality and human culturally conditioned understandings (models) of that reality..."\(^{29}\)

For Kraft humans are conditioned by cultural and psychological factors, which affects how we perceive and interpret what we experience of reality. Consequently, although Kraft believes that God is absolute, "neither the absolute God nor the reality [God] created is perceived absolutely by culture-bound human beings."\(^{30}\)

Having argued, with the help of Kraft and others, the validity of contextual theology \textit{per se} and located it in relation to traditional theology Bevans proposed six theoretical models of theological method, each of which combine in different ways various elements\(^{31}\) that make a theology contextual.

Similarly, Daniel Migliore notes that "Confession of Jesus Christ takes place in particular historical and cultural contexts. Our response to the questions of who we say Jesus

\(^{26}\) Kosuke Koyama, "Christ’s Homelessness," \textit{The Christian Century} (1993), 702-703

\(^{27}\) Schreiter, \textit{The New Catholicity}.


\(^{30}\) Ibid.

\(^{31}\) According to Bevans these elements include scripture, tradition, human experience (personal, communal), culture (secular, religious), social location and social change.
Christ is and how he helps us will be shaped in important ways by the particular contexts in which these questions arise.”

Migliore mentions factors “external” and “internal” to theology that have prompted the development of contextual Christologies. One external factor is the realization on the part of Christians in Asia, Africa and Latin America that their theological reflection must attend to their own distinctive non-Western cultures and forms of thought. By “internal factor” Migliore refers to the incarnation of Jesus Christ which teaches us that God dares to work in particular human contexts to achieve God’s purposes for the whole of the earth. This view of incarnation is understood by missiologist Andrew Walls as a form of translation. Consequently,

“The first divine act of translation thus gives rise to a constant succession of new translations. Christian diversity is the necessary product of the incarnation.”

Because ecotheology takes seriously and speaks for the majority of God’s creation that has no hope of speaking for itself it is intrinsically a theology both of context and of liberation. For ecotheologians of many theological persuasions neither the earth as a whole nor the local environmental contexts in which all persons live are simply stages upon which the drama of human salvation is to be played out. The Earth Bible Project, based at Adelaide near the mouth of the Murray-Darling Basin, though with input from many contexts around the globe, is an example of a glocal enterprise that affirms the intrinsic worth of the environment.

The contextual task of ecotheology is to move from the more general understanding of context to identify and name particular context, and from an anthropocentric to a biocentric understanding of context. The theological initiative of Koe and others focussed upon gospel and culture. The former has traditionally been understood to be for humans and the latter is a human

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32 Migliore, *Faith Seeking Understanding: An Introduction to Christian Theology*, 197
33 Ibid., 198
35 Proceeding from the post-modern insight that the way in which humans apprehend truth depends as much upon interpretation as on what is interpreted, and using hermeneutical techniques of suspicion, deconstruction and retrieval developed by feminist theologians, the Earth Bible Project has developed 6 aims and 6 ecojustice principles to guide their biblical interpretation. These are found as Appendix 3.
construct. A thesis on the Murray-Darling Basin, however, highlights a local, regional, definable area not simply of the humans, but of the bios, of the whole of creation in that landscape. Accordingly, the thesis needs a redefined understanding of contextuality. Douglas John Hall wrote that a “…context can be a certain geographic area”, but that “Systematic …theology has been slow to learn the lesson of contextuality, especially its place-component”.  

This lesson lies at the heart of ecotheology, which by its nature is both global, relating to the oikumene, that is the whole inhabited world, and local.

The notion of place lends itself more readily to a biocentric understanding of theology. One biblical way into this discussion is via the use of kosmos, which enables bringing together the biosphere, that is, the whole of life, and the cosmos, which is the whole world, with the biblical and theological. Herman Sasse’s analysis of the meaning of kosmos in the New Testament, and particularly in John’s Gospel, provides a good grounding for a biocentric understanding of global context. Having won that ground we can then discuss a theology of local context.

John 3:16, described famously by Luther as “the bible in miniature”, shows that God is vitally interested in and deeply loves the kosmos, the context God created. Not content simply to save human souls out of their contexts, “…God so loved the world, that he gave his only Son…”  

Sasse argued that it would be a mistake to anthropomorphize the meaning of ho kosmos in either the particular context of John 3:16, the broader context of John’s Gospel or the New Testament as a whole. In his understanding “The universe and all individual creatures, the visible world and the invisible, nature and history, humanity and the spirit world, are all brought under the single term kosmos. The kosmos is the sum of the divine creation which has been shattered by the fall, which stands

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37 My emphasis.
under the judgment of God, and in which Jesus Christ appears as the Redeemer.”

For Sasse it is not simply humanity but the whole *kosmos* that is “in some sense personified as the great opponent of the Redeemer in salvation history.”

Yet this is precisely God’s *kosmos*, God’s creation (*ktisis*), God’s context that God is in the process of redeeming. Creation is not as it was meant to be, but has been subverted into rebelling against God’s good purpose and design. That is why Paul can write of the frustration being wrought upon it:

“For we know that the whole creation has been groaning together in the pains of childbirth until now.”

Paul’s metaphor linking human pain to that of the cosmos has profound implications. Paul Santmire has specifically linked this travail of nature with ecotheology in the title, *The Travail of Nature: The Ambiguous Ecological Promise of Christian Theology*. Much of Santmire’s suggested way forward, described in his subsequent work *Nature Reborn: The Ecological and Cosmic Promise of Christian Theology* and implied by Paul’s metaphor of childbirth, has to do with going beyond anthropocentrism to biocentrism, or cosmo-centricism. For Sasse these “pains of childbirth” refer to the *kosmos* redeemed. Creation is just as caught up in the struggle for liberation from the effects of sin as are humans.

Similarly, Leonardo Boff has applied this metaphor to the development of the Amazon River Basin, which he says bears two great wounds, human poverty and environmental scarring. Liberation theologians have not always understood the matter like this. For much of the twentieth century Latin American, Asian and African theologians, including Boff, were preoccupied with questions of economic injustice, including the maldistribution of land among humans. This much cited statement of the Mexican revolutionary

39 Romans 8:19-22 (ESV)
40 Santmire, *The Travail of Nature*.
Emiliano Zapata is illustrative of the context in which these theologians operated:

“The land belongs to everyone, like the water, the air, and the light and warmth of the sun. And those who work the land with their own hands have a right to it.”

This tension was addressed by Boff, who agreed with C.S. Lewis that human power over nature is really the

“power exercised by some people over others, using nature as a tool”

and who began to link economic justice with ecological justice, arguing that it is as important to contribute to the reproduction of nature as to ensure that the interests of the workforce are safeguarded. Though an advance over the sheer anthropocentrism of earlier liberation theology there is still in this comment a sense that nature exists for the sake of humans. In his later writing, however, Boff wrote that

“Everything that exists, co-exists, and is part of an infinite web of all-inclusive relations.”

Clearly his concern for liberation has developed beyond anthropocentrism.

Boff has reminded us that while the challenges to society and Christianity posed by global civilization are acute and global they are inevitably expressed in specific localities. Likewise, Jürgen Moltmann’s global concern for nuclearism and ecological degradation is expressed in the question “Where is Christ after Chernobyl?” The Chernobyl of this thesis is the Murray-Darling Basin. Because God finds particular context to be important, rigorous, intentional, scientific study of that context, which one then wishes to read theologically, is justified. In an ecotheological reading

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of the Murray-Darling Basin the better the understanding of the science, the better the theology is likely to be. The contextual and ecotheological weave in and through each other. Further, if God is interested in particular context surely we need to be too. The young Christian women of Broken Hill who implied that ecotheology was not of the Gospel by her question,

“Doesn’t this world have a use-by date?”
displayed an understanding of God’s intention for creation that was anthropocentric and dualistic. Hans Künıg’s famous sentence,

“God’s kingdom is creation healed”,
points to a more holistic understanding.

Even from an anthropocentric perspective ecotheology is now clearly a theology of context, liberation and justice. It is now virtually beyond dispute that rising sea levels have been caused largely by the greenhouse gas-emitting activities of the wealthier nations. Yet poor nations such as such Kiribati and Vanuatu, built upon Pacific Ocean coral atolls, and Bangla Desh, situated largely on a vast river delta, are bearing the brunt of rising sea levels. The more humans damage the oikos, the house of this earth which is the only home we know, the less able we are to develop an oikonomia, ie. an economy, a law or ordering of the house that is beneficial for all who live in it. This hard, ecological reality is causing theology to “adjust to the newcomer”, ecotheology, to use Neil Darragh’s previously quoted phrase. As Clive Pearson wrote,

“it is now evident that theology has been doing a lot of work with respect to its eco-prefix during the past decade. There has been a great deal of sifting of the Christian tradition for the sake of this kairos moment.”

On Positioning Ecotheology Theologically

Ecotheology is not only contextual; like this thesis it is also cross-disciplinary, combining the studies of ecology and theology. Denis Edwards argues that

“...there is a profound inner link between an adequate theology and an ecological stance.”

Barry Leal writes that

“the concept [of ecotheology] brings together a quest for religious understanding and a study of the environment.”

Clive Pearson has called ecotheology

“the greening of theology”.

Not simply a division or a doctrine within systematic theology, ecotheology changes the way in which theology itself is perceived and done. In a sense it is an ecological reading of theology, theology done from the perspective of ecology, rather than simply from the perspective of humans. Impelled by the current, world-wide crisis of environmental degradation, ecotheology argues from Christianity’s resources of Bible, tradition and history, reason and experience that the whole of God’s creation is important to the Creator. Not simply the stage on which the human drama of salvation is played out, the creation is also itself to be redeemed in God’s plan of salvation.

That claim is not evident to many people, either within or outside of the Church. Perhaps the most common question an ecotheologian is asked is:

“What does this have to do with the real business of religion?”

Many Christians are what Norman Habel calls ‘heavenists’, believing that ‘the main game’ is salvation of souls; for others the business of Christianity might be summarised by the term “social justice”. Many ecologically concerned opponents of the Church, however, readily accept Lynn White’s

51 D. Edwards, Jesus and the Wisdom of God: An Ecological Theology (Homebush, NSW: St Pauls, 1995)., 2
52 Leal, The Environment and Christian Faith: An Introduction to Ecotheology., 10
54 Roman 8:18-23
charge that “Christianity bears a huge burden of guilt” for the “current ecologic crisis”, and that Christians of both persuasions are more likely to be part of the problem rather than the solution.

In an early anglophonic ecotheological response to White, Paul Santmire wrote of Christian theology’s “ambiguous ecological promise”\(^55\). Santmire argued that

> “the data of biblical theology, in both the Old and New Testaments, allow us – if they do not indubitably require us – to develop an ecological reading of biblical faith”,

and that the protagonists of the anthropocentric approach employ historical categories in their biblical interpretation in too narrow a way.\(^56\) That is, Santmire believed that God’s self-revelatory and salvific acts, recorded as history in the Bible, should not only be understood as being for the benefit of humans but also for nature.

In support he suggested that a number of ecological motifs emerge from the Scriptures. From the Old Testament he named *The Centrality of the Land and the Blessing of Yahweh*\(^57\), and drew heavily upon Walter Brueggemann, who argued that

> “…it will no longer do to talk about Yahweh and his people... but we must speak about Yahweh and his people *and his land*”,\(^58\)

For Brueggemann land is a central, if not the central, theme of biblical faith. This theme is most fully expressed in the Deuteronomic tradition, where it is regarded as a *gift*. Formalising an understanding that is closer to that of indigenous peoples than the typical Western view Leviticus 25:23 voices God’s instructions in regard to the Promised Land:

> “The Land shall not be sold in perpetuity, for the land is mine; with me you are but aliens and tenants.”

\(^55\) Santmire, *The Travail of Nature*.

\(^56\) Ibid. 189

\(^57\) Ibid. 190-2

The gifts of this Promised Land are enduring, and not so precarious as those of manna, quail and water in the wilderness, but the principle is the same: the people are to live trusting in the God who has always provided for them.

Santmire’s second theological motif from the Hebrew Scriptures is *Election Faith and Creation Faith*. Von Rad, Wright and Lampe maintain that concern with nature is a ‘secondary addition’ to Israel’s primary faith in human redemption, and that it may even derive from syncretism with the ‘nature religions’ of Canaan. However, Santmire argues that, according to the biblical witness, the God who graciously delivers the people of Israel is the ‘Lord of heaven and earth’. If the emphasis of the anthropocentrists is upon election and redemption Santmire focuses instead upon the character of the God. He concludes that

“this theocentric approach to Israel’s originating election faith appears to be at least as viable as the narrower interpretation taken for granted by the proponents of the anthropocentric approach to the Old Testament theology of nature.”

Thirdly, Santmire pointed to *The Flowering of Creation Faith*. Having addressed the anthropocentrists’ core objection Santmire reviewed the great amount of material in the Old Testament that celebrates nature. The creation accounts depict Yahweh almost as a master builder who looked at what he had achieved and pronounced it to be good. The Royal Psalms

“envision the ascent of the divine king to the heavenly throne so that he might rule over all things and fill all things with his glory.”

Many of the psalms describe Yahweh’s intimate knowledge of and care for his creation. Psalm 148 expresses the obverse side of the Creator’s satisfaction – nature’s praise of Yahweh. Yahweh is a God who rejoices in all God’s works!

Next, Santmire pointed to *The Future of the Land and the Whole Creation*. Ernst Käsemann said, memorably, that apocalyptic is the mother of all Christian theology. Both the Old Testament’s prophets and apocalyptic

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59 Santmire, *The Travail of Nature*.197
60 Ibid. 197
61 Ibid. 200
writers used the image of blessed, fertile, fecund land to point to God’s future for his people. The last chapters of Isaiah in particular unify the themes of land and fecundity in a powerful and universal way.

It is possible to read much of the New Testament in continuity with the prophetic-apocalyptic tradition. From this perspective, argued Santmire, the New Testament’s theology can be seen to be thoroughly shaped by an eschatologically construed ecological motif.

Jesus proclaimed the gospel of the Kingdom of God. Since He called people to decision His message had an anthropocentric focus. There are those who warn, sternly, that if anything is added to this Gospel of redemption and salvation it will actually detract from it. Yet Jesus’ parables are typically bucolic, and betray His keen eye for and interest in the things of this earth. Is God only interested in saving humans for eternal life, or does the Incarnation of Jesus Christ imply that God is interested in this planet which God has created? Is the Sunday School definition of a parable – “An earthly story with a heavenly meaning” – adequate, or is there a sense in which the Kingdom of the Heavens, the range of God’s effective will, begins right here on earth? Santmire argues as did Küng, noted above, that the latter is true and that the apocalyptic proclamation of Jesus points to the renewal of the whole creation. This theme is still more obvious in Paul’s theology, and is complemented by another, the Cosmic Lordship of Christ.

Both Colossians and Ephesians exalt Christ as the Cosmic Lord. Schillebeekx explains that first century people of cities such as Colossae and Ephesus

“were aware of a cosmic fault, a kind of catastrophe in the universe, a gulf between the higher (heavenly) and the lower (earthly) world.”

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63 Romans 8: 1 Cor. 15:22-28
64 In Santmire, *The Travail of Nature*. 204
They longed for a restoration of the unity of the cosmos by re-establishing spiritual linkages with the heavenly realms above. The letters to the Colossians and the Ephesians proclaimed that in Jesus Christ God did just that.

A number of other scholars have subsequently also derived from their study of the Bible ‘ecological motifs’ that argue ways in which concern for the environment can be shown to be central to the concerns of salvation history. Like Walter Brueggemann, Geoffrey Lilburne has explored what the Bible and Christian theology has to say about land, and he has done it from an Australian perspective.\(^65\) Paul Collins’ thesis is that this is ‘God’s Earth’, and that, contrary to the assertions of those who feel that the purpose of life is to reach heaven, ‘matter really matters’.\(^66\) W. J. Dumbrell has explored the biblical theme of covenant in respect to creation.\(^67\) Similarly, Irish geologist and theologian Ron Elsdon\(^68\) and Swedish biblical scholar Karin Lindvall\(^69\) have found resources in the Hebrew Scriptures to fund an ecological imperative. Sallie McFague portrays a model of the universe or world as ‘God’s body’ and ‘our meeting place with God’.\(^70\) In a later book McFague argued, simply, that we should love nature.\(^71\) So did James Nash.\(^72\) Love is, after all, the central Christian quality. In similar vein David G. Hallman suggested that the biblical values of gratitude, humility, sufficiency, justice, love, peace, and faith and hope are important to promote the causes of justice and sustainability.\(^73\) Both Denis Edwards\(^74\) and Celia
Deane-Drummond\textsuperscript{75} have used the biblical theme of Wisdom as an ecotheological linking motif, whereas the Canadian theologian Douglas John Hall uses the steward in the same way. Hall’s \textit{The Steward}\textsuperscript{76} is a thorough exposition of this biblical motif. In \textit{Imaging God: Dominion as Stewardship}\textsuperscript{77} Hall works specifically on the motif of steward as a model for human identity in relation to God and the environment. Jürgen Moltmann, however, has argued that the Sabbath, not the human, stands at the centre of the doctrine of creation\textsuperscript{78}.

In \textit{The Earth Bible} series noted above Norman Habel and others take another approach. Rather than working with motifs from within the Bible they consciously reinterpret the Bible according to 6 aims and 6 ‘ecojustice principles’\textsuperscript{79} they have delineated. Habel, who is from South Australia, near the mouth of the Murray-Darling Basin, also writes of the necessity for being reconciled with the earth.\textsuperscript{80} Historical theologian Alister McGrath, however, finds orthodox biblical interpretation and theology satisfactory as it is. Instead, he looks to “the re-enchantment of nature”\textsuperscript{81}, believing that developments in western thought, particularly the Enlightenment, have disenchanted nature for westerners, leading us to treat it as having only instrumental, instead of intrinsic value.

In the same year that Santmire’s response to the ecological complaint against Christianity became available to the English-speaking world Jürgen Moltmann’s \textit{God in Creation} was published in German.\textsuperscript{82} Moltmann came to ecotheological theology from his \textit{Theology of Hope},\textsuperscript{83} the doctrine of

\begin{thebibliography}{99}
\bibitem{75} Celia E. Deane-Drummond, \textit{Creation through Wisdom: Theology and the New Biology} (Edinburgh: T & T Clark, 2000).
\bibitem{76} Douglas John Hall, \textit{The Steward: A Biblical Symbol Come of Age} (Grand Rapids: Eerdmans, 1991; reprint, 2), and several other publications.
\bibitem{77} ———, \textit{Imaging God: Dominion as Stewardship} (Grand Rapids: Eerdmans, 1986).
\bibitem{79} Norman Habel (Ed.) \textit{The Earth Bible Series} Sheffield: Sheffield Press; 2000-2002
\bibitem{80} See Appendix 3.
\bibitem{81} Habel, "The Crucified Land." 3-18
\bibitem{83} Jürgen Moltmann, \textit{Gott in Der Schöpfung: Ökologische Schöpfungslehre} (Munich: Christian Kaiser Verlag, 1985).
\end{thebibliography}
creation he developed was intrinsically trinitarian and pneumatological, and he hoped to depart, to some extent at least, from the traditional methodology of systematic theology by interweaving the three articles of the Apostles’ Creed in his discussion:

“By the title ‘God in Creation’ I mean God the Holy Spirit. God is ‘the lover of life’ and his Spirit is in all created beings…I have interwoven these three articles [of the Apostle’s Creed] together in a Trinitarian sense so that I was able to develop a pneumatological doctrine of creation. This…takes as its starting point the indwelling divine Spirit of creation; and I hope that it may also therefore provide points of departure for a discussion with the old and new non-mechanistic, holistic philosophies of nature.”

Moltmann’s compatriot Sigurd Bergmann has taken up his offer of a point of departure for discussion, developing “his ‘ecological theology of the liberation of nature’ against the background of [4th century Archbishop of Constantinople] Gregory’s [of Nazianzus] Trinitarian cosmology”.85

Like Moltmann, Bergmann developed trinitarian, pneumatological86 and immanent theological emphases. In the concluding chapter I, too, shall accept Moltmann’s offer. Bringing the two concepts from the spirituality of Australian aboriginal to the discussion table I shall develop the same theological emphases.

Having to do with the study of life and matter, ecotheology makes explicit that which all too often has become implicit in theology: Christian theology is incarnational, and therefore local and specific as well as being universal. Ecotheologians follow the lead of liberation theologians and feminist theologians in developing local theologies. Lilburne’s A Sense of Place87 has a distinctly Australian flavour. So do David Tacey’s Edge of the Sacred: Transformation in Australia88 and ReEnchantment: The New Australian Theology89. That Tacey and McGrath both use the word ‘re-enchantment’ in

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84 Ibid. xiv Italics mine.
86 For Bergmann the Spirit is the Liberator of Creation.
their respective ecotheologies is an interesting indication of the discipline’s ability to be ‘glocal’, and to engage scholars from different parts of the theological spectrum.

A number of theologians now believe that theology itself must change in response to the world-wide crisis caused by ecological degradation. Sallie McFague argues that the discipline must become more collegial:

“Our situation calls for a different way of conducting ourselves as theologians…We need to work together, each in his or her own small way, to create a planetary situation that is more viable and less vulnerable. A collegial theology explicitly supports difference. One of the principal insights of both feminism and postmodern science is that while everything is interrelated and interdependent, everything (maple leaves, stars, deer, dirt – and not just human beings) is different from everything else. Individuality and interrelatedness are features of the universe; hence no one voice or single species is the only one that counts.”

How theology should respond to the challenge of environmental degradation is the subject of debate across the theological spectrum. As McFague pointed out, difference can be regarded as a positive development within theological circles. Paul Collins described the parameters and implications of the theological debate over the place of its new ‘eco’ prefix:

“…Christianity will have to face up to some radical shifts of emphasis in its theology in order to remain in touch with the ecological age. The consequences for Christianity will involve a re-focusing of our notion of God and a new definition of the meaning of transcendence. Ecology will also have consequences for the theology of revelation: it will mean that we will slowly come to recognize that we are more likely to encounter the transcendent presence of God in the natural world than in the Bible or the church.”

Western Christianity’s perception of God’s transcendence and immanence strongly influences how we perceive and treat God’s earth. I shall return to this consideration in Part III. Collins raises another fundamental consideration, however. Ecology implies an enormous timescale, which requires Christians to rethink our understandings of time, history and salvation history in relation to cosmic history:

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90 McFague, "An Earthly Theological Agenda." 13-14
91 Collins, God's Earth: Religion as If Matter Really Mattered., 10-11
“Ecology will also require a shift in the way that theology perceives the position of Christ in human history. For all of Christianity, Christ is central; he is the focal point of history. But ecology posits the natural world and its long cosmic history as the primary given. Theology in an ecological age will see the world as the first icon and sacrament of God and the fundamental source of revelation. In contrast to the history of the cosmos, salvation history (the history of Judaism, Christ and Christianity) is remarkably brief and limited. Also, if the natural world is the primal revelation, then this implies a relativity in the position of the Bible and the church as revelatory sources. In an ecologically influenced world-view, both the Bible and the church will be relativized to become specific and supportive sources for the primal revelation of God which will be found in the natural world itself.”

Among other theologians who have addressed the question that the age of creation puts theology are Dean Drayton and Antje Jackelén.

An ecological reading of theology continues liberation theology’s and feminist theology’s critique of the subject-object dualism received from Platonic thought, and fundamental to the western worldview. Adding “culture/nature” to the lists provided by McFague and Habel Peter Hay argued that,

“It is the masculine side of each of these dualisms, feminists argue, that has been elevated and universalised: herein lies its potency as an instrument of domination.”

In a process Rosemary Radford Reuther terms ‘naturalised domination’ dualism has been made to seem the unavoidable order of things. Ecofeminist Sallie McFague argued that:

“…the fundamental dualism of Western culture is reason vs. nature. This dualism illuminates most of the other dualisms: whatever falls on the top side of a dualism has connections with reason and whatever falls on the bottom side is seen as similar with nature….whatever falls into the nature side of the dualism is not a subject; rather it is merely an object for the use or pleasure of those who fall into the reason category. This is the final outcome of nature

92 Ibid., 10-11
95 See pp.28-9
96 Peter Hay, Main Currents in Western Environmental Thought (Sydney: University of New South Wales Press Ltd, 2002), 74
as merely the mirror of the mind, of knowledge as the eye of the mind: the dualism of reason versus nature – a separation so intense that intimacy, mutuality and interdependence are impossible.”

Leslie Dewart has argued that “the ‘dehellenization’ of Christian belief is one of the most urgent requirements of Christian theology in our time.”

Like liberation theology and feminist theology, ecotheology challenges these Hellenistic dualisms. The close relationship between these three ‘sector theologies’ that arose in the twentieth century is evident in compendia such as *Ecotheology*, edited by David G. Hallman. Together, they have the potential to correct a longstanding, fundamental fault in the parent discipline.

On the other hand ecotheology involves a theological reading of ecology, and of all human interaction with nature. Lynn White justified the following statement in detail:

> “What people do about their ecology depends on what they think about themselves in relation to things around them. Human ecology is deeply conditioned by beliefs about our nature and destiny – that is, by religion.”

If White is correct, and even in a secular, post-modern era religion does form the basis of our worldviews and, consequently, the ways in which we relate to the world, the contribution of ecotheology to halting ecological degradation may be to read the situation theologically and to contribute that unique perspective to society’s growing ecological discussion. There is indeed an increasing awareness in theological circles of the importance of “public theology”, contributing theologically to public debate and discussion. Ecotheology is a vital subject for public theology.

More particularly, the development of ecotheology is part of a revitalised discussion between religion and science I have already referred to. Biologist Carolyn King seeks to integrate her professional insights, her passion for the suffering environment and her Christian faith:
“Despite its ambiguities and chequered past, Christianity is a radically incarnational, historical faith, anchored to the material world of time and space and insisting that creation and redemption are matters of direct, earthy experience in the present world as we know it. Of all the mainstream religions, surely Christianity ought to be able to say something useful about ‘lost integrity’, and to avoid isolating discussions of conservation or environmental problems from the related questions of social justice and of the advance of science, or of the great religious questions that undergird them all.”

Initiatives such as The Lutheran Theological Seminary at Chicago’s Zygon Center for Religion and Science and journals such as Ecotheology may indicate that the long ‘cold war’ between science and religion is nearing its end. Of a number of other contributors who could claim to be both scientists and theologians Australian biologist Charles Birch and, more recently, the Irish molecular biologist and historical theologian Alister McGrath have made valuable inputs to the ecotheological discussion.

This dimension of ecotheology, in which theology contributes directly to ecology, may not have developed as far as the reverse, in which ecology is in the process of ‘greening’ theology, but there are now encouraging signs that theology is starting to make a significant contribution not only to the discussion with science, but to the field of ecology. Writing in an interdisciplinary area causes methodological problems, but methodological conflicts within the sciences, particularly controversies between those using qualitative and quantitative research methodologies are becoming

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102 Carolyn M. King, _Habitat of Grace: Biology, Christianity and the Global Environmental Crisis_ (Hindmarsh, SA: Australian Theological Forum, 2002), 6,7

103 The Zygon Center hosts an annual colloquium entitled “Epic of Creation: Scientific, Biblical and Theological Perspectives on Our Origins”.


Alister E. McGrath, _A Scientific Theology: Theory_ 2ed., 3 vols. (London: T & T Clark, 2006). McGrath has clearly been stimulated by lively debate with Oxford University colleagues, humanists and scientists Richard Dawkins and Peter Atkins.
increasingly common.\textsuperscript{106} It is to ecotheology’s relationships with non-theological disciplines that I now turn.

\textbf{On Other Relevant Disciplines}

Ecotheology is one of many disciplines working within the area of the environment. Immediately a specialist in one discipline seeks to make use of the insights of another discipline questions of “order of generality” are raised. In what detail and with what specificity, does a theologian (or other specialist) write about the environment? Sallie McFague has pointed out that the tradition of western theology, in particular, has been to write with great generality, even though theologians invariably write out of and respond to particular contexts and concerns. The issue of environmental degradation, however, demands detailed, specific, scientific knowledge. Nevertheless, an ecotheologian must write as a theologian and not as a scientist. As White commented,

“More science and more technology are not going to get us out of the present ecologic crisis until we find a new religion, or rethink our old one.”\textsuperscript{107}

Moreover, this thesis is limited to a specific geographic area. A good knowledge of the Murray-Darling Basin from the points of view of other disciplines, and at an appropriate ‘order of generality’, is necessary for a good ecotheological reading of the Basin. The key is to find the appropriate order of generality when considering not only the ‘hard’ sciences such as geology, hydrology and biology, but the ‘soft’, social sciences of anthropology and palaeontology, history and sociology. An ecotheological reading involves studying the contributions to knowledge of the Murray-Darling Basin of each other discipline to sharpen theological insight, so that ecotheology might in its turn contribute to the ecological discussion.

The key ‘hard’ scientific discipline as far as the Murray-Darling Basin is concerned is hydrology, which is “the science of the properties of the earth’s

\textsuperscript{107} White, “The Historical Roots of Our Ecologic Crisis,” 1206
water, especially of its movement in relation to land". A knowledge of the Basin’s hydrology requires a knowledge of its geology, and leads to an understanding of its biology and insights into the development of human culture within its bounds.

However, it is appropriate to start by looking at the Basin’s geology and geography. These disciplines pose the aforementioned question of time to theology. Historian Paul Sinclair raises this issue in the context of the Murray River:

“On a 100-year time scale…the ecological changes caused by agricultural and urban development and regulation of the river have been severe. On a 1000-year time scale these changes remain profound. On a 100,000-year time scale human activities begin to fade, although they will remain significant. On a million-year scale most human impacts are relatively minor compared to changes caused by geological disruptions. On a billion-year scale even a human-caused mass extinction of plants and animals, which many scientists currently believe to be occurring, would cause only an interesting ripple on the fossil record.”

Theological debates over the earth’s age and the associated issue of how to interpret the biblical creation accounts are relevant to this study insofar as they affect the issue of human identity, considered above. Who, and of what importance, are humans in relation to a vast, ancient universe and the God who made it? Are we of vanishing insignificance, or are we vastly important? The answers we propose have profound implications for the way in which we live. Despite the contributions of Paul Collins and other theologians, both Jackelén and Drayton consider that theologians, and church attenders, respectively, have barely begun to consider the implications of a vastly old universe.

The Basin’s hydrological problems are being repeated around the globe. As the Wentworth Group of Concerned Scientists put it,

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110 Jackelén, *Time and Eternity*.
“Water security is a principal concern for sustainable development in the 21st century.”

Malin Falkenmark’s and Johan Rockström’s *Balancing Water for Humans and Nature: The New Approach to Ecohydrology*, Mary White’s *Running Down: Water in a Changing Land*, and *Rivers as Ecological Systems: The Murray-Darling Basin*, edited by W.J. Young, provide information on hydrology around the world, in Australia and the Murray-Darling Basin respectively. The Murray-Darling Basin Commission has published much scientifically valuable material. The CSIRO has also produced a wealth of material on Australia’s and the Basin’s ecology. The Wentworth Group has recently made two important contributions to the public debate on water policy in Australia.

The issue of salinity, while not to be separated from the matrix of ecological problems threatening the well-being of the Murray-Darling Basin, has particular potential to cause environmental degradation. It is also a rich biblical symbol. *The Salinity Crisis: Landscapes, Communities and Politics*, came from the University of Western Australia’s academic community, and deals mostly with the acute crisis of salinity in that state, but it includes the Murray-Darling Basin in its considerations. The ecotheological implications of salinity in the Murray-Darling Basin are addressed in my Bachelor of Theology (Honours) dissertation.

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113 Ibid.


116 The material produced by these organisations is best accessed through their respective websites. In 2008 the Murray Darling Basin Commission was superseded by the Murray Darling Basin Authority.


118 Quentin et al. Beresford, *The Salinity Crisis: Landscapes, Communities and Politics* (Crawley, WA: University of Western Australia Press, 2001).

There is an increasing body of literature concerning aboriginal settlement in Australia and the Murray-Darling Basin. During the middle portion of the twentieth century, as Australians were coming to terms with their environment’s unique landscape, geological, biological and anthropological history, and its hydrology and biota, a number of resource books about the Basin were published. One of the best known of these is *Rivers of History* by Edmund Gill, then Deputy Director of the National Museum of Victoria. Anthropologists Joseph Birdsell and Norman Tyndale have given important insights into the spread of aborigines throughout the Australian continent. More recently geologist Jim Bowler, most famous for having been responsible for the discovery of the ancient aboriginal skeletons ‘Mungo Man’ and ‘Mungo Woman’, has produced a CD-ROM entitled *Lake Mungo: window to australia’s past*, which examines the palaeogeology, palaeontology and palaeohydrology of what has become the Murray-Darling Basin. Geoffrey Blainey’s *Triumph of the Nomads: A History of Ancient Australia* and Mulvaney and Kamminga’s *Prehistory of Australia* are both in their ways comprehensive overviews of their subject, while Berndt, Berndt and Stanton’s *A World That Was: The Yaraldi of the Murray River and the Lakes, South Australia* is a vastly detailed, fine-grained ethnological study of traditional Aboriginal life along part of the lower Murray River.

Similarly, there is an ever-growing body of literature on European settlement of the Basin. Classic works by Marcus Clark and Russel Ward have been supplemented by more modern endeavours.

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120 E.D. Gill, *Rivers of History* (Sydney: Australian Broadcasting Commission, 1970). This was originally broadcast under the title “The Murray/Darling System – 5,000 miles of History and Prehistory”.
121 J.M. Bowler, *Lake Mungo: window to australia’s past* (Melbourne: University of Melbourne, School of Earth Sciences, 2002).
Flannery’s *The Future Eaters: An Ecological History of the Australasian Lands and People*\(^{127}\) has quickly become a classic of its genre. Tim Bonyhady argues in *The Colonial Earth* that, far from being a product of the 1970s, an environmental aesthetic has always been part of the culture of European Australia\(^{128}\). Some histories such as Stuart Piggin’s *Spirit of a Nation: The Story of Australia’s Christian Heritage*\(^{129}\) and Paul Gascoigne’s *The Enlightenment and the Origins of European Australia*\(^{130}\) have provided more specialized resources.

A number of non-scientists and non-theologians\(^{131}\), such as authors Annie Dillard\(^{132}\) and Patrice Newell\(^{133}\), historian Paul Sinclair\(^{134}\), and local historians David Mack\(^{135}\) and Kay Masman and Margaret Johnstone\(^{136}\), look at their subjects (particular creeks and rivers in each case) with loving eyes. The last three have written on particular waterways within the Murray-Darling Basin, and Patrice Newell on her experiences living by the Pages River, a tributary of the eastward-flowing Hunter River which shares similar issues as those flowing west of the Great Dividing Range. Dillard’s *Pilgrim at Tinker Creek* won the Pulitzer Prize in 1974, and has become a classic in its genre. Although all these authors write with the advantage of particularity (the subject of love needs to be particular), and with great skill, they do not write within the discipline of theology. Dillard, in particular, raises deep theological issues\(^{137}\), but does not penetrate them deeply or do

\(^{131}\) Perhaps ‘lay theologians’ would be a better term, on the assumption that every human thinks about God and the meaning of life at some time or another.
\(^{134}\) Sinclair, *The Murray: A River and Its People*.
\(^{137}\) The issue of theodicy as it relates to the seeming cruelty of all sorts of species concerned Dillard.
much to link her work to the body of theological work. This is no criticism of her: she simply had another purpose in mind.

**Sampling from other Disciplines**

Because theology shares the quest to derive meaning from creation with other disciplines such as history and the arts, and because ecological crisis provides an imperative for people to work across disciplines for the common good it is important for ecotheologians to have some acquaintance with what scholars in other disciplines are saying. A comprehensive review of contributions from other disciplines would be both impossible and unnecessary. Instead, the remainder of this chapter will examine how insights from three relevant works from the disciplines of literature, history and lexicography aid theology to gain insights into why European settlers have affected the Basin’s waterways.

**Landscape & Memory**

We begin in Europe where the culture that determined the Murray-Darling Basin’s European settlers’ worldview and attitudes was formed. In *Landscape and Memory* Simon Schama explored the relationships between natural environments and human cultures that have sprung up in them, writing with such a breadth and density of allusion that it is difficult to summarize. In an extended Introduction, Schama harked back to his boyhood memories of the Thames River, writing of the physical character of that landscape. This mixture of nature and what he calls “manscape”, assailed his senses and provoked in him the kinds of memories and myths (and even obsessions!) such as people commonly remember from our childhoods. These helped to give context and meaning to his life. In the wonderful sentence,

“Though lines of imperial power have always flowed along rivers, watercourses are not the only landscape to carry the freight of history”,

Schama generalised from his own experiences to British memory and culture, and from rivers to other landscapes. From there Schama employed his Jewish tradition to take readers to the “forests of Zion” and

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139 Ibid., 5
their ancient denudation\textsuperscript{140}, on to a discussion of wilderness, a discussion of the etymology of the word “landscape”, by which time the contours of his discussion were established.

The following long quote summarises Schama’s intent and argument:

“It is not to deny the seriousness of our ecological predicament, nor to dismiss the urgency with which it needs repair and redress, to wonder whether…a new set of myths are what the doctor should order as a cure for our ills. What about the old ones? For notwithstanding the assumption…that Western culture has evolved by sloughing off its nature myths, they have, in fact, never gone away…The cults which we are told to seek in other native cultures – of the primitive forest, of the river of life\textsuperscript{141} of the sacred mountain – are in fact alive and well and all about us if only we know where to look for them.

And this is what Landscape and Memory tries to be: a way of looking; of rediscovering what we already have, but which somehow eludes our recognition and our appreciation. Instead of being yet another explanation of what we have lost, it is an explanation of what we may yet find.

…more is at stake than an academic quibble. For if the entire history of landscape in the West is indeed just a mindless race toward a machine-driven universe, uncomplicated by myth, metaphor and allegory, where measurement, not memory, is the absolute arbiter of value, where our ingenuity is our tragedy, then we are indeed trapped in the engine of our self-destruction.

At the heart of this book is the stubborn belief that this is not, in fact, the whole story…The point of Landscape and Memory is not to contest the reality of this [ecological] crisis. It is, rather, by revealing the richness, antiquity and complexity of our landscape tradition, to show just how much we stand to lose. Instead of assuming the mutually exclusive character of Western culture and nature, I want to suggest the strength of the links that have bound them together.”\textsuperscript{142}

\textsuperscript{140} Schama dismisses Lynn White majestically: “But though environmental history offers some of the most original and challenging history now being written, it inevitably tells the same dismal tale: of land taken, exploited, exhausted; of traditional cultures said to have lived in a relation of sacred reverence with the soil displaced by the reckless individualist, the capitalist aggressor. And while the mood of these histories is understandably penitential, they differ as to when the Western fall from grace took place. For some historians it was the Renaissance and the scientific revolutions of the sixteenth and seventeenth centuries that doomed the earth to be treated by the West as a machine that would never break, however hard it was used and abused. For Lynn White, Jr., it was the invention, in the seventh century A.D., of a fixed-harnessed plow that sealed the earth’s fate. The ‘knife’ of the new implement ‘attacked the land’; farming became ecological war. ‘Formerly man had been part of nature; now he was the exploiter of nature.’” Ibid. 13

\textsuperscript{141} My emphasis.

\textsuperscript{142} Schama, Landscape and Memory. 14. My emphasis added in italics.
In Part Two, entitled *Water*, Schama shows, as do hydrologists Malin Falkenmark and Johan Rockström,143 and Patrick McCully,144 that water and waterways do more than provide cradles for human civilizations. That is an important enough role in itself, and the subject of the natural and human sciences. Particularly interesting in this context, however, is the use that, like Schama, Falkenmark and Rockström make of the term ‘landscape’. They write that

“Hydrologically, landscapes can be divided into geographical units in which all precipitation that falls within each unit flows downstream through the same outlet (for example, a river mouth). Large hydrological units are called drainage basins; smaller units are often defined as catchments.”145

The Murray-Darling Basin is a drainage basin set within a landscape that both has its own ecological integrity and importance. Schama’s deep point is that this landscape and these waterways are the source of

“a rich deposit of myths, memories and obsessions”146

by which their human inhabitants, both indigenous and later arrivals have sought to make sense of life in it. That is surely a good starting point from which to do theology.

The Murray: A River and its People

Like Lynn White and Simon Schama, Paul Sinclair took an historical approach to the question of how environments, or landscapes, to use Schama’s term, and humans relate and affect each other. However, Sinclair chose a specific landscape, the Murray River, as his field of study. In *The Murray: A River and Its People*147 Sinclair explored the idea that the Australia’s greatest river consists in more than simply its geology, hydrology and biology. Sinclair’s methodology was to paddle down a long stretch of the river, stopping for pre-arranged interviews along the way. If qualitative interviews are a valid form of gaining information for an

146 Schama, *Landscape and Memory.*, 14
historian this *modus operandi* can surely be applied to research in contextual theology.

Sinclair found in the thought of Aboriginal elder Pat Dodson the heart of his own thesis. They sound similar to Simon Schama:

“When Dodson talks of country, he implies that the land and water that he and his grandfather knew were more than the sum total of geological and ecological processes; *they are enclosed in webs of meaning created by his community.*”

Sinclair found in the work of two artists, John Davis and the nineteenth century German Ludwig Becker,

“…inter-connections between interior and external *landscapes*; between individual experience and *memory*, and public narratives of progress.”

Sinclair’s observed the Murray’s anthropogenic ecological stress thus:

“Today the Murray is at least two rivers at any one moment. The first river contains native species of flora and fauna that have adapted over thousands of years to cycles of drought and plenty; the second is the modern regulated river created early in the twentieth century, whose primary purpose is to conserve, and then convey, water controlled for use in irrigation and urban centres. These two rivers simultaneously share the same bed, and both are worn out.”

According to Sinclair the Murray cannot be saved; it has already been changed irrevocably. We must live with what is left. However, Sinclair is concerned that

“What is missing from many popular representations of the Murray’s degradation is an awareness of how the cultural and economic forces that justified the Murray’s transformation continue to influence management and popular attitudes….It continues to be easy to find people who still believe water left in the river is wasted water – even though there is now scientific evidence that flora, fauna and floodplains all require more water than they are currently allocated if they are to survive.”

He opposed this utilitarian, reductionist view:

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148 Ibid., 23, My emphasis in italics.
149 Ibid., 10, My emphasis in italics.
150 Ibid., 19
151 Ibid., 21
152 Ibid., 20-21
“This book has been written in the hope that it will assist settler Australians to reflect on the meaning of what has been lost from the Murray, and remind them that within their culture there are stories whose telling will help them learn to live sustainably with the Murray.”

Therefore Sinclair sought alternatives to the overarching, reductionist scientific paradigm. Like McGrath and others he tried to incorporate the contribution of science, while not being dominated by its worldview. A central concern of his

“is the way in which [emotional attachments to the land] have been made and broken, or absorbed within grander and more universal narratives of progress. The conceptual tools needed to begin thinking oneself into the Murray come from a number of sources, the most significant of which are environmental historiography, creative literature, scientific research and oral testimony.”

Although Sinclair’s discipline is history his methodology and line of argument have much in common with my thesis.

The Default Country: A Lexical Cartography of Twentieth-Century Australia

In The Default Country lexicographer Jay Mary Arthur, through a “lexical cartography of twentieth century Australia” tested the notion that European Australians retain the mental notion of a ‘default country’, similar to England, even as we live in this physical country:

“Embedded in Australian English are the descriptive norms of another entirely different country – a place ‘narrow, hilly and green, our ‘default country’. The nation’s common term for what is a normal Australian season is thus a word for an exceptional climatic event: ‘drought’.”

“It is in water that the colonists’ double vision is most clear” she writes tellingly, giving many examples that expose the bizarre disparity between Euraustralian expectation and reality. On his 1844-6 expedition in search of an inland sea, for example, Charles Sturt dragged a whaleboat overland, repeatedly painting it. Arthur juxtaposed the word ‘river’, which

153 Ibid., 22
154 Ibid., 23
156 Ibid., 18-24
as late as 1997 the *Australian Concise Oxford Dictionary* defined as ‘a copious stream of water flowing to the sea or a lake etc.’, with various descriptions of Australian rivers, ending in swamps and mostly dry lakes. Her argument, that judging by the way we describe Australian rivers European Australians think they are defective, is compelling:

“The response of the Cooper and the Murray to the nature of Australian hydrology and geography means that their behaviour as ‘rivers’ is understood as defective. The Darling, which often stops flowing, is described as a ‘fly by night’, ‘here today and gone tomorrow’ river – an ‘unreliable’ watercourse. The rivers of the Pilliga scrub are called ‘upside down rivers – the flow of water rarely being above ground’; an inverted watercourse.”

Arthur quoted Benedict Anderson\(^\text{158}\) to support her argument that many European settlers think that

“‘A typical Australian river, with its intermittent flow, ought to be made into a ‘proper’ permanently flowing river.’\(^\text{159}\)

Dry or ephemeral lakes, of which there are a number in the Murray-Darling Basin, cause similar consternation for European Australians. Helpfully, Arthur offered alternative definitions of Australian rivers and lakes as, respectively:

“a watercourse with a permanent or intermittent surface or underground water flow, often with great variability of volume and surface area; sometimes predominantly or seasonally dry,”

and

“a defined area of land with permanently or intermittently holds a variable quantity of water, either fresh or salt.”\(^\text{160}\)

Arthur noted that the control of Australia’s hydrological system, therefore, was a high priority for the Euraustralian colonists:

“The story of Australia’s survival as a nation in an often forbidding land is largely one of attempts to conserve our precious water supply...Australia has worked to solve the water problem with a network of 250 major dams throughout the country...However, these dams have been able to trap only about seven per cent of the

\(^{157}\) Ibid. 20


\(^{159}\) Arthur, *The Default Country: A Lexical Cartography of Twentieth-Century Australia*. 20

\(^{160}\) Ibid. 22
nation’s rainfall. Millions of gallons rush wastefully out to the sea every year.”\textsuperscript{161}

A dammed river becomes “regular”:

“The decision to build Keepit Dam was made essentially on the simple argument that regulation of our rivers is a good thing.”\textsuperscript{162}

Water in its unregulated form, on the other hand, is “unregulated” or “free-flowing”.\textsuperscript{163}

The Euraustralian perception that Australian hydrology is irregular, led to Australian vocabularies both of non-conformity; such as the terms “banker” and “chain of ponds”, and the famous line

“where the creeks run dry or ten feet high and there’s either drought or plenty”,\textsuperscript{164}

and of control. Water in the form of rivers is said to be “harnessed”:

“The Murray is docile and the reins are tightening...[its] brumby mate, the Darling, is being ‘broke in’ to run in double harness [with] the colt of the Snowy River to make a hard-working team never to run away again.”\textsuperscript{165}

Water is thus controlled and used to for the purposes of the colonisers who also use the vocabulary of irrigation.

“In the colonial control of indigenous space, water becomes an element over which colonists have rights to order, allocate, license, charge.”\textsuperscript{166}

Through this vocabulary of control,

“water is represented as no longer independent and indigenous, unpredictable and wasteful, but as restructured as part of the colonial ‘Australia’...‘Taming’ removes the threat of the anarchy of the indigenous world – ‘flooding’ – and ‘opens’ the country to development, to change, and to the future. It is only when the

\textsuperscript{161} The Reader’s Digest Complete Atlas of Australia Including Papua New Guinea, (Sydney: The Reader’s Digest, 1968). 129
\textsuperscript{162} Anderson, The History of Irrigation in the Bundaberg Area. 123
\textsuperscript{163} The Sydney Morning Herald, 13 February 1999 1999. p.4/3
\textsuperscript{164} The Overlanders, Verse 3
\textsuperscript{166} Arthur, The Default Country: A Lexical Cartography of Twentieth-Century Australia. 119
country, the land and the water, is ‘tame’ that fruitful and rational action is possible.”

JM Arthur has expertly used the tool of language to expose the colonising culture’s motives, fear and the desire to control their new environment and make it do their will. As she has demonstrated, waterways played a vital role in their strategy of control. In coming chapters, I shall read ecotheologically the roots and fruits of these attitudes.

**On Ecotheological Christian Anthropology & Models for relating to Creation**

J. M. Arthur has used language to reveal how European Australians relate to creation in Australia. How humans relate to creation is affected vitally by our sense of identity. Alister McGrath has argued that one of the most important perspectives Christians bring to the study and care of nature concerns the place of humanity. Human form our identity in relation to who and what is around us. We act out that perceived identity, consequently affecting our contexts.

In ecological anthropology the many questions asked in the broader discipline of anthropology

“are now raised within an attempt to understand the place of humanity within the larger earth community.”

Christian ecological anthropology asks the question “Who are we?” from a theological and ecological, hence ecotheological perspective. Theology has begun to write more frequently on ecological anthropology. Sallie McFague, for example, has written a chapter on the issue in a recent publication. Ernst Conradie, however, has addressed this issue comprehensively. Conradie argued that in Christian ecological theologies

“the polemical thrust of this emphasis of the place of humanity within the earth community…

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167 Ibid. 120
168 McGrath, *The Re-Enchantment of Nature*. 15
169 Conradie, *An Ecological Christian Anthropology: At Home on Earth?* 4
171 Conradie, *An Ecological Christian Anthropology: At Home on Earth?*
…responds to a widespread cultural sense of the alienation of humanity from nature which is also evident within the Christian tradition…

…incites a critique against the anthropocentrism which often characterises Christian discourse on humanity. …

…resists the tendency in Christian discourse to legitimise the domination in the name of difference of the human species over the rest of the earth community…

… [and resists] various forms of anthropological dualism.”¹⁷²

Like Larry Rasmussen, Conradie regards Creation as a “vast, public household” described by the English words ‘economics, ‘ecumenics’ and ‘ecology’, all of which derive from the Greek οικος, meaning ‘house’.¹⁷³ Conradie’s four major chapters each address anthropological themes introduced in Genesis 1, “that is:

- Human beings as ‘created’ by God,
- Human beings as created in the image of God
- The vocation of human beings to have ‘dominion’ over the earth, and
- The need for an ecologically informed lifestyle and spirituality.”¹⁷⁴

He stresses that while these themes are not traditional in Christian anthropologies they are pertinent for an ecological anthropology.¹⁷⁵

Another approach to the question of human identity vis-à-vis God and Creation is to list the main biblical models that pertain to the issue of human identity, seen from a Christian perspective in relation to ecology. Amongst a number of others the Swedish ecotheologian Bo Brander has reviewed a number of such models,¹⁷⁶ but it is worth taking them one by one here.

Douglas John Hall has argued that the predominant biblical model is that of the steward.¹⁷⁷ This was the model by which most participants in my field study, the subject of Chapter 7, described their relationship with creation. A

¹⁷² Ibid. 5
¹⁷³ Ibid. 7
¹⁷⁴ Ibid. 14
¹⁷⁵ Ibid. 14, Footnote 67
¹⁷⁶ Bo Brander, Människan Och Den Ekologiska Väven: Om Människan Som Mikrokosmos Och Som Skapelsens Förvaltare (Stockholm: Artos bokförlag, 2002). (The Human and the Ecological Web: On the Human as Microcosm and Creation’s Steward)
major problem with the stewardship model, however, is that it leaves the biblical, medieval and Enlightenment hierarchy of human over nature unaltered, allowing humans the potential to retain too much power and authority. So sceptical have some theologians become of humans’ ability to withstand our own anthropocentrism, however, that other models have been developed. As mentioned Lynn White was among the first to point to the need for another model, advocating that it be from within the Christian tradition.

St Francis of Assisi, widely regarded as the patron saint of the environment, lived out what might be described as a “commonwealth of all being”, drawing from his conviction that the human is to regard herself as being in family, not hierarchical, relationship with the rest of creation. The American Catholic scholar Matthew Fox has sharpened this concept to the point where he has perhaps been in more trouble with his church authorities than even St Francis was! This model was, predictably, given short shrift by most focus groups and participants in my field study, reported in Chapter 7. Regardless of which worldview they adopt humans have great power in and over creation. The field study participants knew the ecological devastation humans can cause; equally, they realized that it is neither practicable nor desirable to expect humans to treat themselves and their loved ones as no more important than “animals, vegetables or minerals”. The Swedish description of humans as “skapelsens krona”, “the crown of creation”, is not self-adulation but a fact of life for these people on the land.

The motif of humans’ relationship with the land is particularly prominent in the Old Testament. Of many who have written on it Ron Elsdon has correlated the state of Israel’s ecology with Israel’s falling away from the Old Covenant: from a land “flowing with milk and honey” to one in which

“Thorns will overrun her citadels, nettles and brambles her

178 St Francis’ famous Canticle to the Sun expresses this well.

179 Walter Brueggemann’s The Land is perhaps the best-known treatment in recent years. Geoffrey Lilburne has written in similar vein of the Australian context. William Dumbrell has contributed with Covenant and Creation: A Theology of the Old Testament Covenants.

180 Elsdon, Greenhouse Theology: Biblical Perspectives on Caring for Creation.

181 Exodus 3:8 is the first of many references.
strongholds. She will become a haunt for jackals, a home for owls.”

The relationship of humans with non-human creation can thus helpfully be understood in terms of Covenant, and the second great Commandment to love one’s neighbour as oneself brings that perspective straight into the New Covenant.

“Loving nature” can also be described as a model for relating to creation within the ambit of the stewardship model. This model can be expressed in terms of the second great love commandment, to love one’s neighbour as oneself, nature being the neighbour. While some participants in my field study described anthropocentric attitudes, prioritizing care for themselves, their families and humans over all else, for others being stewards of creation definitely meant loving creation. A number of participants expressed this love, in both impassioned and informed terms.

It was these followers of the European “sky god” who came closest in their relationship with the landscape to the Aborigines who preceded them as inhabitants of the Murray-Darling Basin. Indeed at least one participant commented a little resentfully that while people speak of the Aborigines’ close relationship to the land, many of European settlers love and feel close to it too. However, the Aboriginal model of humans as Custodians whose primary purpose in life is to care for Country emerged from a spirituality radically different from those who supplanted them. Aboriginal spirituality emerges from the earth, European spirituality from the sky. While Aborigines may or may not have a concept of a God set “over” Creation and other spirit beings, for Aborigines, even Aboriginal Christians, the spirit world seems far more integrated with this world than for Euraustralians, used as we are to thinking in dualities.

Yet are these differences in worldview and spirituality as fundamental as...

182 Isaiah 34:12-4
183 Nash, Loving Nature.
many theologians believe? The children of Abraham are also called to “care for country”. N.T. Wright has argued that the purpose of humans is not to be saved from earth but to work with God towards the restoration of earth. Wright argues that the resurrection of the Son of God, as the first instance of the new heavens and new earth, is the motivation for Christians to work for earth’s restoration, confident that whatever we do now will be used in God’s restored, transformed creation.\(^{185}\)

Thinking eschatologically, there is much to be gained from a consideration of the biblical theme of ‘the river of life’. Michael Wilcock calls this motif “‘a tie-rod’, running from end to end of the sixty-six books [of the Bible]”, and argues that the third revelation of heaven in Revelation 21:9 – 22:19 is:

> “a summary of the biblical doctrine of creation...It concerns what Christ called ‘the new world’ (Mt. 19:28), literally ‘the new genesis’. The first chapter of the Bible describes how God made the world; the last one shows how He will remake it. The creation as it was, and as it will be, is an immense organism alive with the life of God, for the stream flows ‘from the throne of God and of the Lamb’, and hence ‘through the middle of the street of the city’.”\(^{186}\)

I shall build upon this motif in Chapter 9.

Orthodox theology, represented by Paulos Gregorios, speaks in terms of realized eschatology of the human as a microcosm of all creation. Another Orthodox priest, Metropolitan John Zizioulas, has suggested that humans are priests in and of creation, offering creation back to God. At the Eucharist we do this by bearing bread and wine, representing the fruit of creation, forward to the altar. This model also allows humans a central, but not anthropocentric place in creation.\(^{187}\) This, Zizioulas wrote, is:

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\(^{187}\) I used this model as the basis of a prayer I was asked to give by The Hon. Al Gore in September, 2007 at the beginning of a day in which he trained some 160 people to deliver his Climate Change slide show that formed the basis of the Oscar award-winning film “An Inconvenient Truth”. The sense of being representative, both of creation and of the diverse communities from which trainees had come from across Australia and abroad was much appreciated.
“...an idea more or less corresponding to that of love in its deepest sense. In all this the underlying assumption is that there exists an interdependence between man and nature, and that the human being is not fulfilled until it becomes the anakephalaiosis, the summing up of nature. Thus man and nature do not stand in opposition to each other, in antagonism, but in positive relatedness. This cannot be achieved in any other way except through liturgical action...”

Zizioulis has combined these models in an article on orthodoxy and ecology. Having critiqued western theology for the same reasons as did Lynn White, Zizioulas listed “the basic theological dimensions which relate to our ecological task”. These included:

“...careful handling [which] was entrusted by God to human beings, as distinct from all other beings and from angels. According to Patristic theology man was created, material and spirit, to be a microcosm of creation...As priests of creation we have the unique mission and great responsibility of uniting God and the material world. Our task is not simply to preserve creation but to purify it and elevate it to the level of divine existence. This act of elevation, the referring of creation to its creator, is the essence of our priesthood...”

Looking back and forward

In this chapter’s Introduction I suggested that several “systems” of human endeavour and thought are tributary to theology in this ecotheological study. In a multi-disciplinary thesis such as this it is no longer possible to read everything of relevance to the research topic. During the period of writing many new works of value have been published in each of the “catchment systems” relevant to the topic. Instead, this literature review has sketched the multi-system catchment of literature, outlining the various tributaries that flow into ecotheology, which is the main area of focus, and exploring in more detail several works from other areas that have provided particularly helpful insights and approaches.

I have devoted much space to consideration of ecotheology’s relationship with theology and with the natural and human sciences necessitating extensive discussion of methodology. There is a risk that this emphasis on

188 John Zizioulas, "Preserving God's Creation (Part 1)," Theology in Green, no. 5 (1993),


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science and method will result in a theology affected by the reductionism of these disciplines. Alister McGrath has written of this danger but argues that nature can and should be read on different levels:

“It can be read at one level as a material entity, whose origins and behaviour can be accounted for by the laws of physics. But this most emphatically does not rule out the discernment of a deeper level.”\(^{190}\)

McGrath considers that perhaps the most important perspective Christians can bring to the study and care of nature

“concerns the place of humanity, and above all its capacity to understand nature and respond to its beauty.”\(^{191}\)

He argues that the beauty of nature, that quality which science cannot measure or define but which so many scientists nonetheless recognize in what they study, reflects the glory of God and draws people to God:

“The doctrine of creation invites us to value both nature and the respectful investigation of nature as a means of appreciating the splendour of the creation and glimpsing the still greater splendour of its creator. It affirms the human sense of wonder at the glories of the natural world – and hence the longing to study them more deeply – while investing them with a transcendent significance.”\(^{192}\)

It is with that perspective that I proceed to the next chapter, a short scientific reading of the Murray-Darling Basin.

\(^{190}\) McGrath, *The Re-Enchantment of Nature.*, 15  
\(^{191}\) Ibid., Italics mine.  
\(^{192}\) Ibid., 21 My emphasis.
Chapter 3
The Murray-Darling Basin: Rivers of the Water of Life

Introduction
Having become acquainted with the various systems of literature which impinge upon this thesis, the purpose of this chapter is to establish its geological, geographical, hydrological and ecological context. This chapter constitutes a short scientific report on the Basin from the points of view of these disciplines.

A General Description of the Murray-Darling Basin
The Murray-Darling Basin is the name given to the catchment areas of the Murray and Darling Rivers and their many tributaries. Located in the south-east of Australia the Basin covers 1,061,469 square kilometers, comprises 14% of Australia’s total area, including three quarters of New South Wales and half of Victoria, and extends 1250km east-west and 1365km north-south, from north of Roma in Queensland to Goolwa in South Australia. The Great Dividing Range forms a clear limit to the Basin in the east and south. In the north, west and south-west the boundaries are much less distinct. In particular, both Wimmera in the south-west and the Bulloo Basin in the north-west are areas of internal drainage. Elsewhere, areas of low to medium altitude, including the Mount Lofty ranges in the south-west, the Grey and Barrier Ranges in the west and the Chesterton and Warrego Ranges in the north also mark the Basin’s limits.¹

Most of the Basin consists of extensive plains and low undulating areas, largely less than 200 metres above sea level. Of greatest extent are the Darling Plain in the north, drained by the Darling River and its tributaries, and the Riverine Plain in the south, drained by the Murray and

¹ "Murray-Darling Basin Commission Website,” www.mdbc.gov.au Basin Statistics + About the Basin. As of 15 December 2008 the Murray-Darling Basin Commission was subsumed in the Murray-Darling Basin Authority. By January 2009 the MDBC website was termed a “Deactivated Archive Website” Though still operational visitors were referred to the new MDBA website.
Murrumbidgee Rivers and their tributaries. A great variety of climatic conditions and natural environments occur across the vast extent of the MDB. There are rainforests in the cool, humid eastern uplands, temperate mallee country in the south-east, sub-tropical areas in the north-east, and the far western plains are classified as dry semi-arid and arid lands. Many of these natural resources are of high environmental value. For example, the Basin’s more than 18,500 wetlands perform essential hydrological, biological and chemical functions which support the productivity and health of the river systems. A number of these wetlands, including the well-known Macquarie Marshes, are recognized under the Convention on Wetlands of International Importance (also known as the Ramsar Convention).

Size, shape and topography, geology and derived soils, and climate are the primary variables that determine the character of a river basin. In terms of these primary variables the Basin is an unusual river system. The Great Dividing Range, in which the Murray, Murrumbidgee and Darling Rivers all rise, is not a high mountain range. Consequently the rivers, particularly the Darling, flow over very shallow gradients for much of their courses. Although the Basin constitutes one of the largest catchments in the world it is also one of the driest. By comparison, the Amazon River’s catchment area is the best in the world for harvesting rain. Every square kilometre of the Amazon River’s catchment averages 75 times more water than the Murray-Darling Basin. The average annual flow of the Murray-Darling would pass through the Amazon in less than one day. Moving westward rainfall decreases and evaporation rates rise due to increasing temperature and solar radiation. Therefore much of the basin is arid or semi-arid, with only a narrow humid region along the southern and eastern margins. The Basin’s climate is also characterized by high variability in rainfall as measured from year to year. This variability increases from south-east to north-west, and is reflected in the basin’s history of floods and droughts. The high variability of rainfall results from climatic variations.

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3 Ibid., 3
Two ironies underlie the story of this interaction between the Basin’s landscape and its modern inhabitants. Firstly, even today Australians may refer to Great Britain as “the old country”, a term which other Europeans, for example Swedes, also apply to their own lands. Australia, on the other hand, is seen as a second ”new world”, settled by Europeans after the Americas, a tabula rasa upon new beginnings could be written, and to which the law of Terra nullius was applied. The terms ”old country” and ”new world” refer, of course to the relative ages of human societies, but geologically and even biologically the ages are reversed. Whereas most of Europe emerged from the last Ice Age only a matter of thousands of years ago the Ice Ages affected the Australian Continent relatively little. And whereas human colonisation of Europe followed the receding glaciers after the last Great Ice Age it is thought that by locking up much of the world’s water in ice, and consequently lowering the world’s sea levels, the Ice Age facilitated island-hopping access to Australia in several waves by people we know generically as aboriginals. That is, Australia was colonised by humans before the end of the last ice age.

The second irony of Australia’s great age is that the Australian continent, though called by Europeans a 'New World', 'New Holland', 'New South Wales', etc., consists of some of the planet’s oldest geological formations. It is estimated that some of the rock underlying the Murray-Darling Basin is over 350 million years old. The floor of the present Murray Basin is thought to have been the former seabed of a primeval ocean that retreated well over 100 million years ago as the ancient super-continent of Gondwana slowly split up. Australia finally followed South America, Africa, New Zealand and India in separating from Antarctica between 45 and 60 million

4 The first line of the Swedish national anthem, “Du gamla, du fria…” means “You old, you free…”, yet permanent human habitation of Scandinavia became possible only after the end of the last Ice Age. The Swedish state colonised the northern reaches of their country, populated by indigenous people called Saami, or Lapps, little earlier than the British colonised Australia.

5 Young, ed., Rivers as Ecological Systems: The Murray-Darling Basin., 135. Note that this figure is comparatively young. Some parts of the Australian land mass have an estimated age of 3 billion years.

years ago. This schism had the effect of raising the margins of the Australian continent, forming the Great Dividing Range. Consequently, the continent’s centre sank, creating inward-draining basins. The Canobolas Divide was created, separating the now sunken Murray Basin from the more northerly Eromanga Basin, a structure approximating in area today’s Great Artesian Basin. During this period of separation volcanism and small tectonic movements altered the topography of the continent, so that many rivers changed course. From having flowed northwards off the Victoria Divide they began to flow in a more westerly direction, as they do today. Volcanism in the continent’s south-east created the basalt rocks that characterize some of the Murray-Darling’s upper catchments, such as the Namoi. Over about 20 million years rivers pouring off the new highlands filled the Basin with gravel, sand and clay until it became almost flat.

Between 40 – 30 million years ago, as the Basin sank, the sea invaded its south-east as far as its middle region. Coal deposits were formed around the eastern margins, and during high sea levels around 24 – 16 million years ago the early Murray, Murrumbidgee and Lachlan Rivers converged into a single delta in the Murravian Gulf. Though southern Australia’s climate has fluctuated over million of years the trend has been for it to become drier. The Murravian Gulf retreated southwards, leaving behind a series of abandoned shorelines still visible on satellite images of the Mallee. The rivers followed the retreating sea until around three million years ago, when a geological formation known as the Pinnaroo Block in the Basin’s south-west lifted, damming the outlets of the early Murray, Murrumbidgee, Lachlan and Darling Rivers, and forming the huge freshwater Lake Bungunnia between Swan Reach and present-day Menindee Lakes.

The cycle of Ice Ages, each lasting hundreds of thousands of years, began about two million years ago. It is thought that the world is currently in a warm phase between ice ages. Unlike Europe and North America Australia has not been covered with ice for most of this period. Instead, its climate has

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8 Young, ed., Rivers as Ecological Systems: The Murray-Darling Basin. 135
9 Sinclair, The Murray: A River and Its People. 28-9
10 Young, ed., Rivers as Ecological Systems: The Murray-Darling Basin. 135-6
steadily become drier and more seasonal. The rivers of the Murray-Darling Basin continued to flow, albeit in reduced size during the summers. When the southern margin of the lake was breached about 700,000 years ago it began to drain, forming the complex outlet of the present Murray River.

Southern Australia’s rivers began to take on their modern form about 50,000 years ago. After a short period of great aridity they flowed once more, smaller than their ancestors but larger than at present, from the Great Dividing Range and onto the plain of the Murray Basin. They are influenced by climate, and also by tectonic movement. Though these movements have been relatively minor the low relief of the Basin means that even small movements have had large effects upon the courses of low-gradient rivers. Of a number of geological faults that have influenced the course of the Murray River, the last and best known – the Cadell Fault – temporarily blocked the river, and created the wide floodplain on which the Barmah-Millewa river red gum forest now grows.

From 25,000 years ago the climate became colder and drier. There is evidence of extensive wind erosion and drying from this time, leading to concentration of salts and consequent salination of groundwater and soils, and of aboriginals who had already settled in the Murray-Darling Basin increasingly modifying their environment by use of fire. By 15,000 years ago deglaciation had begun, melting ice sheets were raising sea levels, and by 10,000 years ago the climate was not dissimilar to the present day.

**Hydrology**

The science of hydrology is a good way of understanding a river basin as an ecosystem or series of ecosystems.\(^\text{11}\) Hydrology describes the distribution of water in a system, where it is – whether in the atmosphere, on the surface or in the ground – and where it goes. In order to understand and manage large river systems it is important to consider the full range of riverine environments, viz. in the river itself (instream), along its banks (riparian) and on the floodplain. Floodplain environments are influenced by

\(^{11}\) Sinclair, *The Murray: A River and Its People.*, 25-32
underground bodies of water (aquifers). Therefore, groundwater hydrology is also important.

The unusual topography and climate of the Murray-Darling Basin have been the main factors determining its hydrology, although human effects have become increasingly important. The Basin might be described as a very large, shallow drainage basin with only one exit flowing out of Lake Alexandrina in South Australia. It is an unusually complex biophysical system, in which changing patterns of land use have impacts on groundwater that may be felt hundreds, even thousands of kilometres downstream.12 As shall become evident when salinity is considered, groundwater hydrology is very important in the context of the Basin. Hydrology can be considered to be the central driving force in river systems, and is the one most susceptible to change by human intervention.

Since European settlement the Basin’s hydrology has been strongly influenced by water introduced from the Snowy Mountains Scheme, the damming of its rivers and streams, the diversion of water from those watercourses into irrigation, and by land-clearing. Together with land use patterns the flow regime of a river system determines the quantities of sediment and nutrients transported through it. Land use and land management practices determine the levels of nutrients in the soil, the susceptibility of soils to wind and water erosion and the likelihood of eroded soil reaching the river system.13 Dryland regions of the Basin are the primary source for nutrient and sediment export. Unnatural movement of nutrients and sediments across the landscape typically results in the depletion of these resources in upper and mid-catchment areas, and their subsequent concentration in ephemeral channels and waterways. Compensation of lost nutrient and sediment is economically inefficient and continues to exacerbate impacts in lower catchment regions.14

Flow regime and sediment load together determine channel form, size and shape, and the shape of the riverbed. The deposition of water-borne

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14 www.mdbc.gov.au Environmental Issues: Nutrient and Sediment Export
sediments builds the floodplain. At smaller scales, flows and channel forms determine the flow hydraulics. These hydrologic, hydraulic and geomorphic variables are considered to be secondary attributes of the system. They are important because they affect the water-borne transport of sediment and nutrients which itself profoundly affects the processes of a riverine ecosystem. That is, this transport affects how energy (mainly in the form of organic carbon) flows through the system; the nature of interactions between organisms through the food web; the ecology and life strategies of all those organisms; and ultimately the biodiversity of the river system itself.

These biological and ecological outcomes of the primary and secondary variables are denoted the tertiary attributes of the system. They include the diversity and extent of habitats, plants and animals, both instream and on the floodplain. River health is usually assessed in terms of these tertiary attributes. In order to manage or predict future river health it is necessary to understand how such tertiary attributes are determined by the secondary and primary variables in the river system. This is becoming acutely important because it is generally the secondary variables (land use, flow regimes and channel forms) that are most directly affected by resource management.

In summary, although other factors – not least the interactions between organisms themselves – are also important, it is the amounts and timing of water flows which largely determine how riverine ecosystems are structured and the way they function. Land use and land management practices are important determinants of instream water quality (including nutrient levels and turbidity) and therefore strongly influence river ecology and health. Identifying movement trends of nutrients and sediments, and establishing long-term solutions which stabilise movement resulting from human activities is important both for the environment and for many broad acre agricultural activities. Hydrological management has had a markedly deleterious effect upon the ecology of many habitats within the Basin. This has resulted in some species becoming extinct and others becoming endangered. Nevertheless, hydrological management offers one of the best means for river rehabilitation. An example of this is the agreement to
increase to 21% by 2012 the amount of water flowing down the Snowy River compared to the volume prior to its damming and diversion is seen as a measure that will help to restore the ecology of that river. To a large degree the ecological basis of this thesis is formed by a consideration of the hydrology of the Murray-Darling Basin.

**The Basin’s Waterways before European Settlement**

To assess how European settlement has affected the Basin’s waterways we must first be able to say with some confidence what they were like before the colonisers came. The task of documenting the effects of colonisation on a landscape belongs to ecological history, a discipline liable to diverse interpretations. Bruce Davidson, Eric Rolls and Tim Flannery and Peter Andrews are amongst those who have envisaged pre-European Australian ecology. Andrews has envisaged specifically how ancient Australian waterways worked. Although Andrews’ views concerning the character of the ancient Australian waterways and how Australia’s ecologically degraded landscape can be saved are unorthodox, not having yet been sufficiently subjected to peer and scientific review, they have attracted much public exposure. Whether or not they misunderstand the hydrology of pre-European Australia or overstate the ecological damage caused by European colonization, they reinforce the understanding that the

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15 The Federal, Victorian and NSW state governments agreed in October 2000 to release environmental flows of 21% mean annual natural flow (MANF) in the first ten years after corporatisation of the Snowy Mountains Hydro-Electric Authority. A further environmental flow release of 7% MANF will be reliant on cost savings by irrigators west of the great-dividing range. The environmental flow releases will be delivered to the Snowy River downstream of Jindabyne Dam to improve the physical and ecological integrity of the river. The first environmental flow was released from the Mowamba Weir on 28 August 2002. Snowy River Benchmarking and Environmental Flow Response Monitoring Project. Summary Progress Report on Available Data From 1999-2001, for Environment Australia. T Rose and R Bevitt The Department of Infrastructure Planning and Natural Resources 2003


20 Through the sponsorship of business leaders such as Gerry Harvey, prominent politicians such as former deputy Prime Minister John Anderson, and on national television
Australian landscape was highly different from the European and British landscapes from where the bulk of the settlers came, and are part of the process of Euraustralian society getting to know the landscape in which we live. With this caution I turn now to Andrews’ work on the hydrology of the pre-European Australian plains.

Andrews has argued that because ancient Australia’s weather was warm to hot, fluctuated widely, but was mostly dry, and because inland Australia was very flat the method of watering the land and carrying off excess salt to the sea that works in Europe, that is, a network of well-defined waterways, does not work here. The mechanism that Andrews suggests for water flow and control of salinity in ancient Australia is effectively an extension of what is seen even today during flooding. The lateral flow of floods is an important mechanism for providing nutrient and moisture for soil distant from riverine areas. Andrews proposed a system analogous to a gentle, permanent flow of water over much of the landscape, from the waterways and across the floodplains:

“Inground water is what kept, and keeps, the Australian landscape alive. It’s the ultimate key to our landscape’s survival. Even though the continent is so dry, clearly there was a natural system that somehow kept the Australian landscape replenished with inground water. It was a system that, in the Australian climate, had to work with extreme precision, and for that reason alone it deserves to be understood… In the broader floodplains, water entered the ground through sandy, gravelly ‘recharge areas’ and was stored in the layer of sand and clay that underlies much of the continent. In the floodplains themselves, water travelled in creeks and rivers that…were elevated above the surrounding sediment…Rivers and creeks did flow across the floodplains, but they weren’t rivers and creeks as we know them. They hadn’t gouged out a channel. They flowed over the surface of the plain, not through a channel, which meant that, whenever there was enough water, they’d spread across the plains on both sides, which…were lower than they were, and the water would soak into the ground.”

Haki Tane, a former chief planner for the Murray-Darling system, has described Andrews’ theory as an

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21 Andrews, Back from the Brink: How Australia’s Landscape Can Be Saved. 47
“example of step-diffusion broadacre hydroponics”\textsuperscript{22}

Andrews elaborated:

“Water moved down from the higher country through a series of floodplain steps, diffusing through each floodplain and filling the ground with nutrient-laden water. The further the water moved down the richer in nutrients it became. The plants grew and flourished in this slowly moving inground water, just as they would in a hydroponic system.”\textsuperscript{23}

Andrews explained his theory that the creeks and rivers of ancient Australia flowed higher than and not lower than the surrounding floodplains thus:

“…it was the streams that created the floodplains. Water laid down the sediment that the floodplains are made of…since water always moves downhill, it couldn’t have laid down a floodplain unless it was running through the highest part of the floodplain.”\textsuperscript{24}

He referred to Henry Lawson’s poem likening the Paroo River to “an old bridle-track”. As this term was used in England a bridlepath or track was usually a sandy trail winding through the countryside on the higher ground, a good description of what Andrews believes old Australian watercourses looked like.\textsuperscript{25} Since much of this flow occurred underground, through sand and clay, evaporation was minimized.

Andrews also argued that both waterflow and salinity was controlled and guided by the vegetation. He noted the reports of early European explorers Sturt, Oxley and Mitchell of extensive marshes across the Murray-Darling Basin and believes that the Macquarie Marshes are a remnant of those great, ancient marshes. Mitchell in particular

“was so impressed by the floodplain system and the way it sustained the dry inland that he described it as ‘providential’” and believed that it “prevented the land becoming a desert.”\textsuperscript{26}

Mitchell described “chains of ponds” that he saw everywhere, and that never dried out, even during the dry season. He also identified the distinctive nature of Australian rivers:

\textsuperscript{22} Ibid., 48
\textsuperscript{23} Ibid., 49
\textsuperscript{24} Ibid., 50
\textsuperscript{25} Ibid., 53
\textsuperscript{26} Ibid., 51-2
“The fluviatile process seemed reversed here, the tendency of this river [the Lachlan] being not to carry surface waters off, but rather to spread over land where none could otherwise be found, those brought from a great distance.”

Further, Andrews noted reports of these explorers of places where water was very saline while in other places it was not. For example, Sturt’s journal of his discovery of the Darling River notes with disappointment its great salinity. Andrews believes that marshes and other vegetation helped to control salinity not, as is currently believed, by keeping the watertable down, but by guiding the flow of surface and sub-surface water. This water, which originated as rainfall, was therefore less saline than underlying water. Since the more saline water is the denser it becomes, it will not tend to rise to the surface of its own accord. Andrews argued that this layer of water flowing slowly close to the surface formed what he calls a “lens” that prevented the layer of saline water beneath from reaching the surface.

So, Peter Andrews reported that according to Sir Thomas Mitchell, New South Wales’ most influential Surveyor-General and one of its greatest explorers, ancient Australia had a providential, and highly unusual system of waterways that dealt very effectively with its variable, dry climate and high in ground salinity. While it was still being explored, and very few Euraustralians had settled in the Basin, its unique, ecology had been understood and appreciated by the very person best placed to see to it that that ecology was not harmed. Whether or not Andrews is correct about Mitchell and how the Basin’s hydrology worked prior to European settlement its ecological degradation had already begun, and has continued to this day. I shall now address the questions of how and why this occurred.

Salinity

Under the surface soils of the floodplain, layers of alluvial material deposited by rivers over millions of years provide porous “lenses” capable of holding water that sinks below the surface. When these lenses fill with

\[\text{27 Ibid. 51-2} \]
\[\text{29 Andrews, Back from the Brink: How Australia's Landscape Can Be Saved., Diagrams 1a & 1b, p.75} \]
\[\text{30 Young, ed., Rivers as Ecological Systems: The Murray-Darling Basin., 142, 144} \]
water they are known as “aquifers”. The Murray-Darling Basin has two such major groundwater resources: the Murray Groundwater Basin in the south and the Great Artesian Basin, covering almost a quarter of the continent, to the north. There is evidence that deeper aquifers, particularly in the south of the continent, may have filled six or seven times over the past 500,000 years, largely by the inflow of the sea as described previously, causing extensive salinisation of the riverine plains. Groundwater in the Murray Groundwater Basin tends to flow towards and discharge saline water into the Murray River or retain it under the floodplains of the River. Aquifers in this Basin tend to be thin and enclosed; only where the river cuts an aquifer does water flow into it. The Great Artesian Basin, on the other hand, is a source of potable water for much of inland Queensland, and parts of inland New South Wales, Northern Territory and South Australia.\(^{31}\)

Groundwater connects to the floodplain surface in various ways. Where it is forced up it may form saline lakes. It can be very important for sustaining floodplain vegetation. Water moves up and down in the soil by various mechanisms. Overly saline groundwater, however, causes conditions that are extremely stressful even for salt-tolerant trees such as black box.\(^{32}\)

Groundwater depths have changed dramatically since European settlement. In some places the clearing of deep-rooted native vegetation, irrigation and the building of weirs by European settlers has caused filling of aquifers to occur in just over 100 years, raising the water table and exacerbating salinisation and causing severe problems for ecological systems, agriculture and infrastructure. Elsewhere, exploitation and uncapped bores have lowered the watertable, leading to lack of available water. Weirs and floodplain irrigation channels also interfere with groundwater levels.

**Ecology**

The varied environments of the Basin encourage a diversity of flora and fauna far too great to be described comprehensively in this Thesis. Instead

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\(^{32}\) *Eucalyptus largiflorens*
of trying to be comprehensive I shall supplement general descriptions of the Basin’s ecology with references to some species of flora and fauna, their specific habitats, and how they are being affected by changes in the hydrology of the Basin, as examples of the Basin’s wildlife and the more general trends that have accompanied the Basin’s development.

It is estimated that at the time of European settlement the Murray-Darling Basin supported a range of animal species that included 85 mammals, 367 birds, 151 reptiles, 24 frogs and 20 freshwater fish. Since European settlement a number of exotic species have been introduced. For this and other reasons that will be elucidated later the Basin now hosts a number of endangered species of native fish, at least 35 endangered species of birds and 16 endangered species of mammals, with 20 species of mammals already having become extinct. Fauna whose habitat is instream and/or riparian are most directly affected by changes to the Basin’s hydrology. Most sensitive of these species are aquatic invertebrates, which form the base of the food chain. Although it is increasingly common to measure the health of an environment by the numbers of its various species of birds, some attention will be paid to aquatic invertebrates, while algae, and various species of flora and fauna will be mentioned only in passing.

The native plants of the Murray-Darling Basin’s riverine environment range from truly aquatic species to floodplain species which, though terrestrial, depend to some extent upon river floodwaters. All species are well-adapted to the Basin’s regime of drought and flood. Floodplain and riparian trees, notably River red gum, Black box and Coolibah, have adapted to the highly variable flood regime of the Basin to the extent that if flooding is overly controlled the populations of these species may suffer. Shrubs such as flooded lignum form important nesting habitats for several species of waterbirds. However, wet or dry, lignum is also habitat for feral pigs, and shrubs tend to disappear when an area is subject to over-grazing. Grasses, such as spiny mudgrass, water couch, common reed, and canegrass, are

34 www.mdcb.gov.au Natural Resources Management: Basic Statistics
35 In the U.K. this is now included with Gross Domestic Product and other indicators in regular measures of the nation’s quality of life
36 Young, ed., Rivers as Ecological Systems: The Murray-Darling Basin, 187-221
ecologically important on floodplains. The prevalence of these grasses is affected by the frequency of flooding and over-grazing. *Rushlands* occur mainly in the southern part of the Basin. Not being palatable to stock they tend to increase where grazing pressure depletes other plants. *Sedgelands* occur on floodplains throughout the Basin, typically on intermittently or seasonally wet flood-out areas and shallow depressions with heavy grey clays. Most sedges are palatable to stock.

Two species of the invasive *Cumbungi* exemplify the effects that *introduced species* can have on waterways. These occupy the same general ecological niches as rushes and sedges. They grow vigorously in response to changes in their environment, particularly altered water conditions, siltation or increased nutrients, making them useful indicators of environmental change. In the Basin they are better known as an agricultural problem than as an environmental problem because of their ability to completely cover farm dams and rice fields and clog channels and drains. They do, however, provide habitat for several species of shy waterbirds.37

*Aquatic invertebrates*

“…are animals without backbones, which live at least a part of their life within the water column or substrate of an aquatic environment”38

Invertebrates are vital to aquatic ecosystems, breaking down organic matter, transforming nutrients, and feeding on fungi and algae to provide a major food source for higher order animals such as birds and dish. They may be further classified as microinvertebrates, not visible to the naked eye (ie. less than about 1mm in length), and macroinvertebrates, which are visible to the naked eye. While it is difficult to keep a close watch on the status of microinvertebrates throughout the Basin it is reported that there are many hundreds of species of the three main microinvertebrate groups – protozoa, rotifers and microcrustaceans. Microinvertebrates are short-lived organisms, living only from a few days to a few months. Like algae their populations can grow rapidly – or bloom – under favourable environmental conditions. Macroinvertebrates range in size from various insect larvae a few millimetres in length up to a large Murray crayfish, which may be more than

37 Ibid., 205-7  
38 Ibid., 223
3kg in weight. The major groups are insects, worms, snails, molluscs and crustaceans.

The main flow changes in the lowland rivers that have affected microinvertebrate populations are the construction of weirs – leading to slower flow velocities – and, in the lower river reaches, to extended periods of low flow. These conditions allow populations of algae, and consequently zooplankton which feed on algae, to develop to bloom proportions. Macroinvertebrates are also found in a variety of habitats, and are also affected by changes in hydrology. For example, for benthic – bottom-dwelling – macroinvertebrates the character and condition of the river substrate is very important. The flow regime powerfully influences these factors. Control of flow regime by dams and weirs leads to more predictable, calmer flow regimes, which in their turn have the effect of reducing biodiversity by reducing the flushing of river substrates and reducing the diversity of ecological niches. Calm water is also one of three major conditions identified as contributing to the development of algal blooms. The other two conditions are high nutrient levels and degraded aquatic ecosystems. Algal blooms in the rivers of the Murray-Darling Basin were highlighted in 1991 when a major bloom in the Darling River caused the New South Wales Government to declare a state of emergency.

For fish and other riverine life forms the Murray-Darling Basin is a vast, interconnected network, stretching from the saline lakes of the Coorong estuary, east to the alpine streams of the Snowy Mountains and north to the inland semi-arid and tableland streams of southern Queensland. Currently twenty-six native fish species complete their life cycles within the Murray-Darling river system. However, that network is now partly constricted by structures such as dams, weirs and locks which store water and regulate rivers. Such changes in river flow, physical barriers to movement, decline in water quality, removal of habitat, overfishing, and the introduction of eleven species of fish (of which the carp is the most notorious), plant species such

39 Ibid., 225-6
as water hyacinth and diseases have made it more difficult for native species to survive.\textsuperscript{41}

Regulating rivers with dams, weirs and locks, and the diversion of water into irrigation farming also affects flora. For example, when the downstream floodplain forests of Barmah-Millewa, near Echuca, were affected by the reduction in water reaching them it was found that by carefully managing the water flow regime, forest health can be maintained. It was considered important that this be done, for the Barmah-Millewa Forests have valuable ecological, scientific, economic, cultural and recreational values. To protect these values, a water management strategy has, in recent years, been prepared by members of the Barmah-Millewa Forum and the Murray-Darling Basin Commission.\textsuperscript{42}

The hydrological, biological and chemical value of the extensive wetlands to the Basin has already been mentioned. The some 18,500 wetlands\textsuperscript{43} throughout the Basin are adapted to wetting and drying cycles. These wetlands, as well as many outside the Basin support extensive birdlife. 98 have been found (or predicted) to support 10,000 or more waterbirds and seven were found (or predicted) to support over 50,000 waterbirds. Both freshwater and saline wetlands occur, benefiting different species, and even different stages of the lifecycles of species. For example, although saline wetlands can support more waterbirds, many species depend upon freshwater wetlands for breeding. The Basin’s system of waterways is so large and interconnected that species of fauna, particularly waterbirds, can be nomadic as an adaptation to the erratic climate. Rainfall, either local or in the upper catchment, determines the availability of food supply, replenishing floodplain wetlands, leading to the appearance of aquatic plants, zooplankton, macroinvertebrates, and vertebrates such as frogs and fish, and therefore of waterbirds.

Changes in river and wetland water regimes following river regulation, either to maintain water levels of to dry out wetlands, have resulted in

\textsuperscript{41} www.mdbc.gov.au Environmental Issues: Declining native fish
\textsuperscript{42} www.mdbc.gov.au Environmental Issues: River regulation and forests
\textsuperscript{43} Young, ed., Rivers as Ecological Systems: The Murray-Darling Basin., 260-70
reductions in wetland area and a resultant reduction in numbers of waterbirds. Permanent flooding is also detrimental to many wetland plants that rely upon the flooding and drying cycle for seed germination and root zone aeration. Perhaps the most well-known example of this are the deaths of many river red gums in marginal wetlands along the Murray River. Land clearing and irrigation have also affected wetlands by causing groundwater tables to rise, drawing salts to the surface and causing an increase in the proportion of the Basin’s saline wetlands.

Waterbird populations, which give an indication of the overall health of the entire ecosystem, are probably controlled in the long term by the availability of wetlands during widespread droughts. These wetlands become something like refuges; the availability of water controls the food resources, which in turn determines the number of birds that can exploit the next breeding opportunity. The Narran Lakes, some of the larger wetlands along the Paroo River and parts of the Macquarie Marshes can provide such drought refuges. Many coastal wetlands that also provided drought refuges have been drained for agricultural or urban development. On the other hand some previously ephemeral wetlands in the Basin, including the Barren Box Swamp in the lower Murrumbidgee catchment and the Menindee Lakes which supply Broken Hill with water are now permanently inundated and provide drought refuge for ducks when local rainfall is low. However, during extended periods of drought these unnatural refuges provide little food. Many permanent water storages are steep-sided, mitigating against wading birds. Large water fluctuations prevent the establishment of a diverse aquatic community.

Apart from altering the flood regime of floodplain wetlands by river regulation the most significant changes since European settlement to have affected the Basin’s waterbird populations have been the clearing of vegetation along rivers and in wetlands, the spread of introduced plant weeds and the grazing of wetland vegetation. Changes to the water quality in the rivers and wetlands, including increased salinity and turbidity and increased nutrient and pesticide concentrations have altered the quality of
habitat for waterbirds and other species. Hunting and predation by introduced species such as foxes and cats have also affected waterbirds.

There are a number of other riverine animals native to the Murray-Darling Basin. They include the platypus (*Ornithorhynchus anatinus*), the amphibious water rat (*Hydromys chrysogaster*), more than 50 species of frogs, several species of tortoise and a number of species of snakes and lizards. All are affected in ways too numerous to mention here by loss of or changes to aquatic and riparian habitat, changes in food sources and the introduction of feral predators.44

**Summary**

This chapter has “read”, that is described, the Murray-Darling Basin’s waterways from geological, geographical, hydrological and ecological perspectives. This vast network is an unique, ecologically sensitive, integrated, bountiful catchment system, formed over aeons. Its ecology is dependent upon its hydrology which in turn has developed in response to its ancient, flat geomorphology, and to a climate characterized by highly erratic, generally low rainfall. It forms the physical context for this study.

44 Ibid., 271-83
Chapter Four

Ngurunderi and the Murray Cod:
An ecotheological reading
of how Aboriginal people affected
the Murray-Darling Basin’s waterways

Introduction

This chapter reads ecotheologically how the Aborigines who lived in the Murray-Darling Basin prior to the advent of Europeans affected its waterways. In doing this it assesses not only how Aborigines affected the waterways physically, but how their spirituality and religion affected their human ecology. White compared the European nature religions with the form of Christianity which supplanted them, arguing that

“What people do about their ecology depends on what they think about themselves in relation to things around them. Human ecology is deeply conditioned by beliefs about our nature and destiny – that is, by religion.”1

In case this was not obvious for White’s readers he continued,

“To Western eyes this is very evident in, say, India or Ceylon. It is equally true of ourselves and of our medieval ancestors.....The victory of Christianity over paganism was the greatest psychic revolution in the history of our culture.”2

The spiritual beliefs of the Aborigines prior to European settlement differed markedly from, but also resembled in a number of respects the paganism Christianity conquered in Europe. My purpose in reading Aboriginal human ecology and spirituality in the Basin is to resource, together with Chapters 5 – 7, the discussion in Chapter 8 of the ecological effects of that “psychic revolution” in the Basin, the “ecotheology of rivers” in Chapter 9, and to present an “Aboriginal gift” of spirituality in the concluding chapter. Thinking about human ecology and spiritual beliefs of the Aborigines will

1 Lynn White, "The Historical Roots of Our Ecologic Crisis," Science 155, no. 3767 (1967), 1205
2 Ibid., 1205
help reflection upon those of Euraustralian settler society in the same landscape.

However, Masman & Johnstone’s note of caution about relations between Euraustralians and Aborigines is wise:

“Neither comprehended the philosophy underlying the other’s society.”

Therefore I approach this subject cautiously and respectfully, mindful that the western discipline of Aboriginal studies has often been mired in misunderstanding, and acknowledging the prior custodianship of the Murray-Darling Basin by many Aboriginal tribes.

Gaining insight into Aboriginal spirituality has been the most difficult but rewarding aspect of this thesis. In 2005 the Australian Lutheran theologian Norman Habel gave me a copy of his *The Land is Mine* in which he inscribed

“Learn to see the Spirit emerging from the Land.”

Gazing across the great basin-shaped vista called Jamison Valley and beyond from Echo Point, Katoomba, early on the fourth Sunday in Advent, 2008, I noticed that it shimmered and vibrated with sound, light and an uncanny, palpable life. There is, doubtless, a scientific explanation: the geological formation amplifies the already raucous sound of various species of bird-life, and so on… Nevertheless, the humans worshipping God, intentionally seeking the Holy Spirit’s presence and guidance in Sydney that evening seemed to me to provide a fraction of what I had experienced in the morning:

“Make a joyful noise to the Lord, all the earth…
Let the rivers clap their hands;
let the hills sing for joy together before the Lord…”

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4 Psalm 98:4a, 8-9a, ESV
“When You send your Spirit they are created, and You renew the face of the earth.”  

I believe I experienced what Habel referred to.

Despite a variety of practices and stories across the Murray-Darling Basin and the Australian continent, many of which have undoubtedly been lost since the advent of Europeans disrupted their cultures, there was and is a commonality about Aboriginal religion and human ecology which differed greatly from the religion and human ecology of the European settlers who supplanted them. This chapter will outline, then describe in more detail the salient elements of Aboriginal religion as they are relevant to this study. In so doing it will describe generally the relationship between Aboriginal religion and “Country”, the word from Aboriginal English that best describes the landscapes in which Aborigines lived; then discuss how Aborigines lived in Country, illustrating this with examples taken from the Murray-Darling Basin. To use White’s terms it will examine the triangular set of relationships between Aboriginal religion, human ecology and the landscape of the Murray-Darling Basin, paying particular attention to its waterways, then reflect theologically upon these matters.

**Central Elements of the Aboriginal Worldview**

The Dreaming, the ‘Unseen Realm’, Totemism, and ‘Country’ were (and are) vital interlocking elements of Aboriginal worldview and religion that held each Aborigine in a matrix of the spiritual and material realms through his or her relationship with totem and totemic ancestors. Sometimes Aborigines express this totemic relationship as “my Dreaming”. This relationship obliged him to care for country which he believed his totemic ancestor had formed, particularly if the relevant Dreaming tale indicated that his ancestor had become a feature of that landscape. It also obliged him to care for that aspect of the natural world (often a species of animal, but it

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7 Psalm 104:30 NIV
8 Each of the Dreaming, Totemism and the Unseen Realm will be described in more detail below.
9 By ‘Country’, the land and waterways, including coastal seas, of the area under the particular custodianship of Aborigines concerned is meant. The term is similar in meaning to ‘Landscape’, but has been chosen because Aborigines themselves, when they use English, tend to use it.
could be one of many things) which was his totem. This care was carried out in both the material and the spiritual realms. It is frequently said of Australian Aborigines, and of other indigenous peoples, but in contrast to those of western culture that

“They believed that the land belonged to everyone and everyone belonged to the land.”

One might say that Aborigines were agents of the Dreaming, of their Totem, and of the spiritual realm, and their task it was to care for ‘country’.

**Country**

In this chapter the term ‘Country’, taken from Aboriginal English, will be used in place of ‘Landscape’, or ‘Land’. Anthropologist Deborah Bird Rose explained that:

“Country in Aboriginal English is not only a common noun but also a proper noun. People talk about country in the same way that they would talk about a person: they speak to country, sing to country, visit country, worry about country, feel sorry for country, and long for country. People say that country knows, hears, smells, takes notice, takes care, is sorry or happy. Country is not a generalised or undifferentiated type of place, such as one might indicate with terms like 'spending a day in the country' or 'going up the country'. Rather, country is a living entity with a yesterday, today and tomorrow, with a consciousness, and a will toward life. Because of this richness, country is home, and peace; nourishment for body, mind, and spirit; heart's ease.”

Rose defines “Country” as “a nourishing terrain”, and “a place that gives and receives life” that is “lived in and lived with”. It is multi-dimensional, consisting of

“people, animals, plants, Dreamings; underground, earth, soils, minerals and waters, surface water, and air.”

There is land Country, sea Country (including the submarine domain) and even sky Country. Country has both origins and future, for it exists in and through time.

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Masman, *Reedbed Country: The Story of the Macquarie Marshes.*, 31
13 Ibid.

90
Aborigines exercised spiritual care for country by such measures as ‘singing the land’, retracing the journeys of their totemic ancestors in actuality and in ceremonies such as corroborees, and refreshing paintings on rock walls and bark. However, the relationship of that sentence to the deep relationship Aborigines had with Country is like describing the Christian Eucharist as a simple snack eaten in remembrance of Christ. Both descriptions are true, but inadequate. Europeans trying to understand and describe Aboriginal culture and the relationship they bore with Country are limited by what we have not experienced. The following quote attempts to give a sense of the depth of this relationship. In his biography of the translator T.G.H. Strehlow, Barry Hill was being enlightened about the Aranda (of central Australia) Aborigines’ structure of feeling by use of the phrase “They feel it in their guts”:

“The emphasis was on how information of a certain kind is received, which is to say, not by intellectual channels, as we might call them, but straight into the body…..In Aranda culture a set of identities threads thought and feeling inextricably into the whole body of the person, as if into the central nervous system, precisely because that knowledge involves a person’s sense of self, their country and the names of things, especially their ancestor being. That is to say the most important language that pertains to any of these dimensions of life – of selfhood and kinship, or home place or birth place, or origin and destiny – is integral to the health of the whole body. ‘They feel it in their guts’ is a way of saying that you can’t separate these things out because they are by nature centrally, organically ingested and enacted.”

This extraordinary identification with The Other, so foreign to westerners’ profound distinction between subject and object, was evinced in the Aborigines’ use of language:

“Perhaps the most vivid thing in Strehlow’s oeuvre – and one that creates a leitmotiv for any study of him, as well as the people he enshrined in his texts – was the account he gave of the songmen who call out the names of their ancestor beings, the names which are usually secret-sacred, and the calling of which constitutes a real re-enactment of how things began, how life was born and the country made. A real re-enactment for a good reason: the names were not merely words in the air. Names constitute the ancestor beings themselves. And a man calling the name out – hurling it up in the song – was himself the ancestor. He was not acting out old times. He was dancing eternal spirit in present time.”

14 Barry Hill, Broken Song: T.G.H. Strehlow and Aboriginal Possession (Milson’s Point, NSW: Random House Australia Pty Ltd, 2002), 41-42
15 Ibid., 41-42
Whereas White argued that

“by destroying pagan animism, Christianity made it possible to exploit nature in a mood of indifference to the feelings of natural objects”,16

for the Aborigines

“The names by themselves, oneself, country: reverence for one imbued the other; and their common identity was sourced in the fecund ancestor creature.”17

They were a part of an intricate net of Country, Spirit, Totem, Language, all mediated through the Dreaming. It was this radical difference in understanding of relationship between Country and humans, and unseen and seen realms that caused the fundamental misunderstanding of which Masman and Johnstone wrote.

James Cowan highlighted the importance of Country for Aboriginal religion and human ecology, and described another ‘network map’ over Country. As far as the Aborigines’ human ecology is concerned Cowan writes:

“…it is true to say that they ‘mapped’ their territory with the same vigour as any modern-day cartographer. Not a tree, cave, rockhole, saltpan, creek bed or outcrop escaped their notice when it came to recording the features of their tribal land. In fact, so complete was their knowledge of their country that it could be reduced to a series of symbols or zigzag markings, either on a sand drawing or a war shield.”18

Linking Aboriginal religion with their emphasis on Country, and indeed on Dreaming Tracks that passed through and defined Country Cowan wrote of Aboriginal warriors living along the Fortesque River:

“By looking at the war shield of any warrior living along the river another warrior would know exactly from which bend or waterhole the former came…The shield became the symbolic definition of a totemic environment that not only placed a man in situ but also reflected the world-creation process of the Rainbow Snake as it made its way inland from the ocean.”19

16 White, "The Historical Roots of Our Ecologic Crisis.", 1205
17 Hill, Broken Song: T.G.H. Strehlow and Aboriginal Possession. 41-42
18 James Cowan, Aborigine Dreaming: An Introduction to the Wisdom and Thought of the Aboriginal Traditions of Australia, 2 ed. (London: Thorsons, 2002)., 6
19 Ibid.
In the words of a Jindjiparndi song,

“The snake got up from the north and made a deep trench in the land, digging it halfway, and came along the river from the north. He cut off two halves (of its halfway course) by making waterholes beginning at its edge.”

Thus a link was automatically made between the physical aspect of the river in question and its mythological creation.” The Fortesque River is a long way from the Murray-Darling Basin and, as stated above customs and beliefs across the continent varied, but belief in the Rainbow Serpent as a creative agent was universal.

Fig. 3 below represents still another ‘network map’. It is a map of mythic Australia, according to David Mowaljarlai. The square nodes represent stories; the lines linking each story are lines of communication between tribes. Thus Australia is not a ‘landmass’ but a ‘storymass’.

Fig 3  Map of Mythic Australia as “Storymass”
according to David Mowaljarlai

I shall now explore in more detail these central elements of the Aboriginal worldview: the Dreaming, the Unseen Realm, Totemism, and particular places in Country – Sacred Sites and the Songlines.

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21 Cowan, Aborigine Dreaming: An Introduction to the Wisdom and Thought of the Aboriginal Traditions of Australia., 7
22 Ibid., 72
The Dreaming

The concept of “The Dreaming” was central to Aboriginal religion and in particular to the way in which they understood and lived out their lives in the Murray-Darling Basin. The Dreaming was like the womb of Aboriginal existence, providing the overall context for all life before, in the present and in the hereafter. It was a concept so multi-layered yet unified, the ‘temporal’ and the ‘spiritual’ were so overlapping and intertwined that it was difficult for Westerners, accustomed to thinking in terms of Platonic dualities, to understand.

The anthropologist W.E.H. Stanner (1905 – 1981) has been described as “the white man who has written the best short account of the Dreaming.”23 At the beginning of his seminal essay “The Dreaming” from 1953, Stanner quoted Muta of the Murinbata people:

“White man got no dreaming,  
Him go ‘nother way,  
White man, him go different.  
Him got road belong himself.”24

Stanner tried in this essay to introduce his western audience to the subtle complexity and sheer difference of the concept of The Dreaming. On the one hand he wrote,

“A central meaning of The Dreaming is that of a sacred, heroic time long ago when man and nature came to be as they are…”;

then added immediately,

“…but neither ‘time’ nor ‘history’ as we understand them is involved in this meaning.”

He stated that The Dreaming is a complex of meanings: one’s individual totem, or the place from which one’s spirit came may also be called one’s Dreaming; a custom, or the law of life are said to be causally due to the Dreaming. Dreaming does form a vital integrative function for The

Dreaming. It is by the act of dreaming that Aborigines, in a way that Europeans find very difficult to understand, conceive of themselves as making contact with that which links The Dreaming and the Here-and-Now. Vitally, in Aboriginal understanding a man fathers a child not primarily by sexual congress, but in the act of dreaming, during which his spirit ‘finds’ a child and directs it to his wife, who then conceives physically.25 Similarly, through dream-contact with a spirit an artist is inspired to produce a new song, and it is through dreaming that one divines, for example, an enemy’s intention to kill one by sorcery, or relatives’ plans to visit. Stanner summed up this complex of meanings thus:

“The truth of it seems to be that man, society and nature, and past, present and future, are at one together within a unitary system of such a kind that its ontology cannot illumine minds too much under the influence of humanism, rationalism and science.”26

Stanner was convinced that

“one has not succeeded in ‘thinking black’ until one’s mind can, without intellectual struggle, enfold into some kind of oneness the notions of body, spirit, ghost, shadow, name, spirit-site, and totem.”27

Perhaps, philosophically, this Aboriginal concept of “oneness”, as opposed to the western set of dualities, described in Chapter 1, lie at the heart of the great differences between the two worldviews. Stanner suggested that westerners might better be able to deal with the concept of The Dreaming by

“try[ing] to relate it to things familiar in our own intellectual history.”

From this perspective Stanner defined The Dreaming as

“a cosmogony, an account of the begetting of the universe, a study about creation. It is also a cosmology, an account or theory of how what was created became an ordered system. To be more precise, how the universe became a moral system…”28

Ashley Montagu, Coming into Being among the Australian Aborigines: A Study of the Procreative Beliefs of the Native Tribes of Australia, 2 ed. (London: Routledge & Kegan Paul Ltd, 1974).

25 Stanner, "The Dreaming." 27
26 Ibid. 25
27 Ibid. 28
Stanner discerned three common elements in hundreds of tales about The Dreaming:

“great marvels”,
“how certain things were instituted for the first time”,
and that
“…many of the main institutions of present-day life were already ruling in The Dreaming.”

The tales also provide three keys to the Dreaming. They are a poetic key to reality, a way of stating the principle which animates things. They are also “a collation of what is validly known about such ordained permanencies”, or a key to truth; Thirdly, by constant recitation of what has been done rightly or wrongly in The Dreaming the tales are a key to the norms of conduct and a prediction of how humans will err.

In a sense, said Stanner, the Dreaming tales constitute a philosophy in the garb of oral literature:

“In following out The Dreaming the blackfellow ‘lives’ this philosophy. It is an implicit philosophy, but nevertheless a real one. Whereas we hold (and may live) a philosophy of abstract propositions, attained by someone standing professionally outside ‘life’ and treating it as an object of contemplation and inquiry, the blackfellow holds his philosophy in mythology, attained as the social product of an indefinitely ancient past, and proceeds to live it out ‘in’ life, in part through ritual and an expressive art, and in part through non-sacred social customs.”

Eugene Stockton has argued that Aboriginal Law is founded upon the Dreaming, and is so close to it that in local usage the two terms are practically synonymous. In the creative period of the Dreaming the ancestral beings set up relationships between each other that determined at the end of that phase the Law of its totemic descendants. Henceforth each life form represented in the person of its Dreaming knew the law by which it would live where it could travel, what it could eat, what was its moiety, how it was to relate to others, in short, what was its culture. Each knew its own

29 Ibid. 28, Stanner’s italics
30 They are not ‘definitions’ (which is a European method of rendering reality understandable), but are ‘keys’ to reality, “to the singleness and plurality of things set up once-for-all when, in The Dreaming, the universe became man’s universe.” Ibid. 29
31 Ibid. 29-30
32 Stockton, The Aboriginal Gift: Spirituality for a Nation. 60-63
law so that all could co-exist without destroying each other. This law was passed down from generation to generation, becoming the conscious responsibility of each individual.

Deborah Bird Rose’s studies of the Yarralin people of Victoria River Valley in the Northern Territory led her to conclude that

“Aboriginal law is based upon the concept that the whole cosmos is a closed, self-reproducing, self-regulating system of life which seeks a steady state, in which all life is maintained at optimum levels of productivity, knowledge and so on”\(^{33}\)

The cosmos is a living system in which all parts are alive, conscious, that is capable of knowing and acting, and related to each other. Each part is a moral agent with its own law, and responsible for maintaining and enhancing itself and the whole, while respecting the other parts that do likewise. The ultimate criterion of morality, according to Rose, is the

“preservation, nurturance and enhancement of life. The means to do this is to preserve the relationship between the parts set up from the beginning.”\(^{34}\)

Rose identified four principles of relationships which she argued disclose what is the Aborigines’ ultimate belief in the meaning of life. These are autonomy, balance, symmetry and response. These principles apply both for non-human nature and for Aboriginal society.

More recently the South Australian theologian Norman Habel has provided a structured description of the Dreaming,\(^{35}\) which will also help in the consideration of other elements of Aboriginal religion – Totemism, the seen and unseen realms, and Country (in particular Sacred Sites and Songlines) – important for this study.

**Creation**

Habel’s first characteristic of the Dreaming, which he names “Creation”, refers to a time at the very beginning of all things, when not only the Law,  

\(^{33}\) Ibid. 61  
\(^{34}\) Ibid., 61  
but the earth was formed into the world as we know it today. Many Aboriginal sacred stories concern what happened in the Dreaming, and speak of several different active agents who formed the land and founded life on the land. As Stanner noted, some Dreaming legends indicate that traditional groups from some but by no means all parts of ancient Australia believed in a Great Spirit. Legends indicate that in the beginning the Creative Essence of each area emerged from a void to form the earth's contours, organize the seasons and create the sunshine, the rain and the vegetation. Then, when the Creation was in complete readiness, the Great Spirit produced wildlife and finally the first men and women. Further, the Creator guided chosen people to prepare further and to hallow each area for the generations that were to follow.

Other legends indicate that in the beginning the landscape was flat and featureless, and that ancestral heroes journeyed across it, forming the land as they went. The Ngarrindjeri people from the Lower Murray describe the creation of the lower Murray River in the tale related at the beginning of the chapter:

“In the Dreaming, Ngurunderi….travelled down the River Murray in a bark canoe, in search of his two wives who had run away from him. At the time the River was only a small stream below the junction with the Darling River. Ponde (a giant cod fish) swam ahead of Ngurunderi, widening the river with sweeps of its tail. Ngurunderi chased the fish, trying to spear it from his canoe. Near Murray Bridge he threw a spear, but it missed and became Long Island. At Tailem Bend he threw another: the giant fish surged ahead and created a long straight stretch in the River. At last, with the help of Nepele (the brother of Ngurunderi’s wives), Ponde was speared after it had left the River Murray and had swam [sic] into Lake Alexandrina. Ngurunderi divided the fish with his stone knife and created a new species of fish from each piece…”

Like a number of the ancestral heroes Ngurunderi was said, when he passed on, to go into the sky and become a constellation of stars. Others were said to become features in the landscape. This is a vital element in Aboriginal
Totemism, and links the heavens and the earth in a way lacking in western cosmology.\footnote{37}

Legends concerning the third formative agent of creation, the Rainbow Serpent, are among the most widespread of the Dreaming myths. In most areas Aborigines claim that the Rainbow Serpent arrived in this land shortly after the initial creation of the earth, its creatures and the first people. Some legends, like the one above that described the formation of the Fortesque River, have the Rainbow Serpent forming landscapes by writhing across them. However, other legends identify the Rainbow Serpent as the ‘primary’ Creator, moving across the land and giving birth to all living beings as it went, then continuing to provide springs of fresh water, and food and shelter so that all of its offspring might prosper. In most areas it was thought that the Rainbow Serpent lived on indefinitely in a secret, sacred place, and watched the affairs of the aboriginal people with interest. The Rainbow Serpent is spoken of with great respect, even today.

Perhaps only in Australia is the rainbow linked with the concept of the Divine Snake.\footnote{38} The Aborigines believed that the rainbow in the sky after rain was the mirrored reflection of this majestic creature. James Cowan describes the link between rainbow and Divine Snake, and between “peri-Christian” and Aboriginal theology thus:

“Traditionally a celestial bridge over which only gods might walk...the rainbow has always been regarded as a link between the unseen realm of the Spirit and that of manifestation. The Snake is also considered to be an intermediary between the unmanifest Principle and the realm of matter. According to an early Gnostic text (\textit{Enenchos} V, 17, 8)\footnote{39} this relationship is confirmed: ‘Midway between the Father and Matter...the Serpent that moves eternally towards the unmoved Father and moved Matter; now it turns to the Father and gathers up forces in its countenance.’ Confronting the Rainbow Snake in the context of Aboriginal cosmology, therefore, represents the merging of two important principles of unity between Spirit and matter. Indeed, among the Kogai tribe of Southeast

\footnotetext{37}{Modern scientific understandings that we are all “stardust” may help promote the sense that humans are at one creation.}
\footnotetext{38}{Cowan, \textit{Aborigine Dreaming: An Introduction to the Wisdom and Thought of the Aboriginal Traditions of Australia}. 18}
Australia the rainbow was known as *nabal ane tumbila* or ‘God his fire’.”

There is a subtle but important distinction between forcing Aboriginal Dreaming tales to fit the categories of western theology, and appealing to those categories to help westerners make sense of the Dreaming tales. Whether or not Cowan has crossed the line from one to the other, he has at least made the point, important for western Christian theology to reappropriate, that there is a unity between spirit and matter, the unseen and seen realms.

**The Unseen Realm**

Habel’s second characteristic of the Dreaming is the ever-present, real *Unseen Realm*. The unseen Dreaming is hidden beneath, but is more real than, the visible world around us. It is

“the hidden world of spiritual powers that give life and reality to the visible world.”

For Aborigines all of the beings from the Dreaming are spiritual beings. Most are Ancestor Beings, heroes and heroines of the Dreaming associated totemically with one species of life or nature. At the end of the Dreaming era they were changed into part of the physical world. As a result their spirits may now reside in, for example, a geological feature or, as happened with Ngunderi in the story repeated above, a constellation of stars.

This conviction infused material, seen life with a sense of the spiritual, or unseen. The unseen and the seen overlapped to the extent that it was impossible to disentangle them, which had a number of consequences for the worldview of Aborigines. In several parts of Australia Aborigines held a fundamental belief that great spirits existed. In regions where they believed in an eternal Great Spirit they conceived of her/him watching with interest and affection, and indeed interceding as the Aboriginal people lived out their lives. Many separate legends detail the continuing involvement of the Great Spirit in the lives of the Aboriginal people. Whether they were

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understood as ancestral or self-subsistent spirits, or whether, as in other parts of the continent, Aborigines believed in lesser spirits, their function was to look after humans. The corollary to a belief in spirits that care for humans is the belief that humans matter.

For example, over a large portion of the Murray-Darling Basin the great spirit was named Baiame. A legend told by the Wiradjuri tribe around the area of Brewarrina tells us that Baiame sent forth spirit helpers in the guise of men. Their task was to show the people there how to construct fish traps in the river. Solid, circular walls of stone were quickly built, which did trap an abundance of fish. The Wiradjuri people created a special corroboree to show their appreciation which they performed each time they had a big haul of fish.42 The bullroarer's sound was accepted by many as being the voice of the Creator Spirit calling to His people.

On the other hand, Dreamtime legends depict forces of evil and discord as well as of good in the unseen realm. Most of the discordant spirits or beings (one of which was the bunyip) were said to eternally inhabit caves, dark recesses and the deep waterholes of the land. Neither all serpent-like beings nor all waterways-connected spirituality were regarded positively by Aborigines. For example, it is believed that in the depths of the Boobera Lagoon, on the New South Wales side of the Barwon River near Goondiwindi, a huge, snake-like monster called the Kurrea dwells.43 This monster was said to kill anyone who tried to hunt on the lagoon and was thought of by some as being an evil ‘spirit of the land’. It was said to move through the earth in a manner similar to the Rainbow Serpent or the Murray Cod, but its intentions were malevolent.

Amongst others anthropologists Ronald and Catherine Berndt have written in detail on Aborigines’ familiarity with and power in the unseen realm. Magic and sorcery were used extensively, even as means of social control. The effect of this interpenetration of material and spiritual was to cause Aborigines to live life in both realms at once. It is reminiscent of White’s description of the effect of pre-Christian European pagan animism:

“In Antiquity every tree, every spring, every stream, every hill had its own genius loci, its guardian spirit. These spirits were accessible to men, but were very unlike men; centaurs, fauns and mermaids show their ambivalence. Before one cut a tree, mined a mountain, or dammed a brook, it was important to placate the spirit in charge of that particular situation, and to keep it placated.”

Aborigines, however, believed that they did more than to placate the spirits. It was their task to maintain and renew their country through participation in their totemic duties. Aboriginal religion acknowledged that the material domain was under spiritual authority. By this Stanner meant

“the rule of all invisible potencies, however imagined, that were believed to have effects on men’s lives, effects not possible by unaided means in the hands of ordinary men.”

This points to a worldview more akin not only to that of pre-Christian European paganism, but to that of the New Testament writers themselves than to that of much modernist secular and even Christian thought.

Aborigines were not simple animists or animatists. According to their belief many things in the material, seen environment were simply things, without further import, uninfluenced by the unseen realm. Further, no one spirit or potency had authority over all materiality that was so influenced. In addition, there was thought to be a whole variety of spirits. Some were human-like, some quasi-animal. Of those that were human-like only some were thought to be ancestral; others were self-existent. The authority of

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45 White, "The Historical Roots of Our Ecologic Crisis.", 1205
46 Stanner, "The Dreaming.", 119
47 Ephesians 6:12 is perhaps the clearest indication of this. That it is so often interpreted to refer to evil structures in human society is surely an indication of the current western worldview. For a fully blown demonology cf. Edward F. Murphy, The Handbook for Spiritual Warfare (Nashville, TN: Thomas Nelson Publishers, Inc., 1996).
these beings, as understood by the Aborigines, was only vaguely connected with morals and ethics.

That said, Stanner pointed to two classes of belief to justify his contention that the seen realm was under authority of the unseen. The first concerned the impregnation of women by pre-existing child-spirits that act under their own volition; the second concerns the dependence of humans upon a potential of life (of humans, animals and plants) pre-existing in totem-places. Humans had their part to play. They should help the child-spirits do their work, and must ritually facilitate the release of the potential. However, they did not create the store of potential, and were helpless without it.

In other words, Aborigines lived in the seen realm, but under the control of a totemic system driven, they believed, from the unseen. It is now time to study totemism (often called ‘my Dreaming’ by Aborigines) in more detail.

**Totemism**

In Australian Aboriginal as in a number of other indigenous cultures a totem was the acknowledgement of a specific species of fauna, flora, aspect of the landscape or some other feature as one's sacred emblem. The separate totems were believed to have been initially designated by ancestor spirits: no Aboriginal group chose its own totem. Consistent with the unchanging Law, neither have totems changed over time. There was and is a separate totem for each group and each individual in the group. Across Australia lineage varied between patrilineal and matrilineal. The Wiradjuri, a major people inhabiting what is now central western New South Wales in the Murray-Darling Basin, used a matrilineal system.

Acknowledgement of the totem as being sacred was interwoven with and evident in all aspects of each group member's daily life. Quite naturally, and as happens in many cultures, implements were identified with totemic symbols. Yet the totem system was more intense and all-embracing than, say, the Scottish clan system. Like the clans the totem system gave each person and group a sense of pride, purpose and belonging. However, it also helped to cement firmly the deep, abiding spiritual tie between people of
each group and the land to which they belonged, to the spiritual realm, and to the past. Although groups sometimes split into smaller clans these kept the same totem, and therefore the same ties of loyalty and kinship. In difficult times such as drought clans with the same totems helped each other, and during prosperous times they met socially.

The following dreamtime legend from the Wiradjuri people exemplifies the importance of totems. In olden times the Wiradjuri people were harassed by mobs of giant kangaroos more than 3 metres tall. A hero called Wirroowaa asked the great ancestral Spirit Byamee for help. Byamee replied that he would give help if Wirroowaa painted himself with white clay. The clay was only obtained from the area the kangaroos inhabited. With camouflage of goanna fat, dust and leafy branch Wirroowaa succeeded in obtaining white clay undetected by the kangaroos. Byamee upheld his side of the bargain by sending spirit helpers who started fire with two sticks. This phenomenon of voluntarily-started fire alarmed both humans and giant kangaroos. The Wiradjuri people fled to a treeless area and watched as the giant kangaroos fled, never to return. Their alarm then turned to gratitude, for they had been relieved of the kangaroos, and they had found how to start and use fire. From then on men of that area painted their bodies with white clay whenever they were planning a special ceremony to show that they remembered their creator Baiame and his kindness to them.

Belief, through Totemism, that the Dreaming is ever-present imparted to Aborigines a sense of time radically different from the “non-repetitive and linear” concept westerners have of this quality. At this point also the Aboriginal worldview resembled that of pre-Christian paganism more than that of modern and postmodern westerners for whom, as White put it,

“daily habits of action...are dominated by an implicit faith in perpetual progress which was unknown either to Greco-Roman antiquity or to the Orient. It is rooted in, and is indefensible apart from, Judeo-Christian teleology...We continue today to live, as we

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48 This is an example of modern, western scientific observation and dreamtime legend tending to confirm each other.

49 Jean A. Ellis, *Australia’s Aboriginal Heritage* (North Blackburn, Vic.: Collins Dove, 1994), 14-15

50 White, "The Historical Roots of Our Ecologic Crisis.", 1205

51 Examples of the paganism Christianity conquered.
have lived for about 1,700 years, very largely in a context of Christian axioms.”

However, because the Aborigines were intimately connected through totems with their ancestor heroes whose spirits, they believed, were still present in nature, the past was for them in a sense always present.

This understanding of the nature of time was associated with major implications for the Aborigines’ relationship to space. The Aborigines understood themselves to be custodians of their ‘country’, which included the land, the waterways and even the coastal seas. It was their duty to care for and maintain country by reiterating and renewing what their ancestral, totemic heroes did. The consequences of the linear, future-oriented view of time that Europeans brought to the Murray-Darling Basin for how they have lived there will become apparent in Chapters 5 - 8. For now it will suffice to say that White’s use of the word ‘Progress’ constitutes a broad hint.

Totemism was “both personal and communal.” Both Aboriginal groups and individuals believed implicitly in and speak of that with which they have been linked from the beginning. Each traditional man, woman and child had what is usually called their own personal “totem”, although many Aborigines prefer to call it “my Dreaming”. Galarrwuy Yunupingu explains how this comes about thus:

“The Aboriginal Spirit is born out of a water hole. It becomes a baby born from a mother…The land gives a Spirit to that baby and that baby will be a baby of that country. That baby’s name will be named after that waterhole, or that billabong, or that tree or that flower. So it happens in Aboriginal society. It has been happening for over 60,000 years.”

The belief in a personal totem or Dreaming linked each person intimately with the land. At death the body perished, but Aboriginals believe that after the performance of necessary rituals the spirit is sent on its way to return to the spirit world of the dead. The spirit world was thought to be located somewhere on earth, rather than removed from earth. Some aboriginal

52 White, "The Historical Roots of Our Ecologic Crisis," 1205
53 Crotty, Finding a Way 2e: The Religious Worlds of Today, 117
groups believed in reincarnation, whereby the spirits returned to enter the womb of another woman.

**Country – Of Sacred Sites and Dreaming Tracks (Songlines)**

As noted, Country is of great spiritual significance for Aborigines. Additionally, and as can be inferred from the Dreaming tales of the formation of the Fortesque and lower Murray Rivers referred to above, certain places were particularly important. Special places are often referred to as 'sacred sites', a generic term for different types of places or areas of land, fresh water or even coastal waters. Many sacred sites were places where particularly important events occurred during the Dreaming. Others were places known as 'increase centres' where special ceremonies were conducted to ensure the wellbeing of particular species by members belonging to that species’ totem. Others were places of great danger, sometimes called 'poison grounds' or simply 'danger places', where it was believed that inappropriate action (such as the killing of a forbidden species, or the entrance of a stranger) would cause severe storms, sickness or even death. Some sites were sacred because of their use as a burial ground or important meeting place for ceremonies.

The routes taken by the Creator Beings or mythical and totemic ancestors in their Dreaming journeys across land and sea were also of continuing importance to Aboriginal peoples who linked many sacred sites together in a web of Dreaming tracks criss-crossing the country. Sacred sites were like nodes of significance in the network of Dreaming tracks which run for hundreds, even thousands of kilometres, from desert to the coast and crossing through many 'countries', or tribal areas. Stories and songs which related the creation events that occurred along Dreaming tracks were shared by peoples in countries through which the tracks pass, even though their languages can be quite different. For this reason Dreaming tracks were sometimes known as 'songlines'. Part of the continuing custodianship of the land consisted in walking the songlines, singing the song that assisted in re-creating that part of the country.

Sacred Sites and Dreaming Tracks also defined Aboriginal countries. Clan estates, and larger tribal or language areas, were largely defined not so much
by rigid external boundaries but by the location and significance of sacred sites, Dreaming tracks and other special places. Sacred sites could provide the focal points and, frequently, the names of clan estates. Similarly, the path of Dreaming tracks within or between estates helped to define their size and shape.\textsuperscript{55}

Habel described the Dreaming as “a power that affects all of life.”\textsuperscript{56} Aborigines believed that by repeating ceremonies first performed by their totemic ancestors in the Dreaming, the Dreaming’s power was again made present. As T.G.H. Strehlow,\textsuperscript{57} James Cowan\textsuperscript{58} and Bruce Chatwin\textsuperscript{59} have described, songs, stories, symbols, rituals at ceremonies all activated the Dreaming. Aborigines believe that when they follow the routes the spirit-ancestors of their totem made when they formed the land, “singing the land” as they go, they care for country. To the extent that the song is broken country itself is in danger of being broken. As one of Cowan’s Aboriginal informants said:

“We don’t sing the songs anymore. And when we don’t sing the songs, the animals soon leave. That what we doin’ to the world: lettin’ nature go off to die. Because we don’t sing the songs.”\textsuperscript{60}

Pioneer pastoralist, Kate Langloh Parker, of ‘Bangate’, Brewarrina, in the western Murray-Darling Basin revealed the difficulty European settlers had in understanding this worldview:

“Corroborees seem to fit in with the indescribable mystery of the bush. That the spirit of the bush is mystery makes it so difficult to describe beyond bald realism, otherwise it seems an effort to seize the intangible.”\textsuperscript{61}

\textsuperscript{56}Crotty, Finding a Way 2e: The Religious Worlds of Today. This is Habel’s third characteristic of the Dreaming.
\textsuperscript{57}T. G. H. Strehlow, Songs of Central Australia (Sydney: Angus and Robertson, 1971). Hill, Broken Song: T.G.H. Strehlow and Aboriginal Possession.
\textsuperscript{58}Cowan, Aborigine Dreaming: An Introduction to the Wisdom and Thought of the Aboriginal Traditions of Australia.
\textsuperscript{60}Cowan, Aborigine Dreaming: An Introduction to the Wisdom and Thought of the Aboriginal Traditions of Australia. viii
\textsuperscript{61}K. Langloh Parker, The Euahlayi Tribe (Archibald, Constable & Co., 1905). 117
Habel reported that the Dreaming is reflected in a special way in the land.\textsuperscript{62} Dreaming legends right across Australia speak of ancestors who could, in the beginning time, change at will from human form to their own specific totem species. There are also legends about how a myriad totem ancestors, sometimes in human form, sometimes not, journeyed across the continent, directly affecting the course of aboriginal history in mysterious ways. At times the legendary tracks of the ancestor spirits criss-crossed. Each of them left behind living spirits and symbols, so that every aspect of the world of nature - fauna, flora and rocks – was regarded as an emanation or expression of some particular group's totem or spirit. Tribal groups took – or rather, were given by the ancestral spirits – a particular totem each. Almost always these were and are animals or birds. Each group felt an unshakeable affinity with its totem species which welded the group to its own territory, where the totem ancestors were believed to be always present, guarding and guiding. By belief in totems aboriginals were formed in identity: as belonging to a particular tribal group, to a particular part of the continent, to nature and to the spirit world. It was accepted that ancestor spirits had worked to prepare and hallow their given area for the generations to follow, and that these spirits were there, ready to protect and help the people of each new generation. Tjuringa stones united individual spirits with a specific guardian ancestor. Many aboriginal men and women today carry tjuringa stones at all times.

\textit{Living in and Affecting Murray-Darling Basin Country}

Having described central elements of the Aboriginal worldview pre-European settlement of particular interest for an ecotheologian it is now time to pay attention to how Aborigines lived in the Murray-Darling Basin, and how they affected Country, particularly its waterways. Despite commonalities this of course varied in different parts of the Basin. Charles Sturt and European explorers who followed his party discovered Australian Aborigines living along the River Murray and its reaches in the early decades of European settlement. Reports from explorers indicated that the Aboriginal population visible from the rivers increased as they progressed

downstream, and that downstream from the junction of the Murray and Darling Rivers the country was relatively heavily populated. In sharp contrast to the situation in drier regions of South Australia, population density of Aborigines along Murrundi was as high as one person to every kilometre of river frontage.

Humans population density tends to be positively correlated with wealth of natural resources which in turn depends upon the supply of fresh water. The lower Murray River and its surrounds provided an abundance of animal food as diverse as waterfowl, mussels, fish, possums and tortoises. Similarly diverse, plant foods included the fruits of the Australian peach, or quandong, pig-face and the native apple. With access to a permanent water supply, Aboriginal people in this region lived a relatively stable existence. Exploitation of the riverine environment by Aboriginals appears to have been seasonal, both in the fishing methods used and the numbers able to be supported by these activities. Fish and crayfish featured in the diets of large groups of people in the area at certain seasons of the year, while at other seasons numbers living on the river thinned noticeably. With annual flooding the swamps filled and river flats were inundated. Large groups lived by netting fish and crayfish, spearing fish, netting waterfowl, and eating rootstocks of aquatic plants. Large populations remained by the rivers while the water levels dropped and billabongs flowed back into the mainstream. Fish traps built as weirs across the channels yielded high catches. This method of catching fish was also used in reverse, to trap fish leaving the main stream into billabongs, carried by floodwaters. Once river levels subsided different fishing methods were used. For example, fish were speared, often underwater rather than from canoes, women scoured shallow pools with moveable fish weirs, and in smaller water holes poisons were used.

Faunal remains from excavations by Hale and Tindale, and Mulvaney showed that even when the Aborigines camped on the rivers they hunted

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63 Murrundi is the Aboriginal name given to the section of the Murray in South Australia.
land animals and brought them back to the shelters. These included kangaroos, wallabies, emus, large birds, dingoes, platypuses, wombats, koalas, echidnas and possums. This indicated an ability to adapt to prevailing seasonal conditions, the size of game hunted, its habits, and the number of people able to be employed in hunting or fishing expeditions.

A growing body of evidence suggests that a kind of settled village life existed amongst Aboriginal people in this region of Australia. This evidence includes remains of substantial winter shelters constructed from close-set logs, waterproofed using grass and clay, and challenges the long held view that all Aborigines were exclusively nomadic hunter-gatherers. There were along the lower Murray River plentiful raw materials for the provision of shelter, clothing, tools, weapons and transport. The forests surrounding the River provided bark for canoes, which assisted with hunting and transportation along the river. Further evidence exists of specialised tools for hunting and fishing, and that the crafts of basketry and woodcarving were highly developed.

Though longer than the Murray River the Darling has for the past 6,000 years been a less reliable and a less abundant water supply. At present it provides only some 12% of the Murray’s flow downstream of the confluence at the town of Wentworth. Nevertheless, the Darling so defined the lives of the Aborigines living along much of its length that they named themselves for it. The Barkindji66 people were predominant around the lower Darling, which they called the Barka, Barkindji literally meaning "Darling folk".67 They were the descendants of, or at least the modern inhabitants of country lived in by ‘Mungo Man’, several skeletons first discovered by Professor Jim Bowler in 1967 and onwards at Lake Mungo, one of the Willandra Lakes system, and the subject of intense research and speculation ever since. Remains of human settlement found at the Willandra Lakes indicate that human habitation goes back at least 40,000 years, at

66 Also spelt Paakanji or in some other transliteration of the Aboriginal word
which time the lakes were full of fresh water, with abundant supplies of perch and Murray cod. The surrounding landscape, then much more fertile than now, provided browsing for megafauna which also contributed to the diet of the Aboriginal people living by the lakes. However, between about 26,000 and 15,000 years ago the lakes slowly dried out and the population dwindled accordingly. Jim Bowler, the geologist who discovered the original Mungo Man, describes the Willandra Lakes and the story of the Aborigines there as an important window on Australia’s past, and an indicator of the effects of climate change, not least upon human habitation.68

The homelands of the Barkindji extended a great distance upstream from the confluence of the two great rivers in what is now the Riverina Bioregion, northward through the Murray Darling Depression Bioregion and into the Darling Riverine Plains Bioregion beyond Wilcannia. Barkindji homelands were even known to extend into Queensland via the Paroo River due to the friendly relations with the Parundji people of the Darling Riverine Plains Bioregion.69

The home of the Parundji was the banks of the Paroo River, although unlike the Murray and Darling River groups, this people are thought not to have used the rivers for transport in bark canoes.70 The mid-Darling was traditionally occupied by the Naualko people on the west bank near the Warrego junction in the Mulga Lands Bioregion. In his centenary history of the Paroo Shire Thom Blake wrote of the many, ingenious uses to which fire was put by Aborigines. These included the formation of rock wells, in stony ground on the inclines of hills well away from permanent waterholes:

“The hole was dug out of the rock by first lighting a fire on top of the ground; then water was quickly poured on the ground causing sudden contraction; this action was followed by the cracking of the rock with a stone axe. This procedure was repeated over and over

68 J.M. Bowler, Lake Mungo: Window to Australia’s Past (Melbourne: University of Melbourne, School of Earth Sciences, 2002).
again...The holes were not usually placed randomly but are found about 10 – 12 miles apart – the equivalent of two hours walk.”

In a number of properties around the Cunnamulla district there are well-preserved stone arrangements that were most likely used for ceremonial purposes, indicating a well-developed cultural and religious life. Throughout south-west Queensland evidence points to Aboriginal camp sites. This evidence includes several locations at which gunyahs were still standing probably fifty years after they were built, and scarred trees from which bark and wood had been taken to provide material for canoes, shelters, weapons, shields or implements. One such tree, situated at the confluence of the Warrego River and a small creek, was possibly used to provide material for a canoe to take family and possessions across the river in flood. This has been suggested despite the Parundji, as mentioned above, being thought not to use the Paroo and its tributaries, just to the west of the Warrego, for transport by canoe.

If such an escape across floodwaters was attempted, the escapees would have both had to deal with another type of fear – that of Moondagutta, a water creature of unknown size and shape that was thought to live in deep waterholes along the river – and they would have re-enacted Moondagutta’s own flight from floodwaters, the process by which the Warrego was told in story to have been formed. The tracks Moondagutta made later became the river, and he was able to burrow deeper into sandy stretches, causing the formation of waterholes, where he left his young to keep guard.

Further up the Darling River from where the Warrego joins it near Bourke and Brewarrina, the Ngemba people occupied its east bank in the Darling Riverine Plains, while the Baranbinja and Ualarai people lived on its west bank in the Mulga Lands Bioregion. Because the Darling River was a less reliable water source than the Murray the use of fishing equipment was more elaborate. The fish-traps built by the Ngemba in the river near Brewarrina provide a good example of the innovations by the local

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Aboriginal people in water management, as does the stone dam built by Aborigines just downstream of the Darling-Warrego River junction.

A little to the south-east the Macquarie Marshes, near the junction of the Macquarie and Darling Rivers, provided a rich home for Aborigines. The main tribe inhabiting the lower Macquarie River was the Wailwan people, whose way of life Masman & Johnstone have described in some detail.  

Judith Furby reported that:

> "Preliminary studies of the Cuddie Springs site undertaken in 1991 produced radiocarbon determinations indicating that there was a continual presence of Aboriginal people at Cuddie Springs from > [sic] 30,000 b.p. through to the contact period."  

The Wailwan were often described as being “strong and healthy with placid natures.” Their staple diet included tubers of abundant aquatic plants from the Marshes, which women obtained, along with vegetables, reptiles, fish, shellfish and small mammals. Men hunted larger animals. Amongst other game, fish, echidnas, possums, mussels, crayfish, kangaroos and emus were sought. There were specific methods (sometimes several) for catching each of these. Larger animals were cooked in oven pits.

In general the Aborigines of the Murray-Darling Basin enjoyed a varied diet. Masman and Johnstone reported that there is some evidence that they did not need to work as long as Europeans to obtain this. Of the tubers the cumbungi was considered the most important plant food in the Murray-Darling river system. Other valuable tubers included: water ribbons, nutgrass and club-rushes. Two summer grasses important in the diet of

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72 Masman, *Reedbed Country: The Story of the Macquarie Marshes.* chapters 2,3,4 & 5, see esp. tribal map, p.8
73 Means “greater than”, or in this case “longer ago than”.
74 b.p. means before present
75 Judith Furby, "Megafauna under the Microscope" (University of New South Wales, 1995), 35
76 Masman, *Reedbed Country: The Story of the Macquarie Marshes.* 18
78 Typha
79 *Triglocchin procera*
80 *Cyperus bulbosus*
81 *Bolboschoneus*
the Wailwan people were native millet\textsuperscript{82} and woollybutt\textsuperscript{83}, known more commonly as ‘umbrella grass’ and ‘neverfail’ respectively. Pigweed\textsuperscript{84}, found after good rains on the flood plains, was an excellent source of nutrient seed. In nutrition tests done by Sydney University, pigweed seeds outscored wheat and rice on almost every nutrient. Nardo\textsuperscript{85}, abundant on the floodplains, was an important food in dry times. Among the many grasses and berries that would have been processed or eaten straight from the bush are ruby saltbush\textsuperscript{86} and pigface\textsuperscript{87}. One method of processing was to grind seed into flour from which cakes were baked. Grindstones called \textit{dayoori}, and handed down from generation to generation\textsuperscript{88}, were used for this purpose.

Just as the Aborigines discovered a great variety of foods they found herbal remedies for many common medical conditions. The quinine bush\textsuperscript{89} was used to treat fevers, crushed flowers of a small leaf climber\textsuperscript{90} may have relieved headaches, those with toothache chewed the leaves of the common wilga\textsuperscript{91} and cavities in teeth could be filled with leopardwood gum.\textsuperscript{92}

To complete this summary, clockwise tour of some major Aboriginal tribes and groups within the Murray-Darling Basin we return southwards to one of the largest, the Wiradjuri. As with each of the other tribes mentioned the Wiradjuri were a people of their waterways, upon which they depended for their quality of life, and around which they developed much of their spirituality. Iris Clayton, a member of the Wiradjuri, entitled her history of her people \textit{Wiradjuri of the Rivers and Plains}.\textsuperscript{93} Clayton and her co-author Alex Barlow define the 60,000 square kilometres of Wiradjuri country by their relationship to three major rivers, the Wambool (now known as the Macquarie), the Kalar (Lachlan) and the Murrumbidgerie (Murrumbidgee):

\begin{itemize}
\item \textsuperscript{82} \textit{Panicum decompositum}
\item \textsuperscript{83} \textit{Eragrostis eripoda}
\item \textsuperscript{84} \textit{Portulaca oleracea}
\item \textsuperscript{85} \textit{Marsilea drummondii}
\item \textsuperscript{86} \textit{Enchytraena tomentosa}
\item \textsuperscript{87} \textit{Carpobrotus modestus}
\item \textsuperscript{88} Langloh Parker, \textit{The Euahlayi Tribe}. 117
\item \textsuperscript{89} \textit{Alstonia constricta}
\item \textsuperscript{90} \textit{Clematis microphylla}
\item \textsuperscript{91} \textit{Geyeria parviflora}
\item \textsuperscript{92} Masman, \textit{Reedbed Country: The Story of the Macquarie Marshes}.
\item \textsuperscript{93} Clayton, \textit{Wiradjuri of the Rivers and Plains}.
\end{itemize}
“Along each of these rivers there are many places that are both spiritually and historically important to the Wiradjuri people”\textsuperscript{94}

Among over thirty separate clan groups among the Wiradjuri the Narrungdera lived along the Murrumbidgee River. Clayton and Barlow report that evidence suggests a large population for this clan of at least 2,000 people prior to the arrival of Europeans, subsequently reduced greatly by disease, then warfare. Narrungdera country provided such a reliable food supply that this clan was not truly nomadic. In Bundidgerry Creek a fishery too elaborate to be the work of nomads trapped eels and fish in a labyrinth of artificial channels, dams and reservoirs. Great numbers of animals reduced the need to travel, and the Narrungdera harvested grain, gathering green grass, stacking it until dry, then threshing and winnowing the seed, and storing it in stitched skin bags or wet grinding it into flat cakes for cooking in hot bark ash. Possibly only seasonal change, hygiene, political or social events or long droughts prompted the Narrungdera to shift camp. Like Masman and Johnstone, Gammage estimates that the Narrungdera needed work only perhaps four hours a day for food, shelter and relaxation, far less than European Australians did both in the nineteenth century and still today.\textsuperscript{95}

Further evidence of the Wiradjuri’s relative settled way of life is provided by the many varieties of scarred but still living eucalypts ‘harvested’ to produce bark canoes (from yellow box gums), shields, dishes, bowls, throwing sticks, clubs and a variety of trade items such as blocks of hardwood, trimmed but not carved. These trees also testify to a culture which did not kill trees en masse for their purposes, but which obeyed the principles of the Law described above. Trees were also involved in the spiritual life of the Wiradjuri: trees near the graves of important Wiradjuri men were also carved with their distinctive emblems.

Still further evidence of a settled way of life that allowed for the development of technology is seen in the Wiradjuris’ cloaks, sewn from the

\textsuperscript{94} Ibid. 27, and Peter John Read, "A History of the Wiradjuri People of New South Wales 1883 - 1969 " (Australian National University, 1983)., xi, xviii
\textsuperscript{95} Gammage, \textit{Narrandera Shire.}, 19
skins of up to seventy possums with thin strips of sinew from the legs of kangaroos or with leather. Having met senior Wiradjuri men when he travelled across the Blue Mountains in 1815 in order to inspect the new road Governor Macquarie wrote:

“They were all clothed with Mantles made of the skins of O’possums which were very neatly sewn together and the outside of the skins were carved in a remarkably neat manner.”

The carvings on the cloaks indicated ceremonial garb, which, like the burial carvings on trees indicates a ceremonial and spiritual life. Speaking generally of Aboriginal culture across Australia Stockton argues that Aborigines “live for ceremony”. The purpose of celebrations in Aboriginal culture was and is generally the same as in Euraustralian culture – social and religious – but Stockton writes vividly of the vibrancy and communal spirit of Aboriginal celebration.

Within each Wiradjuri clan each family was responsible for parts of the clan’s land, in particular for any religious or economically valuable area, such as ochre or stone mines. The most senior male of each family, judged by knowledge and initiation into the law and spiritual power, represented the family at clan gatherings and at major meetings. Such meetings of the separate Wiradjuri clans were called Burbungs. At Burbungs, ceremonies, especially initiations, were held and important matters of business were dealt with by the Wiradjuri council. This council, which could also meet at other times as necessary, comprised the elected headman of each clan. Initiated men could listen to its democratically conducted deliberations, but the council’s power, backed by the law and the enormous authority their knowledge gave the Wiradjuri elders, was absolute. Indeed it was believed that Baiame, the great creative being of the Wiradjuri, was present at Burbungs, and that he presided over the ceremony that honoured him and recalled in the performance by clans of song cycles how he had created the world.

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96 B. Elder, Blood on the Wattle (Sydney: Child & Associates, 1988), 44
98 Clayton, Wiradjuri of the Rivers and Plains., 46-7
99 Gammage, Narrandera Shire., 15
“Men of High Degree”, found among many Aboriginal groups in Australia, were selected from childhood to be initiated into the highest level of knowledge of both the law and spiritual matters. During an apprenticeship of some twenty years’ duration, that included testing of their ability to keep secret the knowledge they were given, they developed great expertise in medicine, and were called on to cure seriously ill people. However, they were also feared because of their great spiritual power, which they used to punish people. To become such a spiritual leader among the Wiradjuri boys were chosen and trained by men who were themselves already of high degree, usually the boys’ own fathers, to make their journey to Baiame. When Baiame informed the father/master in a dream, he would take the young initiate to Baiame’s camp, drawing him by a string. There they would join the many children of Baiame and other people in the form of birds and animals. After this experience it was believed that the initiate could change at any time into a bird or animal, or a stone or tree, or to become invisible. Among other powers initiates were given in response to this experience included the ability to see the spirits of the dead and to produce magical crystals from their bodies.

The following quote from Ossie Ingram, another modern Wiradjuri, describes the intimate link between seen and unseen in the lives of this people, and indicates that they believed that they were dealing with more than one powerful being in the unseen realm. It also returns us to consider the environmental implications of Lynn White’s statement that

“…the victory of Christianity over paganism was the greatest psychic revolution in the history of our culture”:

“In that waterhole we were looking at this morning, Marngi, there is a wawi, a river god or bunyip or whatever you like to call it, and he supplied fish, or whatever the Aborigines in the old days required for a meal. Only chosen people were allowed to go down to Marngi and fish. If you came from another place you had to be properly introduced to the wawi, tell him who you were, where you came from, what you were doing there, whether you were related or just a friend. Until you were recognized as one of the older people, say about fifteen or sixteen, you couldn’t go down. Then one of your elders would introduce you and give you the ritual of the river. You learned what to say to the waterhole: tell him who you are, and ask him for the fish. You would do that in Wiradjuri, but I have to say some things to him in English. When you have enough fish the
bubbles came up or a fish splashed or a wave appeared in front of you and that meant you were to go home. He’s still at the channel bridge up there. That’s the rainbow snake, a big long feller all the colours of the rainbow with a mane down his neck – same feller as the wawi.”

Has not believing in the spirits of the rivers removed from Euraustralians inhibitions against abusing rivers?

There is, however, one “this-worldly” issue of aboriginal land management so controversial that it needs to be addressed – fire. The Aborigines’ extensive use of fire stick farming has perplexed European settlers. Thom Blake wrote,

“A second popular assumption about the Aboriginal is that he lived in complete harmony with nature. Again, this assumption is incorrect. Granted, there existed a very deep spiritual relationship with the natural environment, but nevertheless he was continually upsetting the ecological balance for his own ends. This point is no better explained than with the manner in which the Aboriginal made use of fire.”

Deborah Bird Rose, however, argued that

“within the past two decades there has been a rapid escalation in scientific analysis of Aboriginal fire management regimes.”

She is convinced that fire stick farming, far from “upsetting the ecological balance for his own ends”, was a form of land management that can be used today. Rose cited April Bright:

“‘Burn grass' takes place after the wet season when the grass starts drying off. This takes place every year. The country tells you when and where to burn. To carry out this task you must know your country. You wouldn't, you just would not attempt to burn someone else's country. One of the reasons for burning is saving country. If we don't burn our country every year, we are not looking after our country.”

101 Blake, Cunnamulla: A Brief History of the Paroo Shire., 13
102 Rose, Nourishing Terrains: Australian Aboriginal Views of Landscape and Wilderness.
103 A. Bright, "Burn Grass," in Country in Flames; Proceedings of the 1994 Symposium on Biodiversity and Fire in North Australia, ed. Deborah Bird Rose (Canberra & Darwin: Biodiversity Unit, Department of the Environment, Sport and Territories, and the North Australia Research Unit, 1994), 59
So the perplexity of the early European explorers at the numerous, large fires itself contradicted the doctrine of *terra nullius*, and anthropologist Elkin’s phrase that the Aborigines were

“parasites on nature…absolutely dependent upon what nature produces without any practical assistance on their part.”

Rose argued, rather, that

“to the extent that Aboriginal burning is responsible for the maintenance of a diversity of ecosystems, it is also responsible for a maintenance of biodiversity in Australia”,

and listed twenty uses to which Aborigines put fire.

In summary, the Aborigines of the Murray-Darling Basin clearly affected the environment in which they lived. Land was

“a cornerstone of traditional religion, the physical link between living humans and all that is unseen and eternal in their spiritual world.”

Therefore they affected Country in both the seen and unseen realms. In the seen realm they successfully hunted its animals and birds for food and clothing, fished in its waterways, harvested its plant life for food and in order to make implements and shelters and mined its ochre and stone. On land they used fire for a many purposes, and to such an extent that one might almost say that they as custodians of country, and the country they kept lived in a symbiotic relationship. At the very least it must be said that their use of fire affected country. Similarly, their building of elaborate fish traps and even weirs affected the nature and flow of the Basin’s waterways.

For the Aborigines, however, their real means of affecting Country lay in the unseen realm. Convinced that they and Country were one through their participation in totems through which they *became* their respective ancestral heroes who in their turn had *become* various aspects of Country they maintained Country by participation in ceremonies, travelling the ancestral

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106 To which Blake’s splitting and hollowing out of rock to make watering stations can be added.

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routes, singing the songlines, maintaining the paintings and the like. In the final section of this chapter I shall explore what implications this has for a Christian spirituality of land and waterways.

**Gifts of Presence**

While over 200 years of cohabiting in the same continent have given Euraustralians much opportunity for encountering Aboriginal spirituality, by and large we still do not comprehend the “philosophy” underlying Aboriginal society. To do so requires a paradigm shift most Euraustralians have not been prepared to make. Yet that philosophy is a spirituality of presence Eugene Stockton calls a “the Aboriginal Gift”. It provides a lens through which to view Christian theology in a fresh way, and a way of finding ecologically-friendly resources within the Christian framework. The central elements of the Aboriginal worldview I have examined all help Christians to think about our presence and the presence of God in creation. To conclude this chapter I shall introduce the Aboriginal concept of “Dadirri” and “intersubjectivity”, and discuss how the Aboriginal understanding of the unseen realm compares with Christianity’s.

**Dadirri**

In 1986 Pope John Paul II addressed Aborigines from all over Australia in Alice Springs:

“For thousands of years this culture of yours was free to grow without interference by people of other places. You lived your lives in spiritual closeness to the land, with its animals, birds, fishes, waterholes, rivers, hills and mountains. Through your closeness to the land you touched the sacredness of man’s relationship with God, for the land was the proof of a power in life greater than yourselves…”

These words launched Eugene Stockton into a discussion on Aboriginal vis-à-vis ‘traditional’ mysticism. He discussed Deborah Bird Rose’s thoughts on “intersubjectivity”, to wit that

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110 Ibid., 101 (Researcher’s italics)
“in the cosmos all parts are alive, conscious and paying attention to each other.”

This suggests to Stockton that

“personal mysticism is part of responsible living and is itself responsible activity to help propel the mystical process throughout the whole cosmos, but from a personal centre.”

Rose has described Aboriginal religion as a religion of immanence

“based on a fundamental wholeness on which each singular entity is a manifestation. There is no Other; there are no ‘usual barriers’ to be transcended. I understand Yarralin people to be saying that there is only Us: this world, these manifestations of life. Spirit moves through us all; to be at One is to be powerfully at home. Mysticism in this tradition is an apprehension of the world in an intensely heightened awareness of intersubjectivity. Self is not incorporated into the Other, but is totally engaged with others.

Stockton wondered, consequently, whether there is such incompatibility between a religion of immanence, such as Aboriginal religion, and a religion of transcendence, such as Christianity, that it is impossible for the mysticism of one to affect the mysticism of the other. He thinks not. Certainly, as Rose argued, mysticism in Christianity generally takes the form of transcending ‘the usual barriers’ to the Other. However, reaching out to a transcendent God through divine immanence in the environment was not unknown to medieval Germanic and early Celtic mystics. Besides, in the incarnation of Christ and in the sacraments the transcendent God was and is made immanent.

From this ancient, silent watercourse of Aboriginal spirituality the Aboriginal Christian Miriam-Rose Ungunmerr offered the gift of dadirri to both the Church and the Nation. Ungunmerr defined dadirri as ‘an inner deep listening and quiet still awareness’.  

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112 Stockton, The Aboriginal Gift: Spirituality for a Nation., 102
113 Ibid., 102
Essential to \textit{dadirri} is the quiet stillness and the waiting trained into Aborigines by thousands of years of paying attention to Country:

“Our Aboriginal culture has taught us to be still and to wait. We do not hurry things up. We let them follow their natural courses – like the seasons. We watch the moon in each of its phases. We wait for the rain to fill our rivers and water the thirsty earth. When twilight comes, we prepare for the night. At dawn, we rise with the sun…. When I experience \textit{dadirri}, I am made whole again. I can sit on the river bank or walk through the trees; even if someone close to me has passed away, I can find my peace in this silent awareness….We wait for God, too. His time is the right time. We wait for him to make his word clear to us. We don’t worry. We know that in time, and in the spirit of \textit{dadirri} (that deep listening and quiet stillness), his way will be clear…."

This kind of “paying attention” is reminiscent, yet again, of McFague’s “looking with a loving eye”. Yet \textit{dadirri}, as Miriam-Rose Ungunmerr and Eugene Stockton describe it and offer it to the nation, goes deeper than merely looking. Freed from the western dualities of heaven and earth, seen and unseen, and from the tyranny of linear time, \textit{dadirri} means waiting for as long as is necessary and employing all of the senses to perceive both the seen and the unseen realms. Trained in the realm of ecology practitioners of \textit{dadirri} are better equipped to perceive the unseen spiritual realm than those who merely see and analyse. The whole of western culture, not least the churches, needs to receive this gift.

\textit{Immanence and the Unseen Realm}

Deborah Bird Rose’s insights regarding the immanence of Aboriginal religion and the transcendence of western Christianity may also be a great gift for Euraustralians, and therefore for the world. There is a delicate theological discussion to be conducted concerning monism and pluralism, pantheism and panentheism, but Rose’s comments lead naturally to Christian categories as we consider theologically the Yarralin concepts not only of our human oneness with the rest of creation and the nature of intersubjectivity, but of the Spirit who moves through us all. To “see” and “hear” the Jamison Valley and beyond in the way I described in the Introduction to this chapter, and the Aboriginal understanding of the “hand-

\footnote{\textit{Ibid.}, 104-5, 179-80}
in-glove” operation of the seen and unseen realms brings a fresh perspective to the operation of God’s Spirit in creation for dualistic western Christians.

In Chapter 9, in the context of developing a “theology of rivers”, I shall return to appropriate both of these gifts.
Part II
Looking and Listening:
An Ecotheological Reading
of how European Settlers have
affected the
Murray-Darling Basin’s
Waterways
Chapter 5
“Conquering” the River Realm
An ecotheological reading of
how European settlers first *used*
the Murray-Darling Basin’s waterways

*Introduction*

The purpose of this and the following chapter is to read ecotheologically how and why Euraustralian explorers and settlers of the Murray-Darling Basin first used, then changed its waterways. One cannot dissociate waterways from their catchment areas, so in these chapters I shall tell the story of European exploration and settlement of the Basin, reaching in this chapter the point when river transport was being superseded by the burgeoning rail network. I shall also report on how ecologically this colonization has affected the Basin, and particularly its waterways. To understand why this happened some background regarding how and why the Colony of New South Wales was begun will be necessary, and to ground this story theologically an assessment of the Colony’s religious character will be made.

*The Colonial Context*

According to church historian Stuart Piggin,

> “Three theories are usually advanced by historians to explain the sending of the First Fleet to Botany Bay…the ‘convict-dumping’ theory,…the Empire and defence argument [to compensate for the loss of America, serve as a base for the penetration of the Pacific and as an alternative sea-route to China]…and that the colony was set up primarily as a labour camp for young industries…thus laying the economic foundation of a new Empire in the Pacific.”

Each of these reasons implied an expansion of the colony, but what lay west of the Blue Mountains remained a mystery for the European settlers for 25 years after they had established the colony of New South Wales on the

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shores of Port Jackson in 1788. For several reasons it became imperative that this mystery be solved. These had to do with finding larger areas of land on which to produce food to sustain the colony and agricultural produce, notably wool, for export in the face of the recurring, severe droughts that we know today as El Niño events; and the colonists’ need, both over against other European nation states\(^2\) with imperial ambitions, and the Aboriginal tribes who already inhabited the land, to legitimize their claim to the continent.

The British quickly discovered how different Australia’s ecology was from their own. From the beginning, procurement of food at Port Jackson was a problem. Early food harvests failed, forcing the colonists to rely on the two years’ supply of food they brought with them. By early 1790 the settlement was faced with starvation and was only saved by the arrival of a large supply of stores on *Lady Juliana* with the Second Fleet. Then James Ruse, a convict who had been granted a plot of land on richer soil at Rose Hill, Parramatta, managed, by dint of prior farming knowledge and slash and burn methods,\(^3\) to become self-sufficient in the production of food.\(^4\) That was fortunate, for the infant colony was immediately afflicted by drought, perhaps due to an El Niño event. Governor Arthur Phillip noted that:

> “from June (1790) until the present time so little rain has fallen that most of the runs of water in the different parts of the harbour have been dried up for several months, and the run which still supplies this settlement is greatly reduced…Our crops of corn have suffered greatly from the dry weather.”\(^5\)

Upon his release in 1794 Ruse acquired land by the Hawkesbury River which he farmed successfully until, in an event the Europeans would quickly learn was not unusual for Australia, his crops were destroyed by flood.\(^6\) Thus, within the first 6 years of settlement, the newcomer most

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\(^2\) Particularly France.
\(^3\) By burning the vegetation on his land, then turning the ashes into the soil.


successful at farming had become acquainted with three essential elements of the Australian landscape: fire, drought and flood.

It is a tribute to the ingenuity and industry of its inhabitants that the colony soon succeeded beyond its official purpose. Governor Phillip was succeeded by a period of erratic military rule during which officers of the New South Wales Corps enriched themselves by means of a rapidly growing trade with the outside world. The ambitious John Macarthur and his wife Elizabeth, aided by convict labour, greatly improved the practice of farming in the new land. With the colony becoming self-sufficient in food the entrepreneurial Macarthurs crossed merino sheep with the Bengal and Afrikaner Fat-Tail strains from South Africa⁷ to produce a strain that proved well-suited to the Australian environment. Macarthur soon proved that the grasses on his ten thousand acres of land at Cow Pastures⁸ so fed the merino sheep that its wool could compete in quality and price with that from Spain and the German states. The pattern was set for Australian primary industry to provide the raw materials for industrial processes overseas. Australian wool supplied English industry. Until well into the twentieth century Australia was said to “ride on the sheep’s back”. The numbers of sheep in the colony grew rapidly, and needed more and more land to feed them. Hence the sheep industry was one of the major factors that drove exploration across the Great Dividing Range and into the Murray-Darling Basin.

Another factor motivating exploration had to do with Piggin’s second and third theories as to why Great Britain established the colony, that is, with British imperial ambitions. The British exploration of and settlement in the Murray-Darling Basin must be seen within the centuries-old context of European colonisation. The British felt the need to legitimize their claim to the continent vis-à-vis both the other European colonial powers with whom they were in competition and the Aborigines who already lived there. Britain was by the late eighteenth century engaged in world-wide

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⁸ Later renamed Camden for Earl Camden, the English Secretary of State whom Macarthur had convinced of wisdom of this venture.
competition with other European colonizing powers, particularly France, to acquire territory, wealth, power and status. In particular, the British sought to expand their Empire into the south Pacific and to protect their trade routes to the Far East. So closely did these two superpowers track each other that the First Fleet of colonists were just leaving Botany Bay, where they had been directed to start the colony by the British authorities, to found their permanent settlement at the nearby and much more suitable Port Jackson when the small, exploratory French force led by Jean-François de Galaup, Comte de La Pérouse arrived. One of the motivations for spreading out over the continent was to forestall their European rivals.⁹

David Day¹⁰ argued, however, that the moral need to justify the process of taking the land from the Aborigines was a further factor that powerfully formed the colonists’ character into that which is peculiarly Australian. While noting Geoffrey Blainey’s argument that “distance has shaped the development of Australia”¹¹, Day also wrote that “others have used class, race or, more recently, gender as ways of reinterpreting Australian history”, and took issue with Manning Clark’s thesis, argued in History of Australia, that European settlement can be interpreted in terms of “the establishment of European civilization in a barbaric wilderness”.¹²

Instead, Day asserts that:

“One of the most important forces in the shaping of human history has been the constant movement of peoples across the face of the world onto the lands of others and the subsequent, prolonged process of asserting claims of legal, effective and moral proprietorship over those supplanted lands. An examination of the ways in which this process has been played out across Australia over the past 200 years is fundamental to understanding the ways in which European society

¹⁰ Ibid. 2
¹¹ Advanced in Geoffrey Blainey, The Tyranny of Distance (Sydney: Pan Macmillan Australia, 2001).
¹² Day, Claiming a Continent: A New History of Australia, 2
has gradually been shaped until it has come to comfortably occupy that island continent.”

It is now well accepted that colonization, and the way it played out in the colony of New South Wales and the Murray-Darling Basin in particular, have major implications for social justice vis-à-vis the Aborigines. However, colonization has, equally, implications for how the colonists treated and affected the environment they colonized. The effects of British colonisation of the Murray-Darling Basin shows how closely linked issues of social justice and environmental justice, liberation theology and ecotheology are.

The desire to forestall colonial rivals, secure trade routes and food supplies, develop exports and to justify and consolidate their occupancy of the continent were all factors motivating the exploration, settlement and use by Euraustralians of the Murray-Darling Basin. So was the need to deal creatively with a growing population of convicts and ex-convicts, many of who decided that they preferred this new world to the old. None of these factors could be attributed to Christianity. The settlers regarded themselves, however, as a Christian society. They would certainly have been viewed as such by Lynn White. What role did Christianity play in the colonization of the Murray-Darling Basin?

**Christianity’s Role in the Murray-Darling Basin**

Just as Aboriginal belief was diverse but contained a number of common elements Hilary Carey has identified three distinct streams of Christian faith among the first colonists in Sydney: Establishment religion, Evangelicalism and Catholicism. These categories agree roughly with Manning Clark’s descriptions of the Enlightenment, Protestantism and Catholicism. Establishment religion tended to follow the Deist theology popular at the time, which Protestant Evangelicalism was to some degree in reaction to. Adherents of each of these streams tended to relate to the world around

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13 Ibid. 1-2
them, including the physical environment, in somewhat different ways. I shall now read each of these traditions ecotheologically.

The Enlightenment & Deist Faith

Among those who identified with the Established Churches of England and Scotland many were influenced by the Enlightenment, and by Deism. For example, Manning Clark described Governor Phillip as being one of the “worshippers at the shrine of ‘cool reason’…in many ways a fine flower of the eighteenth century, a common-sense man with a contempt for the consolations of religion but, at the same time, a belief in the established church as a means to promote the subordination of the lower classes of society.”

Clark found that:

“The other military and civil officers [of the colony] shared [Phillip’s] common sense and his disdain for the consolations of religion, while sharing his view that the Protestant religion and British institutions were the finest achievements of the wit of man for the promotion of liberty and a high material civilization. These features distinguished the Protestant states of Europe from the Catholic states, which in their eyes were enslaved by arbitrary despotisms and a superstitious religion. So they mocked their religion in private as a false mythology, while in public they supported it for its social utility.”

It was from this class of English society that the decision to establish a colony was made and its purposes were determined. Phillip was instructed to found the settlement; cultivate the land; distribute the convicts for the purposes of the procurement of food; explore the coast; open an intercourse with the natives, cultivate their affections, enjoining all his subjects to live in amity and kindness with them; enforce a due observance of religion and good order among the inhabitants of the colony; and reward convicts for good behaviour and the discharge of their penalty with emancipation and land to farm.

Amongst the ruling class there was a benevolent assumption that they knew best in respect of the convicts and those in lower classes, the land and the Aborigines. Religion was an instrument that aided good government. The

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16 Ibid., 12
17 Ibid., 13
18 My emphasis.
Enlightenment *credo* that human reason and common sense determined right and wrong ruled in the colony. Although they helped to build a peaceful, prosperous society these attitudes were more in line with the ideals of the Enlightenment than the Gospel of Jesus Christ. There is little doubt that the Established Churches of England and Scotland had to a considerable degree become tools of the Enlightenment and the English ruling class.\(^{19}\) In particular, the Churches were implicated in maintaining order in the colony, and were complicit in a system that was brutal, reflecting the severity of the criminal justice system and the undeclared class war that raged in England at the time.\(^{20}\)

Whitehall’s interest was in the survival of the colony, not the strange Australian environment. British officials instructed Governor Phillip to preserve the livestock the Fleet was carrying so that they might become the basis of new herds in Australia.\(^ {21}\) No comparable instructions were given in relation to Australia’s native flora or fauna nor, apparently, thought given to the effects the herds might have on the native biota. Similarly, Whitehall ordered Phillip to preserve timber fit for naval purposes, not out of concern for conservation. Nevertheless, the colonial rulers were apparently not completely indifferent to native environments. For example, Richard Grove has described ‘Green Imperialism’ on French Mauritius and British St Vincent. Yet Tim Bonyhady has argued that compared with this, Sydney’s first colonial officials, products of the Enlightenment and a Deistic form of Christianity, acted with remarkable speed to protect and conserve the environment, and that

“Australia – perhaps more than anywhere else – began with a form of colonialism alive to the importance of environmental protection and planning.”\(^ {22}\)

\(^{19}\) Alister E. McGrath, *The Re-Enchantment of Nature: Science, Religion and the Human Sense of Wonder*, 1 ed., 1 vols. (London: Hodder & Stoughton, 2002). Although he did not address the Australian situation Alister McGrath’s thesis in this book is that the Enlightenment, not Christianity, is the chief environmental culprit. My question to McGrath is to what extent did the Enlightenment emerge from western Christianity?

\(^{20}\) Hughes, *The Fatal Shore: A History of the Transportation of Convicts to Australia, 1787 - 1868*. Samuel Marsden, “the whipping parson”, was notorious for this dual role.


\(^{22}\) Bonyhady, *The Colonial Earth*, 5
The Colony’s first environmental laws were predictably utilitarian, designed to ensure that the natural environment provided an enduring supply of food, particularly for when imported supplies ran short, clean water in order to protect public health and timber, which rapidly became scarce around new settlements. Bonyhady stated that as early as 1804 such laws were the norm, citing the establishment of similar laws in Hobart and concern expressed about the excessive slaughter of seals on King Island for the trade of their pelts. However, this early environmental concern was not simply utilitarian. When Robert Ross succeeded Philip Gidley King as commandant on Norfolk Island in 1790, the worst of the starvation years, his law restricting the taking of birds was not only designed to ensure sustainability. Neither did it follow metropolitan or colonial practice, for it included what was probably the world’s first prohibition of cruelty to animals.

Both art historian and environmental lawyer, Bonyhady’s understanding of the environment included, properly, the built environment. He was impressed with Phillip’s plan for the city of Sydney, and with a succession of later colonial officials, “surveyors, land commissioners, botanists, foresters and engineers[who were] keen to prevent waste and to ensure a continued supply of valuable resources. They were alive to larger environmental risks, particularly that of climate change as a result of deforestation. Their calculus too was not simply utilitarian. In 1837 Tasmania’s Surveyor-General, George Frankland, sought to prevent quarrying in a fern gully known as Salvator Rosa’s Glen on Mount Wellington – possibly the first time a colonist had argued for protection of a particular place on aesthetic grounds.”

Bonyhady did not give a “white blindfold” view of the colonisers’ environmental credentials; he also described colossal environmental destruction due to greed and ignorance. Nor may his argument go uncritiqued. He argued against a succession of environmental historians, including Tim Flannery, whose reading of the colonists’ relationship with the Australian environment and treatment of it was extremely negative. It is perhaps Jock Marshall, however, who was most critical of the colonists’ relationship with their ecological context:

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23 Ibid., 7
24 As opposed to “black armband”.
“The bush, to our great-grandfathers, was the enemy: it brooded somberly outside their brave and often pathetic little attempts at civilization; it crowded in on them in times of drought and flood. It, not they, was alien.”

Perhaps Bonyhady redressed the balance between ‘black armband’ and ‘white blindfold’ views of the colonists’ ecological credentials too far in favour of the latter. From the point of view of this thesis, too, Bonyhady referred little to the Murray-Darling Basin. However, he did indicate that the British rulers of the colony quickly developed a sense of care for the new environment despite not being instructed to do this by their superiors in England. This sense of care was admittedly based upon a self-interested utilitarianism and expressed eighteenth century Deistic Christianity’s mechanistic understanding of Nature. It was quite unlike the Aboriginal custodianship of the land and care for country, and doubtless still naïve in its application. Nevertheless, that it developed so quickly is noteworthy, and perhaps indicates that Country was already exerting an influence on these newcomers. It was this sort of understanding and attitude that the Colony’s ruling class brought to the Murray-Darling Basin.

**Evangelicalism**

The second strand of Christianity that reached New South Wales was personified in the First Fleet’s Chaplain, the Reverend Richard Johnson. Johnson was the first of a group of clergy through whose work Evangelical Christianity came to dominate Protestant Christianity in Australia throughout the nineteenth century. Led by the Wesley brothers, George Whitefield and Jonathan Edwards, begun largely in reaction to Enlightenment thinking and the deistic writing of many of the western philosophical elites the Evangelical Revival that had swept across England and the American colonies earlier in the eighteenth century. Because of this the Evangelicals in the colony of New South Wales were in tension with the ruling class, but they served the rulers’ agenda. As Clark pointed out,

“[evangelicalism] was a religion with an obvious social usefulness in a convict society, for it preached in favour of subordination and against drunkenness, whoring and gambling…The price they paid

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for serving the material interests of the English governing classes was to be branded as civil servants in cassocks by all who did not serve their faith.”

Although Evangelicalism may have been socially useful in the Colony it does not appear to have paid any great attention to the strange ecology in which the colony was situated. To expect evangelical preachers such as Johnson and Marsden to do so may be projecting the concerns of the late twentieth and twenty-first centuries back into the difficult conditions of the eighteenth century convict colony. The evangelical historian Stuart Piggin summarized the vision and mission of Evangelicalism thus:

“Evangelicalism was the official Christianity brought to Australia with the First Fleet. It was the product of that synthesis of Word, Spirit and concern for evangelism and social reform embodied in William Wilberforce and the coterie of well-connected, influential, mainly lay (including a woman!) evangelicals known as ‘the Clapham Sect’. Wilberforce’s evangelicalism was…a warm, practical, humanitarian movement which focused on commitment to the Word and Spirit to energise that commitment. The evangelical presence with the First Fleet was an early expression of that commitment. The vision of a reclaimed criminal class, a converted Aboriginal race, and the islands of the South Seas evangelized from an Australian base was large, even grand. To reproduce vital religious experience and to cover the southern world with Christian nations were the high aspirations of the first generations of evangelicals in Australia. Word and Spirit were made to subserve an experiment in social reform, the nobility of which has been obscured by the harsh realities of ruling-class culture.”

For Piggin

“evangelicalism is best understood…as a movement concerned with three major elements – Spirit, Word and world.”

This understanding is based partly on a survey of most Australian theological colleges conducted in 1993 in which respondents were asked what topics they would like to see in a history of Australian Christianity. That ecological concern does not feature in his reading of Australian evangelicals’ concern for the world is significant. If environmental concern had not surfaced as an important issue among evangelicals by the last

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26 Clark, *A Short History of Australia*, 17-18
28 Ibid., viii
decade of the twentieth century it is hardly surprising that it was not two centuries earlier. Instead, the Evangelicals’ predominant concerns, then as now, appear to have been with personal salvation and social reform.

(Irish) Catholicism

The third major stream of Christian faith in the early colony was that of Irish Catholicism. As art historian Robert Hughes put it,

“Australia was the official Siberia for Irish dissidents at the turn of the century. Their presence there caused the System acute strain and insecurity.”

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Of the need for a penal colony on the other side of the world from Great England Hughes wrote:

“Two centuries later one can see broader reasons for this growth in crime. English society was violently changing, under the stresses of industrialisation, the growth of towns, and a soaring birthrate.”

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The Irish Catholic convicts in New South Wales, however, were by and large political prisoners, regarded by the English as

“bearers of the Jacobin contagion…ideologically and physically dangerous traitors who, upon arriving in Australia, were treated as a special class and oppressed with special vigilance and unusually hard punishments.”

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As Australia’s first white minority, the Irish convicts saw themselves as a doubly colonized people. The colonization of Ireland had proceeded since the twelfth century when the first English Pope, Adrian IV issued a Papal Bull making Ireland a feudal possession of the King of England under the nominal overlordship of the papacy. This colonization of Ireland gained a further religious dimension in 1649 when Oliver Cromwell’s “Roundhead” Protestants invaded Catholic Ireland. By the late eighteenth century the Irish had been subject to increasingly systematic racial and religious discrimination by the English for seven centuries. A period of unrest and armed rebellion in which Catholics and Protestants, encouraged by the French, united against their oppressors, culminated in 1797 in open

29 Hughes, The Fatal Shore: A History of the Transportation of Convicts to Australia, 1787 - 1868., 181
30 Ibid., 25
31 Ibid., 181
rebellion. The British suppressed this, reasserted their authority, but rather than making martyrs of the chief troublemakers or stretching the resources of their prisons still more, they sent them as far away as possible – to Australia. By October, 1800 there were 1,207 Irish convicts in the settlements at Sydney Cove and Parramatta. It was through these products of 800 years of English colonialism, Gaelic heritage and Catholic faith that Catholicism came to Australia.

The Catholic historian T.L. Suttor has maintained that

“What so sharply differentiated the Australian [Catholic] Church in the beginning was the presence of two features all but impossible to reconcile with each other: cultural dependence on Ireland, political dependence on a professedly Protestant Crown.”

At first the ancient conflict simply continued in and regardless of the new context. The English continued to regard the Irish as being primitive, uneducated, superstitious and dangerous, the Irish continued to fiercely resent English oppression and to long for home from which they felt they had been unjustly taken. In 1804 armed rebellion exploded, and was put down at Castle Hill. The Irish, once again, were cowed into submission, and yet again, like oppressed peoples everywhere, they clung to their faith as consolation. To be Irish was, by and large, to be Catholic, even in Australia.

It was some time before Catholic priests were allowed into the colony to pastor their flock. In the 1830s the first Vicar-General, Rev. William Ullathorne, contributed to the general discussion on the future of convict transportation, couching his obvious concern as a Catholic in that context for social justice and the colony’s human condition in terms of environmental concern:

“We have been doing an ungracious and an ungodly thing. We have taken a vast portion of God’s earth, and made it a cess-pool; we have taken the oceans, which, with their wonders, gird the globe, and have made them the channels of a sink; we have poured down scum upon scum, and dregs upon dregs, of the offscourings of mankind, and as these harden and become consistent together, we are building with them a nation of crime, to be, unless something be speedily done, a curse and a plague, and a byword to all the people of the

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earth…The removal of such a plague from the earth concerns the whole human race.”

Ullathorne’s concerns about the polluting effects of the convict system upon the colonial society were justified. Hughes wrote poignantly of Tasmania, where for several reasons these lingered much longer relatively undiluted by free immigration than on the mainland:

“Tasmania is a problem for those who would like to believe that most Australian bush virtues – intransigence, sticking to your “mate”, distrust of judge, trap and nob, unpolished self-reliance, democratic and brusquely dissenting temper – were created by the convict system…They illustrated the melancholy truth of Vauvenargues’s maxim: ‘Servitude debases men to the point where they end up liking it.’”

Yet Ullathorne has been shown to be wrong. Insofar as such things can be measured Australian society compares well with others around the world. The phenomenon of a prosperous, relatively law-abiding and moral society developing quickly from penal colonies where in so many other cases around the world colonial societies have not been nearly as successful has long been a topic of discussion in sociology. No doubt the particular Australian combination of Enlightenment Christianity, Evangelicalism and Catholicism has played a part in that transformation. Through Bonyhady we have already seen hints, on the part of the Enlightenment-influenced rulers, of care for the strange new natural context in which the colony was placed. What part, however, did the three Christian traditions I have outlined play in forming attitudes to the new environment?

Summary of these Faith Traditions’ Ecotheological Credentials

To answer this difficult question requires searching for hints of ecotheological concern in documents that almost always were written for other purposes. While Mulligan and Hill claim to have constructed

“the meta-narrative of ecological thinking in Australia”,

Charles Rue noted, one might say ruefully, that

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33 Clark, A Short History of Australia., 79
34 Hughes, The Fatal Shore: A History of the Transportation of Convicts to Australia, 1787 - 1868., 594
“the part played by religious belief in the lives of these ecological pioneers is overlooked.”36

Rue also argued, however, that

“Just as the Scriptures are being re-read with ecological eyes, Australian Church history can be read and researched with ecological questions in mind.”37

Taking this approach one can conclude that the dominant concern of the Establishment was to establish the colony and British control over the convicts, the land and to reach an accommodation with the original inhabitants whereby the British crowns interests might be pursued. Their main interest in the land seems to have been the introduction of farming. The interest of the Evangelicals lay in the salvation and improvement in the living conditions of the convicts, and in the inauguration of mission to the Aborigines and throughout the south Pacific, and not, it would seem in care for the rest of God’s creation. The Irish were an oppressed people who dreamed of freedom for themselves. It is likely that they regarded the land, being their prison, as the enemy too. Initially, then, the new land was simply a stage to which the newcomers brought their agendas.

The process of adaptation, of being affected by the new environment, happened quickly, but seems at least to some degree to have been opposed by Christian faith. Manning Clark noted that as early as 1819, just a few years after the Murray-Darling Basin began to be explored, observers from England noticed how the native-born were beginning to differ from the migrant in appearance, speech and temperament, and that:

“While the native-born tended to be silent on their heritage from the British Isles, the apologists for the Protestant ascendancy tended to take inordinate pride and pleasure in being British...While the native-born were beginning to take pride in their natural environment and to look on it with the eye of a lover rather than the eye of an alien, the apologists for the Protestant ascendancy tended to write of Australia in the early Dutch-English tradition as an

37 Ibid., 8
exceedingly barren land. An early poet, Barron Field...wrote of
the country as a place which:

‘...emerg’d at the first sinning
When the ground was therefore curst;
- And hence this barren wood!’

Having explored the reasons for and the setting of the context of European
colonization of New South Wales and the place of 3 forms of Christian
expression in this it is now time to read ecotheologically the exploration and
settlement of the whole of the Murray-Darling Basin.

Exploring the Murray-Darling Basin
Although, as we have seen, the colony at Port Jackson could be described as
a gulag that advanced Great Britain’s colonial and imperial ambitions,
perhaps the most powerful motivation for expanding westwards after the
simple struggle to survive was the desire to achieve prosperity. In the
summer of 1812 another severe drought caused waterways around Sydney
Harbour to dry up, crops to fail and colonists to fear starvation. Governor
Macquarie realised the urgent need to find agricultural and pastoral land
west of the Great Dividing Range. In May, 1813 Blaxland, Lawson and
Wentworth and four convicts were the first Europeans to succeed in
crossing the Blue Mountains. Although they did not descend to the western
side they were the first Europeans to see the Murray-Darling Basin. They
could see the smoke of Aboriginal campfires around them too, but this did
not emerge in their report. Instead, it was as though the Aborigines were not
fully present:

“To the ears of these white adventurers, the inland was a silent place,
awaiting the sounds of settlement and industry. To their eyes, it was
‘pasture’ – enough, thought Blaxland, to last the colony for the next
30 years.

To colonial optimists, this conquest of the Blue Mountains had set
the pattern for further exploration. The silence of the land would
continue to retreat, just as the Aborigines would retreat, before the
advance of white settlers. Grass plains, created by the Aborigines’

38 This tendency can still be experienced in the popularity of Christmas cards that celebrate
a White Christmas and hymns such as William Blake’s ‘Jerusalem’ whose lyrics celebrate
‘England’s green and pleasant land’.
39 Aply named, it seems!
40 Clark, A Short History of Australia, 46-7
41 For much of the period discussed New South Wales covered the eastern two thirds of the
Australian continent.
fire-stick farming, would realize their destiny as the pastures for European stock. Indeed, it was commonplace for explorers and settlers to describe each new grassy plain as ‘a gentleman’s park’, as if nature had created a patrimony which the Europeans had come, at last, to claim.”

Acting quickly, Governor Macquarie sent the surveyor Evans over the Blue Mountains, by the end of 1813 a passable road was built, and Macquarie himself founded Bathurst on the Macquarie River in May, 1815. The European relationship with the Murray-Darling Basin had begun, and a period of exploration, followed quickly by the establishment of pastoral leases on land identified by explorers as most suitable for the purpose ensued. Although the explorers thought that the inland rivers were the key to unlocking the interior, these were the puzzle which kept its geography hidden from them for several decades. It was hoped that they might water great pastures, provide waterways for shipping and provide the pattern that dictated settlement. But where did they flow? In 1817, Macquarie sent the surveyor John Oxley and George Evans to explore the Lachlan River west of Bathurst. They discovered good grazing land, but Oxley was bewildered when marshes blocked his way:

“It was with infinite regret and pain that I was forced to come to the conclusion that the interior of this country is a marsh and uninhabitable.”

Turning north they returned to Bathurst, following the Macquarie River.

Continuing this programme of exploration Oxley travelled to the site of present-day Dubbo on June 12, 1818. He wrote that he had passed that day

“over a very beautiful country, thinly wooded and apparently safe from the highest floods...”

Later in 1818 Oxley and his men explored the Macquarie River at length, hoping to discover an inland sea:

“[T]he principal stream ran with great rapidity,...[V]ast spaces clear of timber were under water, and covered with the common

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43 Quoted from Oxley’s journal in JHL. Cumpston, *The Inland Sea and the Great River* (Sydney: Angus and Robertson, 1964). 64
44 Ibid. 65
reed…which grew to the height of six or seven feet above us…[Although] I was sanguine in my expectations of soon entering the long sought for Australian sea, it all at once eluded our farther pursuit by spreading on every point from north-west to north-east,…among the ocean of reeds which surrounded us…“45

There were compensations. Turning east Oxley made his way, by August 26, to fertile plains which they named the Liverpool Plains. Further east, they discovered the Peel River, near the present site of Tamworth, then crossed the Great Dividing Range and came upon the Hastings River. Following it downstream they named the harbour it flowed into the sea Port Macquarie.46

In the same period between 1817 and 1819 Throsby, Wild and the young, native born “currency lad” Hamilton Hume explored the country to the south-west of Sydney, from Camden to the Murrumbidgee River in the Yass-Goulburn district. By 1819 there were opportunities for settlement in the Murray-Darling Basin radiating out from Bathurst and in the districts where Canberra, the national capital, is now situated. The attraction of land leading to wealth and status was subverting the original reasons for establishing the colony of New South Wale. For example, Robert Campbell was granted twenty thousand acres of land in the Goulburn-Canberra district47 by the governor in compensation for earlier losses.48 Clark reported that:

“The ladder of both social preferment and social prestige was not unlike that of other European societies, where the founders of a family made their wealth from trade and then took up land to acquire social prestige wealth alone could not confer.”49

Governor Sir Thomas Brisbane promoted further journeys of exploration to find more land for prospective settlers and to clear up the mysteries about the directions and mouths of the inland rivers. In 1824 Brisbane commissioned Hume and former Royal Navy Captain William Hovell to head south with a view to meeting both goals, and to reach Spencer’s Gulf in South Australia. Crossing the Murrumbidgee, which had already been

45 Ibid., 66
46 The large numbers of natural features, towns, suburbs, streets and institutions named either ‘Macquarie’ or ‘Lachlan’ is one of the features of New South Wales!
47 On the boundary of the Murray-Darling Basin.
48 Clark, A Short History of Australia. 56
49 Ibid. 56
discovered by Europeans, they proceeded to “a noble stream” they named the “Hume”, crossing it near today’s Albury. Unfortunately for Hume’s posterity Charles Sturt later rowed into the same river further downstream and in ignorance gave it the name it bears today, the Murray. Further south Hume and Hovell crossed the Ovens and Goulburn Rivers, both tributaries of the Murray that passed through

“country that was the finest in soil and incomparably the most English-like in point of climate they had seen…”

Although Hume and Hovell did not reach Western Port as they believed, let alone Spencer’s Gulf, they did get as far as Corio Bay on Port Phillip. On the way they found some of the best country on the whole continent. Hovel described it as

“extremely beautiful, clothed with a luxuriant herbiage, and both hill and lowland thickly wooded”.

It was not long before a colony was begun on Port Phillip that, with Sydney and Brisbane, became one of the great Pacific rim cities, products of nineteenth century colonisation: Melbourne.

In two journeys the botanist Alan Cunningham did the same to the north of Sydney as Hume and Hovell had done to the south. In the first journey in 1827 he discovered large tracts of pastoral country he named the Darling Downs in honour of the then governor. The following year he discovered a pass from the Downs to Moreton Bay.

However, the hydrology of the great expanse to the west of the Great Dividing Range was still a mystery. By the late 1820s there were three principal theories regarding where the rivers ran. One, favoured by those seafarers who noted that the offshore winds in all Australian coastal waters were hot and dry, said that inland Australia was a vast desert. A second, noting that the rivers west of the Great Dividing Range flowed westward, but that no major river mouth had been detected either by Matthew Flinders or by Nicholas Baudin on their respective expeditions mapping the Australian coastline in 1803, replied that they surely flowed into a great

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50 Ibid.
51 Ibid., 57
lake, commonly called the inland sea. A third contended that a yet to be discovered great river drained a major portion of the continent to its outfall in the western or southern ocean somewhere that had not yet been completely surveyed.\textsuperscript{52}

In 1828, the year after he arrived in Sydney, the army captain Charles Sturt set off to follow the Macquarie River to its mouth. He found a large river which he named the Darling, and which he believed to be the chief “drain” that carried off waters falling west of the Great Dividing Range. To clear up the mystery of the mouths of the Murrumbidgee and Darling Rivers Sturt set off the following November, first with horses and drays along the Murrumbidgee until a swamp halted their progress, then in a whale boat. He and his party rowed into the Murray, past the mouth of the Darling, and as far as the mouth of the Murray. The great mystery was solved and, following an epic, upstream rowing voyage, this was communicated to the settlement in Sydney.

In 1827 Major Thomas Mitchell had taken up the position of Surveyor-General of New South Wales. Initially he did much to improve the quality and accuracy of surveying, a vital task in a colony where huge tracts of land were being opened up and sold to settlers. From 1831 on, however, Mitchell undertook four important journeys of exploration which completed the exploration and charting of the Murray-Darling Basin’s major waterways. In 1831, believing that the river systems to the north-west of Sydney flowed into the Darling Mitchell reached as far north as the Gwydir River, near the site of Moree, and the Barwon River near today’s Mungindi. On his second expedition in 1835 Mitchell proved that all westward-flowing rivers in the northern half of New South Wales flowed into the Darling by travelling north-west up the Bogan River and about 500 kilometres down the Darling. Both of these journeys were curtailed by fighting with Aborigines.

\textsuperscript{52} Each of these theories had some correspondence in fact. Much of Australia is desert. A great part of what is now the Murray-Darling Basin has been, several times during its geological history, part of an inland sea, though not a lake. And the rivers that the explorers were discovering drained into two of the longest rivers in the world, the Darling and Murray. Because of the Murray’s very low flow and gradient its mouth is highly deceptive. The Coorong does not resemble a river mouth so much as a gigantic lagoon.
Mitchell’s third and most important journey occurred in 1836, when he followed the Lachlan River to its juncture with the Murrumbidgee, then the Murrumbidgee to its confluence with the Murray. Disobeying orders to follow the Murray to its mouth he instead headed upstream to a point near modern-day Kerang, then turned south and journeyed across superb grazing country he dubbed “Australia Felix”. Mitchell had discovered and mapped the Western District of Victoria which would later support the world’s most prosperous woolgrowers, and the Grampian Ranges. Mitchell’s final expedition, a decade later, took him into what is now Queensland. The Balonne, Culgoa, Barcoo and Belyando Rivers, which he discovered and named, mostly flowed south-west into the Darling. This also proved to be excellent grazing country.53

After the colonists had taken 25 years to discover the Basin it had taken them only another twenty three to explore this region, larger than most countries, and to discover those areas within it most suitable for grazing. Given the explorers’ initial difficulties with Australian waterways, firstly having to avoid them to cross the Blue Mountains, then in dealing with their unusual, varied waterflows, this must be reckoned as a major achievement. The majority of the earlier explorers were not native-born Australians, but British or Irish army officers who had lived in Australia only a few years. Of the major explorers of the Murray-Darling Basin only Wentworth and Hume were native-born. This lack of time to adapt makes the explorers’ achievements, completed so quickly, strangely laudable. One admires their persistence while at the same time wishing they had taken more time to get to know the strange but nourishing terrain and often supportive people through which they so determinedly passed. They achieved their purpose: mapping the grasslands for pastoralists to follow, and the waterways for the development of river trade.

Day, Claiming a Continent: A New History of Australia. 112-5
**Original Sources**

White’s argument issuing in his ecological complaint against Christianity, and my description of 3 forms of Christianity that came to the Murray-Daling Basin were both made at a broad level of generality. We cannot, however, conduct the whole discussion at this level. It is individuals who by their actions affect their environment, and it is by their attitudes and actions that we read the practical effects of worldviews. Part of assessing White’s thesis, therefore, appropriately involves trying to find out how Europeans explorers and settlers in the Basin have viewed and treated this ecological context. In this and the following 2 chapters I shall gauge what worldviews particular explorers, squatters, pastoralists, pastoral workers and others Euraustralians brought to the Basin, and how they expressed the ecological implications of these worldviews by the way in which they lived in, appreciated and treated the Basin’s landscapes and waterways.

In the absence of sociological studies such as the one described in Chapter 7, one way of gauging how Euraustralian pioneers related to the landscape and waterways of the Murray-Darling Basin is to read original sources ecotheologically. That means reading diaries, letters, journals and the like written by those who explored or lived in the Murray-Darling Basin, searching for references to the environment the writers inhabited, attitudes that indicate a worldview, and how these might relate with each other. As a research method this is like panning for gold in a watercourse. A number of such original sources exist, although the researcher cannot predetermine where sources will be found or, given that the authors’ preoccupations differed from the researcher’s, how much useful material they contain. Several of the explorers wrote journals of their journeys of exploration. Pseudonyms were common at the time, but it is thought that “an emigrant mechanic” who wrote his recollections of sixteen years’ labour in the Australian backwoods” bore the name Alexander Harris. Hubert de Castella wrote from a squatter’s viewpoint, as did the ex-army officer, Lieutenant John Henderson. De Castella’s French-Swiss point of view

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54 European Australians.
55 I have used this name in the Bibliography. Manning Clark argued this way in the Foreword.
56 Related to an ancestor of the Australian marathoner Robert de Castella.
provides an interesting contrast with Henderson who represented the dominant Anglo-Celtic outlook. Interesting viewpoints are also provided by William Porter, a missionary agriculturalist who worked on a Church Missionary Society farm outside Wellington, and the Currency Lass Annabella Boswell, who was born near Bathurst into a squatter’s family, and who married into another squatter’s family. I shall attempt to describe how each of these writers related the Christian faith which, according to White, was the dominant worldview within which they lived, and which, whether or not they were devout believers, would have determined many of their basic attitudes, to the new environment with which they were trying to come to terms. Each of these writers will be addressed in the context of the relevant section of European development of the Murray-Darling Basin. I shall now examine the exploration journals of Charles Sturt and Thomas Mitchell as examples of explorers.

Charles Sturt

Born in India to an English judge, Charles Sturt was a son of Empire and a career army officer who had only been in the Colony of New South Wales for a year when he set out on his first of the two expeditions. With these Sturt ascertained the basic structure of the Murray-Darling Basin, for on the second he passed, of course, the mouth of the Darling which he had discovered on the first, and of which he remarked:

“It was evident that this river was the chief drain for carrying off the waters falling westerly from the eastern coast, and as its course indicated a decline of country diametrically opposite to that which had been calculated upon, it became an object of great importance to ascertain its further direction.”

In Manning Clark’s words

“Sturt had a deep and abiding faith in the Providence of that good and all-wise Being to whose care he committed himself.”

This issued in a deep sense of care for the men in his charge, and for Aborigines with whom they made contact. So much is evident from the


58 Clark, A Short History of Australia., 57
detailed, two volume journal Sturt made of these expeditions. These are elegantly written pieces of work that give evidence of a wise, decisive, compassionate man with the explorer’s ability to make good decisions based upon logical processing of limited information.

Yet Sturt appeared to approach the environment through which he passes as a scientist and observer, a child of his Enlightenment times. Particularly in his short description of the colony in a preliminary chapter in Volume I, Sturt expressed admiration for New South Wales’ unique ecology. The overall tenor, however, is clear, objective description with a view to helping his English readers form better judgements as to the further use of the colony.

Sturt’s description of the Darling River as “the chief drain” surely indicates the influence of the Enlightenment upon his worldview. For the Paakindji peoples who lived along it the River was far more than a drain. Likewise, both Schama and Sinclair emphasize in their different contexts that even for westerners steeped in an Enlightenment worldview rivers mean much more than simply being water-directing drains. Yet the word ‘drain’ has occurred relatively recently in the context of discussions of the functions of the Murray-Darling Basin’s waterways. The mechanical view of the universe still has currency.

Thomas Mitchell
Sir Thomas Mitchell seems to have been cut from similar ideological cloth as Charles Sturt. His journal entry on July 13, 1836, written while crossing Victoria’s Western District before he discovered Henty’s hut, is revealing:

“We had at length discovered a country ready for the immediate reception of civilized man; and destined perhaps to become eventually a portion of a great empire. Unencumbered by too much

wood, it yet possessed enough for all purposes; its soil was exuberant and its climate temperate; it was bounded by three sides by the ocean; and it was traversed by mighty rivers, and watered by streams innumerable. Of this Eden I was the first European to explore its mountains and streams – to behold its scenery – to investigate its geological character – and, by my survey, to develop those natural advantages, certain to become, at no distant date, of vast importance to a new people.”

His discovery of some of Australia’s richest country drew from Mitchell a biblical allusion, but his immediate thought is to “develop those natural advantages” for “the immediate reception of civilized man”, words which illustrate the occidental form of Christianity that White described.

For Sturt and Mitchell Christian faith was undoubtedly an important background factor; it may have motivated Sturt in particular to treat fellow humans well. Primarily, however, these able men seem to have been dedicated servants of the British Empire, convinced that their cause of conquest of other human societies and development of landscapes was noble and right. They may well have argued that what the British were engaged in was a proper expression of the biblical concept of dominion, along the lines of Frank Masters’ poem “The Pioneers” what Rudyard Kipling later expressed in his poem “The White Man’s Burden”.

The Pastoral Colonization of the Murray-Darling Basin

If the largest puzzle solved by the Murray-Darling Basin’s European explorers was where all the rivers ran their practical agenda was to find pasture land as insurance against starvation during the recurring droughts and as a means to prosperity. The next phase of Euraustralian expansion into the Murray-Darling Basin was pastoral. Although Australia was once said to “ride on the sheep’s back” a number of species played important roles in this expansion and affected the landscapes they inhabited. Early in New South Wales’ history the Government gave cows to encourage settlers

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63 Appendix 2
64 Rudyard Kipling, "The White Man’s Burden," *McClure's Magazine* 12, no. Feb., 1899 (1899). Note that this poem, inspired by the American invasion and conquest of the Philippines, inspired vigorous discussion in the United States and Great Britain which included parodies.
to take up pastoral activity. Although attempts were made to control their bloodlines a number escaped and became feral. Eric Rolls notes that feral cattle explored much of the land before their erstwhile human masters did.\(^\text{65}\) Nevertheless, by the 1920s few descendants of the original herds of feral cattle were left in the wild as the cattle industry was brought under increasingly strict control.

Cattle were perhaps the first of many species of animals and plants introduced knowingly or unintentionally by the Europeans that have “gone feral”, and significantly affected the Australian landscape. As Rolls put it, “Animals wanted and unwanted prospered in Australia beyond all expectation.”\(^\text{66}\) Varieties of horses, dogs, pigs, and of course sheep, and even humans well-suited to Australian conditions were developed. Each of these affected the environment.

“The only things not thriving in the Colony,” Rolls remarked wryly, “were Australian grasses.”\(^\text{67}\)

Accustomed to spongy, humus-filled soil, fire, drought, flood, deficiency of nitrogen and phosphorus and being grazed by sharp-toothed kangaroos and rats, and sharp-beaked parrots and pigeons Australian grasses were not used to having whole seed heads snatched and ground in one mouthful, being trampled by cloven hooves, or having the ground on which they grew hardened. Management methods hastened degradation. Concentrating sheep and cattle in yards and sheds at night ensured bare earth that spread out along the tracks herds made to and from pasture during the days. More hardy but inferior Australian grasses took over before English grasses and medics were sown and found to thrive.

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\(^{65}\) “Oxley found tracks of wild cattle on the Macquarie in 1817, 150 kilometres from the nearest known cattle at Bathurst. They were early in the Snowy Mountains and down the Lachlan. Allan Cunningham mentioned in 1827 that it was well known that stragglers were in the foothills of the Warrumbungles. William Gardner, an amiable Scottish school-teacher in New England during the 1840s and 1850s…who wrote huge manuscript volumes of early history, inaccurate and unpublishable, saw wild cattle spread from Sydney to the Swan.” Eric Rolls, *A Million Wild Acres: 200 Years of Man and an Australian Forest* (Melbourne: Thomas Nelson Australia, 1981), 22

\(^{66}\) Ibid., 27

\(^{67}\) Ibid., 28
As noted, Bruce Davidson has described how this process of European colonization has affected the Australian landscape. According to Davidson, changes to the species of grasses growing in the Basin which were the first, relatively slight consequences of the expanding pastoral industry there. Grass featured in a generalised description of Australia’s landscape circa 1788:

“…all of the southern forests and woodlands carried an understorey of grasses in which tall perennials such as kangaroo grass (Themeda australis) were dominant.”

Davidson noted that in some areas, such as the Mitchell grass plains of north-western New South Wales and parts of the Western District of Victoria, cracking clay soils made eucalypt tree growth impossible, and savannah woodland was replaced by grass land. This was, of course, highly advantageous for herds of grazing animals, but it took some time before this economic activity became feasible.

“Until 1830 whale oil and seal oil were a more valuable export than wool. Thus the first years of European settlement affected the landscape only in areas where fertile soil existed and where a valuable species of timber existed.”

Once the Blue Mountains were crossed, however,

“the history of Australian agricultural development and of the rural landscape which resulted from it, is largely a history of the development of techniques which made it possible to supply the European market with commodities which could be produced with a small labour force using large areas of land, and the effect that these techniques had on the landscape.”

Peter Andrews, however, argued that as soon as hoofed animals moved into an area the soil became compacted, the patterns of waterflow changed and erosion increased dramatically. In his estimation it took about 50 years for land to become ecologically degraded from the time hoofed animals first moved into it.

69 Ibid., 65
70 Ibid., 65
71 Peter Andrews, Back from the Brink: How Australia's Landscape Can Be Saved (Sydney: ABC Books, 2006)., 57
How & why did ecological degradation of waterways occur?
The waterways of the Murray-Darling Basin clearly suffered ecological
damage even at the pastoral stage of their settlement by Euraustralians.
Peter Andrews argued that human-caused damage to the waterways began
with Aborigines, by their extensive, routine practice of fire-stick farming:

“Without vegetation to renew and sustain it, the topsoil slid off in
many places, exposing the clay layer beneath…much of the damage
that the Aborigines did to the environment was probably done in the
first 30,000 of those 60,000 years [of habitation in Australia].”72

He believes that

“…what Sturt, Oxley, Mitchell and the other explorers saw was a
mere remnant of the floodplain system as it used to exist…”73

Firestick farming attracts controversy. Advocates of Aboriginal lifestyle see
in it a model of sustainable living in difficult environments that has
applications not only for today’s Euraustralian society but for the whole
world.74 On the other hand the views of detractors are well known.
Moreover, Andrews did not substantiate his assertion that most damage
occurred 30,000-60,000 b.p. It would seem sensible to allow for the
possibility that although Aborigines succeeded in living in the Murray-
Darling Basin for a very long time, and knowing it intimately, they too
altered this environment in some ways that were deleterious.

While debate rages over whether Aborigines damaged the Australian
environment, and therefore the Basin’s waterways, overall damage caused
by Euraustralians is massive and well-documented. Bruce Davidson,
however, considered that the initial impact of European settlers upon the
Basin’s landscape was “not particularly marked”.75 Sheep grazed more
heavily than did native marsupials, leading to the disappearance of the
dominant tall perennial grasses such as kangaroo grass76 and their

72 Ibid., 55
73 Ibid., 52
74 See Deborah Bird Rose, Nourishing Terrains: Australian Aboriginal Views of
Landscape and Wilderness, 1 ed. (Canberra: Australian Heritage Commission, 1996). Karl-
Erik Sveiby and Tex Skuthorpe, Treading Lightly: The Hidden Wisdom of the World's
Oldest People (Crows Nest, NSW: Allen & Unwin, 2006).
75 Davidson, “History of the Australian Rural Landscape,” 66
76 Themeda australis
replacement by shorter grasses such as wallaby grass\textsuperscript{77} but in the early stages of Euraustralian settlement there was little land-clearing; there were so few people and properties, even in well-watered Victoria, were so large that artificial structures made little impact on the environment. Because sheep were shepherded no fences were constructed. At night moveable yards protected them from dingoes.

Andrews, however, considered that the introduction of hard-footed animals “caused havoc”.\textsuperscript{78} The great banks of reeds he believes used to grow in lower-lying areas across Australia’s floodplains were crucial to the functioning of the system of water dispersal. They slowed down water flow, causing silt to drop and form great beds of clay over aeons, and on these very flat floodplains they hindered the flow of water from higher to the slightly lower points, forcing much of it to be absorbed into sandy “recharge beds” at slightly higher elevations from where it could trickle down in drier times. As these marshes were damaged and disappeared, first because of firestick farming, then by various incursions due to Euraustralians, the floodplains lost their ability to retain water and fertility, and to deal with their underlying salinity. The water made its way much more quickly to lower ground and started eroding channels where it flowed. Hence, maintains Andrews, “Australia’s deserts are all man-made”:\textsuperscript{79}

“Fifty years was all it took. You could start counting down from the day hard-footed animals were first brought into an area. The decline in productivity began almost at once and continued year after year. With the water table lowered, fertility leached from the topsoil.”\textsuperscript{80}

The divergence in views between Davidson and Andrews may be more apparent than real. Davidson considered that the point at which the pastoral industry affected the Basin’s waterways most directly in the early days may have been when the herds came into competition with Aborigines and their prey for scarce water resources. Similarly, wild buffalo introduced to the Northern Territory from Indonesia damage the fragile environments around watercourses and waterholes today. Both agree that the effects of the

\textsuperscript{77} Danthonia spp.
\textsuperscript{78} Andrews, \textit{Back from the Brink: How Australia’s Landscape Can Be Saved.}, 57
\textsuperscript{79} Ibid. Title of Chapter 20, pp.159-165
\textsuperscript{80} Ibid., 57
pastoral industry on the landscape were significant over the longer term. Davidson notes that the grasslands created by Aboriginal firestick farming suited these herds well at first, but with time pastoralists realized that the native grasses and soils were more fragile than those from Europe. Much landclearing took place in order to encourage the growth of grazing country.\footnote{One of the author’s congregants, a property owner near Glen Innes, once remarked that he admired his grandfather’s hard work in clearing the land for grazing, but it now left him with the equally hard work of reforestation!} We now know what Mitchell could only have had an inkling of, and what could not have been generally known: that in the Murray-Darling Basin and across Australia landclearing drastically affects the hydrological cycle. Andrews’ hypothesis concerning how the hydrological cycle in ancient Australia functioned contradicts the widely held belief that trees hold the watertable, and hence salt, well below the surface by acting as biological pumps,\footnote{Andrews, \textit{Back from the Brink: How Australia's Landscape Can Be Saved}. 72} and that landclearing effectively raised the watertable and caused problems with salinity by removing those pumps. Whatever the truth of that matter, there is general agreement that landclearing facilitates erosion.

On the other hand, when firestick farming ceased forests regrew in some areas. Eric Rolls has recounted the recent history of the growth of the immense Pilliga scrub.\footnote{Rolls, \textit{A Million Wild Acres: 200 Years of Man and an Australian Forest}. The regrowth into dense forest of formerly lightly wooded areas after the cessation of firestick farming was also attested to by an elderly landholder in Glen Innes, who cited his grandfather’s testimony.} The cessation by Euraustralians of firestick farming has also had consequences: a build-up of fuel in Australian conditions leads to enormous, intense fires.

Andrews and Davidson provide one reason each as to why Euraustralians have caused harm to the Murray-Darling Basin’s waterways. For Andrews, the farmer, the reason is ignorance:

“\begin{quote}No farmer that I know of has ever harmed the environment deliberately. Obviously, it’s not in a farmer’s interest to do so. When farmers harm the environment, you can be sure they do it out of ignorance. I myself was an irrigator. I sank a bore and, if I wanted water, I’d start the pump. If it didn’t rain, I’d start the pump again. It didn’t once cross my mind that what I was doing might be wrong – that I was interfering with the landscape’s normal water patterns,\end{quote}
thereby creating a host of problems, salinity foremost among them.”

In Davidson’s thinking, however, the economic imperative is paramount. For Davidson a primary reason for the changes to the Murray-Darling Basin’s ecology over the past two centuries is that it has been integrated into the world market. By now the die was cast: the Basin could not remain a series of isolated pastoral properties. These needed townships, service centres to which produce could be taken, from which supplies could be obtained, and where lonely squatters and their families and pastoral workers could find company. The country towns that grew up around the Basin, generally according to a plan decreed by Governor Darling as early as 1829, were almost always by or close to a waterway. As the numbers and sizes of the towns increased so, naturally, did their effects upon the waterways.

More Original Sources
I turn now to the writings of more people who lived in the Murray-Darling Basin during this period. John Henderson, “Lieutenant in Her Majesty’s Ceylon Rifle Regiment”, wrote Excursions and Adventures in New South Wales with Pictures of Squatting and of Life in the Bush as a guidebook with systematic advice to prospective immigrants. William Porter was an agriculturalist with Church Missionary Society who diarized 4 years at Wellington. The French-Swiss Hubert de Castella had a short career as a squatter, but that of his brother Paul was longer. Les Squatters australiens, the book recounting his Australian experience, has been translated into English and gives a lively, non-Anglo-Celtic perspective on life in and just outside of the Murray-Darling Basin. Alexander Harris wrote from the perspective of a well-educated worker, and Annabella Boswell wrote from a native-born woman’s perspective of life in the Murray-Darling Basin. As with the journals of Sturt and Mitchell I shall attempt to discern how these writers related the Christian faith that had formed their cultural traditions and worldview, and to which they more or less subscribed, to the Murray-Darling Basin in which each of them spent significant time.

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84 Andrews, Back from the Brink: How Australia's Landscape Can Be Saved., 5
85 There is uncertainty over whether this was the author’s name.
John Henderson

Like Sturt and Mitchell John Henderson an English army officer, well-educated but at the same time seemingly well-equipped to cope with the difficulties of pioneering an unfamiliar land. Henderson’s two volume journal details his emigration, travels in the colony of New South Wales as far as a property on the Namoi River, his investigation and exploration of land and properties on the Liverpool Plains, New England and as far north as the Darling Downs, his difficult cattle muster following the Macleay River from the Tablelands down the range, and finally, his experiences as a squatter further downstream on the Macleay River, near Kempsey.

In all of this broad, life-changing experience there is scarcely a word on spirituality or Christian religion beyond a service of worship aboard the ship on the way to Sydney, and a mention of ‘Providence’ when, mustering cattle, his firearm discharged, narrowly missing both himself and his horse. It is not as though Henderson was simply an uneducated, practical man disinterested in the unseen realm of spirituality. This multi-skilled soldier quoted Latin and Greek sources and contemporary songs, reflected upon the emotional impact of his migration, and became both a pastoralist, gaining experience both with sheep, on the Namoi River, and cattle, and a farmer. Rather, it is as though matters of religion and faith were of no consequence in his worldview. Henderson reflected little upon the landscape beyond how he dealt with it in order to make a living. Like Sturt and Mitchell Henderson seems not to have contemplated whether or not European settlement in Australia was justified. Additionally, Henderson seems not even to have thought about the good of the original people or the land. He wrote negatively about the Aborigines with whom he had much contact and not infrequent skirmishes. It seems that for him the landscape was simply his resource, to be unlocked and used for his profit. While his Preface, written upon his return to London in December, 1850, makes it clear that he did not enjoy his Australian experience, Henderson gave the impression that he was the master of what he surveyed. Indeed, ‘survey’ might be the operative

87 To the extent of quoting Sophocles in Greek.
word. Henderson did not explain why he returned to England, but instead devoted the last nine chapters of Volume II to descriptions of various aspects of life in the Colony. He seems to have been an Enlightenment man, but not a believing Christian who, to use McFague’s term again, looked with “an arrogant eye”.

William Porter

William Porter, on the other hand, believed devoutly. Porter worked from 1838 – 1842 as Agriculturalist to the Church Missionary Society’s Mission at Wellington Valley, New South Wales. Though he had much in common with other Europeans then spreading out across the Murray-Darling Basin, trying to make a living from the land, as a devout Christian in missionary service he was unusual. The Mission in Wellington Valley, which worked largely with local Aborigines, was at best tolerated by the local authorities. At worst, as Porter reported in his diary entry of November 24th, 1838:

“Saw in the Australian Newspaper today; a petition from the various settlers in this (the Wellington) District praying the Governor to make Wellington Valley, a Township; and remove the Mission.”

Porter’s two diaries and a narrative, written at different stages of his missionary experience, provide insights into an unhappy situation on the Mission in central New South Wales towards the middle of the nineteenth century. Apart from opposition from settlers Porter was quickly drawn into a feud between two of his colleagues, and another matter which caused the conclusion of his missionary service:

“Porter cultivated more than the land and was dismissed for gratifying himself with a native woman.”

In his reflection upon his years of service Porter stated that

“I calculated upon trials; yea I thought they [missionaries] had very great trials, yet I considered that the abundant blessing of God which

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89 Italics added by researcher
90 William Porter, "Journals Relating to the Wellington Valley Mission, N.S.W., 1838-1843."
Trials came in the form of expected difficulties in teaching the Christian message and European farming methods to Aborigines. Less predictable for Porter was the lack of rain. In entry after entry Porter entreated God for rain, or thanked God when a shower arrived. Porter was as keen for rain as any farmer today, and for the same reasons. The Mission’s staple produce was wheat and wool, it being too dry at the time for vegetables to be grown.

Although it was a given for Porter that God is Lord of nature who determines when and how much rain will fall in only one entry did Porter appear to link causally the settlers with what is happening to the environment:

“October 1 [1838]. Today our Natives returned; so emaciated, that they might have been without food since the day they left us. They each one came and shook hands with me, and appeared truly rejoiced that they were at home again. I asked them if they intended soon to go again? George replied ‘wirrai’ (the word for no) go again. Cobbon that is very miserable in the bush. It is a singular fact that as the Settlers advance, that which is the food for the Natives appears to vanish away. So that they are obliged to live upon the bounty of the Settlers or retreat more and more into the bush. I think the Wellington tribe will soon become extinct.”

Porter does not appear unduly perturbed by the prospect of both bush tucker and the Aboriginal tribe to whom he was ministering disappearing. There is no doubt as to this missionary’s piety, but he seemed not to see the natural setting he was in as having its own validity. Only on one occasion does he describe the scene as being beautiful. Instead, for the most part Porter seemed intent on redeeming Australian land and people by imposing “British-ness” upon them. By confusing his culture with his understanding of Christianity and, no doubt, by his moral lapse, Porter unwittingly played into the hands of compatriots less interested in redeeming others than

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92 Porter, "Journals Relating to the Wellington Valley Mission, N.S.W., 1838-1843."
93 Ibid. Researcher’s italics.
in enriching themselves. In the diaries and journals of William Porter the treatment of Aborigines and of the landscape are of a piece.

**Hubert de Castella**

Hubert de Castella was a Swiss-French who followed his younger brother Paul to Australia in 1854. Paul had come, motivated, like so many others, “by the idea of making a fortune”. He had bought a property in the Yarra valley and “assumed a somewhat manorial life style”. Soon after Hubert’s arrival he began to establish a new homestead

“with a number of features of the seigneurial estate, including deer and a splendid avenue”.\(^{95}\)

Hubert bought a property adjoining his brother’s, no doubt hoping to re-establish the grandeur of the de Castellas that had been lost due to financial mismanagement, but had to return to Switzerland for family reasons after only 22 months in Australia. De Castella was also atypical of settlers in the Murray-Darling Basin in two other senses: he was Swiss, rather than of the dominant Anglo-Celtic culture; and his property was not in the Murray-Darling Basin, lying just south of the southern edge of the catchment in the Colony of Victoria. Nevertheless, de Castella was an early example of Australian multiculturalism, and in his short period in Australia he managed one extensive trip through the Basin, so his experience was helpful.

De Castella’s views on God seem not dissimilar from those of many British of the time. Translator C.B. Thornton-Smith described him, perhaps unkindly, as having

“the trite religiosity of the devout worshipper before the natural spectacles of a provident God.”\(^{96}\)

Like so many others before and since de Castella was moved by the immensity of the ocean while on passage to Australia, providing an insightful description of the human’s relation to nature and God:

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\(^{95}\) Hubert de Castella, *Australian Squatters*, trans. C.B. Thornton-Smith, 2 ed. (Carlton, Vic.: Melbourne University Press, 1861), 1

\(^{96}\) Ibid., 11
“How tiny and yet great, frail and yet powerful one feels leaning over the stern and following the luminous furrow that the huge rudder ploughs in the ocean...Those immense spheres that God has placed in his firmament to guide us keep everlastingly to their allotted place and you who are taking up such little space in this magnificent creation, but feel it completely reflected in your soul, listen with pride and gratitude to the surging of the waves being parted by the hull and the rhythmic creaking of the sails swollen by the wind which is pushing you to other worlds.”\(^97\)

To this was added further gratitude to God upon arriving in Melbourne. Thereafter the only mention of God in de Castella’s book had to do with Aborigines. Yet again, consideration of the Aborigines was linked with consideration of nature, and not for the first time a Continental approached these vexed issues with a sensitivity that English speakers have not always displayed, even if de Castella, too, was a creature of his time:

“If the inhabitants of Australia remained in the state of nature, with no idea of property and not even a sign of religion, that is because of the conditions they have lived in from the beginning. What sort of property could the Australian have made for himself? The land on which he lived produced neither wheat nor rice nor any root crop to feed him. No fruit hung from the trees apart from a few little currants on some wretched shrubs. On the other hand the possum, the kangaroo, the squirrel, the native cat and birds of all sorts were so numerous that he had only, so to speak, to stretch out his hand to get them. And God, who seemed to have refused him everything, had compensated him with a mild climate which allowed him to live without shelter...Nothing around him could improve or increase, and thus nothing could force him to work, think or pray.”\(^98\)

In the last sentence, perhaps, lies a key to Christianity’s contribution to the disruption of the Murray-Darling Basin. De Castella took it for granted that the proper function of humans is to improve and increase, and that it is in doing this that we are caused to work, think and pray. He linked the motivation to growth with his concept of God in a way that, seen from the perspective of 150 years later, is all the clearer and more poignant for being unconscious at the time. His was a classical Enlightenment interpretation of Christianity.

\(^97\) Ibid., 36  
\(^98\) Ibid., 71-2. My italics.
“Alexander Harris”

*Settlers and Convicts: Recollections of Sixteen Years’ Labour in the Australian Backwoods* is not a journal or diary.\(^99\) Perhaps it is not strictly speaking even ‘recollection’. The author did not give his name, but in his Foreword to the 1969 edition Manning Clark argued convincingly that the author was in fact Alexander Harris. Clark also stated that the work “appears to contain as much fiction as fact.” Of what use, then, is this source?

Manning Clark argued that Alexander Harris has written several autobiographical books\(^100\) which, while they describe the Australian landscape, focus on Harris’s struggle with alcohol addiction and Christian faith. The landscape in effect is a well-described backdrop for the personal struggle. So, for example, Clark argued that

> “Relief from the terrors of drink and death came after his [Harris’s] conversion. That is the great difference between *Settlers and Convicts* and the *Autobiography*. In the former, mateship is the comforter which makes the loneliness, the hardships, and the dangers of the bush life bearable.\(^101\) In the latter the Christian religion becomes his comforter…”\(^102\)

Harris wrote insightfully about the bush and life in it, and about missionaries and the lack of religion in the colony. The function of Christian faith for Harris, however, seemed to be anthropocentric. Salvation caused an improvement in personal lives, and also improvement in the morals and functioning of the whole society. Ultimately the bush served merely as a very well-drawn backdrop to the real human action. Harris, then, represents the Evangelical stream of faith, whereas Sturt, Mitchell and Henderson seem to have had their worldviews formed more by the Enlightenment.


\(^100\) *Settlers and Convicts, Testimony to the Truth: or, the Autobiography of an Atheist, The Story of an Australian Settler and A Guide to Port Stephens in New South Wales, the Colony of the Australian Agricultural Company.*

\(^101\) Reminiscent of Russel Ward’s argument in *The Australian Legend.*

\(^102\) Harris, *Settlers and Convicts; or, Recollections of Sixteen Years’ Labour in the Australian Backwoods* xi-xii
Annabella Boswell

Of these original sources Annabella Boswell was the only woman and the only one to begin her life in the Murray-Darling Basin. Born in 1826 into a squatting family at Yarrows, near Bathurst, Annabella Innes showed a keener love of nature and linked nature with faith in God more obviously than any other of these authors. While on a journey to Sydney early in her life she wrote:

“How well I remember kneeling on the soft green bank (of Coco Creek) to say my morning prayer. There are times when even the most thoughtless must feel impressed by the omnipotence and omnipresence of God. I shall never forget the morning prayer under the shade of the green-oak trees in the wild bush.”\(^{103}\)

As a young woman on a return trip to Bathurst in 1849 her diary entry reads:

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As a young woman on a return trip to Bathurst in 1849 her diary entry reads:

“Nothing could exceed the beauty of the day; the fields are looking green and all nature seemed smiling around us – truly “The Heavens declare the Glory of God, and the firmament showeth His handiwork.”\(^{104}\)

The following extended quote from her diary entry of just over a week later, on September 19 revealed her ‘loving eye’. Annabella Boswell plainly delighted in what was, for her, ‘country’. She knew that it was dry and that the soil was poor, but revelled in the show that came forth in the springtime. Yet for all that she still wished that it were in some way different, that the Macquarie River might be “a broad band like some of the noble rivers in America”:

“The weather is now delightful beyond description. The plains, as if envious of the brightness of the sky, are trying to outshine it in a dress of varied green, while the fruit trees are everywhere bursting into blossom. A fortnight ago Jimmy took me [for] a ride to the top of Mt Ranken, which is about four miles from the house…As we ascended the view became gradually more extensive, and at length became the finest I have ever seen. We could see Bathurst and Kelso and all the homesteads scattered over the country for an immense distance, and Evan’s Plains, lying far beyond Mt Pleasant. There are very few flowers to be seen, but the soil is so very barren that I think in the proper season there should be some fine ones, as many of our native flowers delight in poor soil, notably the gaudy Waratah and

\(^{103}\) Morton Herman, ed., *Annabella Boswell's Journal* (Sydney: Angus & Robertson, 1965; reprint, 1993), 23

\(^{104}\) Ibid., 33 On this occasion her future husband accompanied her. Perhaps this coloured her perceptions!
magnificent Rock Lily (a yellow orchid that clings to an apparently bare rock). I could not help regretting that the river is so small, it looks only like a silver thread winding through these wide plains – I would like to see it a broad band like some of the noble rivers in America.”

These diary extracts give evidence of a young woman of devout Christian faith who loved the country in which she was born and to which she had returned, but who still wishes that aspects of it were other than they are. Interestingly, her point of comparison is not the ‘Mother Country’, Great Britain, but The United States of America, a growing world power which was soon to exercise its influence on the Murray-Darling Basin.

Each of these journalists and diarists represented in some way the pastoralists who moved into and started to change the Murray-Darling Basin and its waterways so that these conformed better to their purposes. One can discern a range of attitudes to Christian devotion and appreciation of the landscape in which they lived. Whether or not the author was devout and appreciative, however, the predominant attitudes were a certainty that they, or their culture, knew best, and that the landscape was there for them to use. Over the intervening 150 or more years little has changed in this regard. At this early stage of European settlement of the Murray-Darling Basin, changes to its ecology, and in particular to that of its waterways, were relatively slight. However, it was only when gold was discovered by many of these waterways, and especially later when the river transport industry started that the newcomers started to radically affect the Basin’s waterways. It is to these parts of the Eurauustralians’ history in the Basin that we now turn.

**The Gold Rushes**

Reading between the lines as Manning Clark\(^\text{106}\) recounts the discovery of gold in Australia one notices two significant matters. First, given that the first gold discovered, and so much of the gold subsequently discovered was alluvial, some of the quiet, unsung instigators of the rapidly unfolding

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\(^{105}\) Ibid., 36

drama were waterways of the Murray-Darling Basin. Secondly, until now the major foreign influences on the Murray-Darling Basin had been British and Irish; the goldrushes marked the beginning of significant north American influence. First, this influence was exercised in the search for gold, later in irrigation.

Edmund Hargraves started the Australian goldrushes by discovering the precious metal in a tributary of a tributary of the Macquarie River, close to Bathurst, the first town founded in the Basin. The effect was once again to draw people through the portal that Sydney had become, over the Blue Mountains and into the Murray-Darling Basin. And once again it was Bathurst that became the first major port of call within the Basin.

The first gold was found on the surface. At various fields, particularly in Victoria, it is reported that when miners first arrived nuggets were picked up without digging. This was followed by exploitation of alluvial gold in creeks and rivers. When panning and puddling in waterways began to exhaust alluvial gold the harder, more dangerous process of mining began.

Within the first sixty-five years of modern Australia’s history the waterways of the Murray-Darling Basin were instrumental in the development of the new, Euraustralian society in two ways. First the Basin’s rich, extensive pasture lands prompted the change of New South Wales from a brutal penal colony to a rurally-based, democratic society based on British lines but with a strong egalitarian tone. Secondly, the discovery of alluvial gold brought far more people in search of wealth than had come in order to participate in sheep and cattle herding. The waterways of the Murray-Darling Basin were the mediators and providers of this wealth. They shaped the landscape. They, with the aid of firestick-farming Aborigines created the conditions whereby grasslands could flourish. And over aeons they washed gold and many other minerals out of rock to be easily accessible by ordinary people hoping for wealth and a better life.

The discovery of gold started modern Australia’s immense minerals boom. “Ophir”, which Hargraves called the place where he found gold, became home to one thousand prospectors just four months after his discovery.
Fever gripped the colonies of New South Wales, South Australia and Victoria. The *Bathurst Free Press* commented:

“A complete mental madness appears to have seized almost every member of the community. There has been a universal rush to the diggings.”

The colonial authorities responded by appointing “Commissioners of Land” to regulate the diggings and collect licence fees for each ’claim’. That administrative response set in train dynamics between prospectors and authorities that reinforced the old antagonisms of pastoral workers, convicts, emancipists and currency lads and lasses towards the authorities. The result was that the basic, egalitarian, anti-authoritarian Australian character was reinforced. This clash between authorities and prospectors, however, found its focus in the newly proclaimed colony of Victoria.

Over the next twenty years other important gold discoveries were made at such New South Welsh locations as Young, Bathurst, Gulgong, Grenfell, West Wyalong, Forbes, Parkes, Armidale, and Temora, all of which lie in the Murray-Darling Basin. In July, 1851 the centre of interest shifted south of the Murray. The Victorian authorities, eager to prevent their colony’s population from joining the gold frenzy in NSW, offered a reward of £200 for any gold found within 200 miles (320 kilometres) of Melbourne. Within weeks Thomas Peters, a hut-keeper on William Barker’s *Mount Alexander* station, found specks of gold at what is now known as Specimen Gully. This find was published in the Melbourne *Argus* on 8 September 1851, leading to a rush to the Mount Alexander or Forest Creek diggings, centred on present-day Castlemaine, claimed at the time to be the richest shallow alluvial goldfield in the world. These discoveries were soon surpassed by bigger ones at Ballarat and Bendigo, and more finds in a number of other locations around Victoria followed. Once again, most of these places lie within the Murray-Darling Basin; of the major finds only that at Ballarat was just outside its bounds. Therefore it was the Basin’s waterways that produced the conditions whereby gold might easily be discovered, bringing about a transformation in the colonial societies.

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Edmund Hargraves could never have dreamt the mass people movement his discovery caused. New South Wales yielded 26.4 tonnes\textsuperscript{109} of gold in 1852, but this was a fraction of the yield from Victoria when that state joined the rush for gold. The gold rush had a large influence on Australia as a whole. Sydney had already caught gold fever. Melbourne and nearby Geelong were rapidly emptied of men who sought their fortune, yet immigration was such that the population of Melbourne grew swiftly as the gold fever took hold there. In 1851 the Australian population was 437,655, of whom 77,345, or just under 18%, were Victorians. A decade later the Australian population had grown to 1,151,947 and the Victorian population had increased to 538,628; just under 47% of the Australian total and a seven-fold increase. In some small country towns where gold was found to be abundant the population could grow by over 1000% in a decade. The influx of wealth that gold brought soon made Victoria Australia's richest state by far, and Melbourne the Australian colonies' largest city within a quarter of a century of it being founded. The gold rush touched every aspect of society and elements of it are still clearly visible today. Its influence is reflected in the architecture and layout of Victorian gold-boom cities Melbourne, Castlemaine, Ballarat, Bendigo, Ararat, Maldon and Beechworth. However, the “bust” side of the gold rush’s “boom and bust” nature is reflected in near or actual ghost towns, such as Walhalla, Mafeking and Steiglitz.

Davidson reported that the immediate ecological effect of the gold rushes was to strongly disfigure the environment of and around the mines.\textsuperscript{110} Camps were established at places where discoveries were made. These turned into towns if those discoveries were significant. Waterways were explored for gold and used in the process of panning. The earth was either stripped of its surface soil to reveal gold-bearing gravel, or disfigured with mullock heaps from underground mining. Unless the town managed to transform itself into a service centre for agriculture it was abandoned when the gold was exhausted. Thus the gold rushes strongly affected the environment, but at least it was only in the relatively small areas of the Basin where gold was discovered.

\textsuperscript{109} 850,000 ounces
\textsuperscript{110} Davidson, "History of the Australian Rural Landscape."
However, the gold rushes had less direct but more profound ecological implications. Because their shepherds and cattlemen employees had rushed to the goldfields squatters were forced to fence their runs. Fortuitously, cheap methods of manufacturing wire and nails were developed at that time. Otherwise, the amount of wood used would have been greater even than it was. The pattern of wire-enclosed paddocks, now a feature of the Australian landscape, was set. The major environmental effect of the gold rushes on the Murray-Darling Basin, however, was the above-mentioned increase in population. Once the gold was exhausted attempts were made to settle many of the ex-miners on the land. However, as much of the land suitable for settlement had already been taken by squatters the only way to settle large numbers of farmers was to pass laws which enabled selectors to take up limited areas of the squatters’ leasehold land. Davidson considered that

"It was from this settlement that the largest changes in the Australian landscape were to arise.”

The squatters of course combated this by various means. They selected the maximum area permitted in the names of themselves, their families and employees whom they bribed to select land then sell it back to the squatters\(^{112}\). They selected land around permanent water sources, rendering the remaining land useless for settlement.\(^{113}\) Most of the larger properties in better rainfall areas in New South Wales and Victoria were established by this means. Farms of only 130 hectares could not provide a living for families on the light stocking rate of one sheep per two hectares that the squatters had used, so selectors destroyed trees by ringbarking. As the trees died they ceased to compete for moisture with fodder, so stocking rates could be increased. Leaves and smaller limbs were left to drop off, but larger limbs and the dead trunks were typically left standing. This practice was typically followed not only outside of the Murray-Darling Basin in coastal forests, but also in open forest in the Northern Tablelands.

Nevertheless, the new settlers remained poor. Land-clearing raised the carrying capacity from 2 hectares per sheep to one sheep per 0.4 hectares on

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\(^{111}\) Ibid., 67
\(^{112}\) A process known as ‘dummying’.
\(^{113}\) A process known as ‘peacocking’.
the best land and 0.8 hectares on poorer land, insufficient for a satisfactory living on a 130 hectare farm. Numerous regulations required the selector to carry out a certain amount of clearing and fencing before he obtained title for his land, but even this increased level of stocking was insufficient. The two solutions employed were to establish large sheep runs in the previously unsettled dry interior, in the western half of the Murray-Darling Basin and beyond; and to use new technologies that made areas with a growing season of more than five months more productive for growing crops, giving Australia distinct farming regions. In particular irrigation was introduced to some areas starting from the end of the nineteenth century. That will be the subject of the following chapter.

The gold rushes had ecological consequences that stretched far beyond the manner in which gold was discovered. The rapid population increase and competition for water led to more and more marginal land being used for pastoral purposes. Prior to this development, however, the gold rushes had, by the strain they placed upon the colonies’ infant transport systems, helped to encourage the development of the Basin’s major waterways as viaducts. Together with the desire of the new, downstream colony of South Australia for its own economic viability this led to a much loved chapter in Australian history, when paddlesteamers carried the pastoral wealth of the Basin to the ports of Victoria and South Australia for export.

**River Transport**

The Colony of South Australia began as a well-planned social experiment in 1836, in accordance with social reformer Edmund Gibbon Wakefield’s theory of systematic colonisation, and in reaction to the policy of colonies being a dumping ground for Britain’s prison overflow. The plan avoided the now-unpalatable first decades of the Sydney colony’s development and proceeded straight to the pastoral stage. There were no convicts. Land was surveyed and allotted to free settlers who brought their livestock with them.

However, despite a promising start the Colony then struggled, as is the wont of social experiments, through lack of appreciation of the human factor. Too many settlers were more interested in land speculation than in making their
allotments financially viable, too few labourers were sent and the governor and resident commissioner quarrelled. By 1842 the settlement reverted to a Crown Colony, and its financial situation began to improve. Discovery of silver near Adelaide and huge copper deposits at Kapunda in the 1840s further strengthened its economic base.\textsuperscript{114}

Nevertheless, the pastoral industry remained vital for the young Colony. Mindful of Adelaide’s position near the mouth of the Murray-Darling Basin, with inadequate roads and railways in their infancy,\textsuperscript{115} strategically minded colonists saw the potential of developing a port at or near the mouth of the River Murray to which produce could be easily sent by river transport from upstream before being onshipped to the world’s markets. Although Charles Sturt’s epic voyage of exploration had been accomplished by rowing only a few years previously, this was now the age of steam. In 1848 Edmund Morey and John McKinlay, two settlers from the Euston area, lobbied the South Australian Government and Adelaide businessmen on behalf of station owners along the Murray and Murrumbidgee rivers to put steamers on the River Murray. Morey provided a list of sheep numbers in the Murray-Murrumbidgee region to show the market potential for steamers. They received support from Sturt and from Henry Fox Young, the Governor of South Australia. Governor Young encouraged the South Australian Legislative Council to offer a prize to the first people to operate paddle steamers on the River Murray. In August 1850 the Council offered

“\textsterling} 4000 to be equally divided between the first two iron steamers of not less than 40 horsepower, and not exceeding two feet (60 cm) draft of water when loaded, as shall successfully navigate the waters of the River Murray from Goolwa to the junction of the Darling....”

If £4,000 was not sufficient motive to stimulate the development of Murray-Darling Basin river transport the discovery of gold in 1851 provided all that was needed. The gold rushes in New South Wales but particularly on the much larger, closer Victorian goldfields created markets for food and equipment and often, as we have seen, occurred near waterways. The inland

\textsuperscript{114} http://www.adhills.com.au/tourism/sausthistory.html
\textsuperscript{115} The first, very short railways in the Colonies of Victoria and South Australia were opened in 1847, and in New South Wales a year later. http://www.ahc.gov.au/publications/national-stories/transport/chapter4.html
sheep stations could not get their wool to market, or supplies in, because carriers preferred the generally shorter and more profitable trips to the goldfields. Therefore the pastoralists missed out on much of the benefit of the gold rushes. The need to use those same rivers to their advantage was becoming increasingly urgent.

By 1853 William Randell and Francis Cadell each finished building paddle steamers for use on the River Murray. The ensuing race, which ended far upstream of the junction with the Darling, signalled the beginning of the age of the river boats in the Murray-Darling Basin. As with the steam trains which eventually brought about the demise of the river boat trade, the paddle steamers meant far more than simply transport and consequent economic benefit to the people they served. There was a mystique and romance about them that endures to this day. In an unpopulated land they were symbols, almost secular sacraments both of contact with the world from which these pioneers came, and of the nineteenth century’s leitmotif of technological progress. A century ago people were far more aware of the Murray-Darling river system than today because of their dependence upon rivers for transport and communication, but to this day these two pioneers of Murray-Darling navigation, Randell and Cadell, are honoured with streets named after them in many towns along the Murray, Murrumbidgee and Darling rivers.

From 1853 until the beginning of the twentieth century river transport played a vital role in the economy and settlement of southern and western New South Wales, northern Victoria, the Murray Valley in South Australia, and even southern Queensland as the Murray, Murrumbidgee and Darling rivers became water highways, providing important access throughout the Murray-Darling Basin. In 1855 a steamer carrying gold-mining supplies reached Albury, but Echuca was the usual turn-around point with small boats continuing to link with up-river ports such as Tocumwal, Wahguynya and Albury. The arrival of steamboat transport was also welcomed by pastoralists who had been suffering from a shortage of transport due to the demands of the gold fields. By 1860 a dozen steamers were operating in the high water season along the Murray and its tributaries. Once the railway reached Echuca in 1864 the bulk of the woolclip from the Riverina was
transported via river to Echuca and then south to Melbourne. Paddle steamers with barges plied the narrow, winding watercourses to supply stations and towns with their needs and to carry wool, and other products of the surrounding land, to market. The volume and value of river trade made Echuca Victoria's second port and in the decade from 1874 it underwent considerable expansion. By this time up to thirty steamers and a similar number of barges were working the river in season.

To compete with the Victorians the South Australians developed a river-rail link at the town of Morgan on the great bend where the lower Murray turns from a north-west direction and heads south to the sea. Morgan had already become a point for overlanders, on their way to Adelaide with stock, to leave the Murray, so in 1878 the town was proclaimed and the similarly directed Kapunda to Morgan railway was officially opened. The South Australians thereby tapped river trade from the Darling and Upper Murray regions by providing quicker access to a coastal port than the Victorians could offer. Like Echuca, Morgan became the second biggest port in its state, behind Port Adelaide, dispatched six trains a day to Port Adelaide and saw long queues of laden steamers and barges stretching downstream from the Morgan wharf awaiting their turn to unload.¹¹⁶

Until the 1880s, when railways began to make an impact, the settlers depended almost entirely on steamers to transport everything required for the successful occupation of the land. The most important era of inland river transport was the 50-year period between 1864 and 1914. It reached its peak during the decade 1870–1880 and finally ended in the mid-1930s. A total of around 300 steamers operated on the Murray-Darling river system during the riverboat era.

However, the narrow, shallow, snag-ridden, unreliable rivers of the Murray-Darling system were unlike other waterways where steam-driven craft operated. Narrow, iron-hulled English craft and rear-driven American paddlesteamers alike proved unsuitable for these conditions. The boats that were developed locally are testament to the ingenuity that the unique conditions of the Basin provoked. Broader hulls made from local river red

¹¹⁶http://www.riverland.net.au/~morgansa/loc_hist.htm#Location%20%20History
gum and driven by side-mounted paddles gave the boats the shallow draft and manoeuvrability required. Large, widely varied loads were managed by towing barges. Nevertheless, the whole enterprise remained fraught with perils. Snags, which could punch holes through the ten-centimetre-thick red gum hulls of boats and barges or smash the floats (paddles) on the paddle-wheels, were a constant hazard. The wooden hulls exasperated the constant threat of fire from steam engines. Sparks often set fire to cargo and occasionally steamers were destroyed. A small number of steamers were severely damaged by boiler explosions. Rock and clay reefs and sandbars and overhanging tree branches impeded progress, but the greatest impediment was a lack of water in the rivers to float the boats. Steamer crews hated the hard work involved on winching and coaxing boats through low rivers. Some boats became stranded, as happened to the ‘Jane Eliza’ which famously set off from Morgan, South Australia, in May 1883 and did not reach Bourke until June 1886. Further testament to the Murray-Darling Basin’s unpredictability, and to the adaptability of its Euraustralian pioneers, lay in floods. These were welcomed because boats were not confined to the river channel and could take short-cuts ‘overland’. During the 1870 floods, for example, a steamer left the Darling River and travelled on the Paroo, which in normal conditions doesn’t join the Darling. However, floods also presented problems. On occasions steamers could not fit beneath lift-span bridges, or became lost and were stranded away from the river channel when the water fell.

For all this transport system’s problems, however, it constituted a vital part of the Euraustralian economic and social development of both the Murray-Darling Basin and pioneer Australia. At its peak, the extent of normal commercial navigation in the Murray-Darling system was approximately 5,500 kilometres, and floods enabled steamers to travel beyond their normal limits as far as approximately 6,700 kilometres. Albury was the limit of navigation on the River Murray. Gundagai on the Murrumbidgee was occasionally reached. In 1893, Mungindi on the Darling-Barwon river at the NSW/Queensland border (3,000 kilometres from the sea) was reached.

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117 Boilers also used river red gum, the overuse of which has created a major environmental problem for the river banks today.
This river trade was instrumental in ecologically affecting the waterways on which it ran, but as its most serious effects came in competitive response to the development of the railways as a transport system a discussion will be delayed until the next chapter.

Looking back and forward

In this, the first of two chapters reading ecotheologically the Murray-Darling Basin’s exploration and settlement by Europeans, I have explored why the Colony of New South Wales was started, the 3 expressions of Christian faith that informed the colonists beliefs and worldviews, their attitudes to the strange environment into which they moved, and the effects they were starting to have, mainly through the pastoral industry and the discovery of gold, but also through increasing population pressures and the use of the waterways as transport conduits on those waterways.

As the poem “The Pioneers”\textsuperscript{118} indicated, the Euraustralian settlers used those waterways for a number of reasons, but the expressions of Christian faith which provided them with the elements of their worldview all gave them permission to do so. The following chapter considers how, in the following century and more, Euraustralians used increasingly powerful science and technology to change the waterways of the Murray-Darling Basin.

Chapter 6
Promised Land or Pillar of Salt?
An ecotheological reading of how European settlers then changed the Murray-Darling Basin’s waterways

Introduction
The effects on the Murray-Darling Basin’s waterways of Euraustralian exploration and settlement described in the previous chapter were only the start of massive ecological change. In this chapter I shall continue reading ecotheologically the Euraustralian development of the Basin, paying particular attention to ecological effects upon its waterways. As the ability of science and technology conjoined\(^1\) to change landscape increased greatly in the mid-nineteenth and twentieth centuries this was exploited in the Basin. The building of a rail network and other technological innovations enabled the economic growth of wheat and other grain crops for export on the world market. Irrigation, begun in the late nineteenth century in various schemes around the Basin and augmented in the twentieth, also dramatically affected the Basin’s ecology. While describing these developments and their effects upon the Basin’s waterways\(^2\) I shall continue to look, at the level of the whole culture, in local church congregations and in individuals for how people related their Christian faith to the environment in which they lived.

Wheat-farming & Rail Transport
This process of exploration, settlement and development gained momentum from the growing global economic system into which the Australian colonies were tied from their inception. Once the Basin’s easily obtainable gold had been found agriculture became the focus of wealth generation.

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\(^{1}\) Lynn White, "The Historical Roots of Our Ecologic Crisis," Science 155, no. 3767 (1967), 1204

Technologies made available from the mid nineteenth century and onwards, some of them developed in the Basin to suit that context, made it possible to cultivate vast areas. Competition with agriculture elsewhere in the global market made these economies of scale imperative if the venture was to succeed.

Bruce Davidson reported that the wheat industry was enabled in Australia only after new technology had overcome several problems. In the first half of the nineteenth century wheat was still harvested with a scythe, a labour-intensive method impossible in underpopulated Australia whose poor soils produced yields less than half of those obtained in Europe. Only by sowing much larger areas of land than was possible in Europe were farmers in the Basin able to compete economically. The development of the world’s first mechanical harvester in 1843 overcame the problem of how to harvest huge crops, but ploughing fields in which the trees had been pulled down but the stumps remained was a large problem until Smith developed the “stump jump plough” in 1876.

Wheat was first grown successfully on a large scale in Australia on the red brown earths of the savannah woodlands west of the Great Dividing Range. Apart from the obstacles in the way of establishing wheat-growing already mentioned it was discovered that this area was too dry unless wheat was planted in the autumn and set its seed in the lengthening days of spring, the converse of the situation in Europe. Therefore the English varieties of wheat first tried were unsuitable for Australian conditions. This problem was first addressed in the 1880s and 1890s by breeding early varieties, then solved in 1902 when Farrer crossed English with Indian strains. Further, the red brown earth, like most Australian soils, was deficient in phosphate, causing low yields until Custance discovered this deficiency in 1879 and remedied it by the application of superphosphate.

There remained one serious obstacle to wheat-growing in the Murray-Darling Basin. The cost of carting wheat from the nearest red brown earths

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1 Ibid., 73-76  
2 Bull and Ridley’s stripper harvester.  
3 Horses or bullocks could pull down trees but not pull them out.
at Bathurst to Sydney, or from north of the Great Dividing Range further south to Melbourne was greater than the value of the wheat. Not until the development of the rail network in the 1870s and 1880s was the final ingredient for a successful wheat industry added. Railways proved just as significant a development for Euraustralians in the Murray-Darling Basin as elsewhere. Once the rail network radically reduced transport costs wheat growing could spread to more marginal, remote land. From the red brown earth soils of the savannah woodland it spread to the mallee scrub of northern Victoria, western New South Wales and South Australia, which was rolled, burnt and sown to wheat after the First World War, and later to the brigalow scrub and black soil plains of northern New South Wales and southern Queensland.

Ecological Effects of Wheat Farming

Grazing, mining of gold and other minerals, and the development of population centres and transport links had caused changes both to the Basin’s landscape and its waterways. Clearing it and growing predominantly wheat crops caused further change. Davidson noted that

“the landscape that developed in the wheat belt depended to some extent on the initial environment.”

In the red brown earth of the savannah woodlands of southern New South Wales, Victoria and South Australia the initial effect was to remove timber that had been ringbarked in order to increase fodder for grazing from large areas. Only steeper land, which tended to be retained for sheep grazing, kept its ringbarked trees. Paddocks in flatter areas were fenced off from grazing land into smaller areas. The common size of 20 to 40 hectares per paddock was far larger than in Europe because, as stated, yields were and still are less than half of those obtained there. Consequently, Australian farmers commonly had four times as much area under the plough as European counterparts. The net effect of the introduction of wheat farming was thus to change the ringbarked savannah woodland into a mixture of small (in Australian terms), completely cleared rectangular fields and larger grazing

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6 Davidson, "History of the Australian Rural Landscape.", 74
paddocks covered with ringbarked trees and wallaby grass. After 1890 all fences used wire netting in an attempt to control rabbits.

Before tractors replaced horses in the 1940s the typical rotation of fields was ploughed fallow, wheat and oats. In early spring the arable land was a mixture of red, fallowed fields and green paddocks of wheat and oats. By late spring the crops were in head and the green changed to brown. Harvest in early summer left brown wheat stubble fields which persisted through autumn until they were ploughed and sown again to oats. The ploughed fallow fields were sown to wheat in autumn and fields which had been sown with oats were left fallow, only being ploughed in spring.

Shearing sheds and sheep yards tended to cluster around homesteads on pastoral properties. Once wheat was introduced simple stables for working horses appeared, and large hay stacks became features of the landscape, as did rusting, worn-out machinery, typically left under trees near the homestead. The ploughed fallow fields were easily eroded by the heavy rains that are a feature the Basin’s ENSO-dominated climate, and by the early 1900s erosion gullies became a further feature of the Euraustralian-altered landscape.

In 1907 Howard introduced legumes in the form of a subterranean clover which could carry more stock per hectare than native grasses. Its introduction to the wheat belt in the 1930s and 1940s led to the disappearance of native grasses and lent to paddocks the appearance of a green mown lawn in winter, lush pastures in summer and of dry, bare ground by early autumn. Along with the appearance of tractors subterranean clover changed the landscape in another way. Because it fixed nitrogen the fallow period was considered less important, and because oats were no longer needed for horses the scene changed to one of wheat fields and subterranean clover paddocks. In the 1940s and 1950s contour banks diverted rainwater across slopes and onto permanently grassed waterways which would not erode. With that the Euraustralians had substantially remade the red brown earth country of the Basin’s savannah woodlands into the rolling wheat country of today.

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7 El Niño Southern Oscillation
The sandier soils of the mallee scrub yielded lower than the red brown earth of the savannah woodlands, so in the Mallee paddocks tended to be larger to achieve economies of scale. The soil was easily eroded by the wind when fallowed forming, in some areas, vast, constantly moving sand dunes. Only in the 1940s were these fixed by establishing rye on them. In the 1950s it was discovered that medics would grow on the alkaline mallee soils, so the mallee land also assumed the legume-wheat rotation of the older red brown earth wheat belt. Typical of the mallee areas under wheat cultivation were small, remnant sand hills and the absence of any trees except remaining branched mallee scrub alongside roadways.

The climate and black, cracking soils of the southern brigalow lands in northern New South Wales and southern Queensland, the northern part of the Basin, were suitable for wheat, but first one introduced species, prickly pear, had to be controlled by another, Cactoblastis. Because the soils of this region are rich in both phosphorus and nitrogen only weed growth is a problem. Cultivation of much of the brigalow land and the neighbouring Mitchell grass plains had to wait until the 1950s, when tractors replaced horses and the weeds could be controlled effectively. In this region the stubble was burnt after harvesting in the spring, and the land was ploughed immediately and worked to control weed growth until the crop was sown in May or June. Because wheat was established in this region in the 1950s and 1960s, by which time large machinery was available, paddock sizes of 200 to 400 hectares were not unusual. The landscape’s appearance was dominated by cultivated black soils in summer and autumn, and green wheat in winter and early spring.

Sheep grazing has commonly been an auxiliary activity on Australian wheat farms. The proportion of land allocated to sheep grazing and wheat cultivation, and hence the appearance of the landscape, varied according to the profitability of each enterprise. After World War II machinery became so prevalent that it needed to be housed, so the large, open, corrugated iron machinery shed, sometimes accompanied by galvanized iron silos serving as on-farm stores of grain for livestock were added to the collection of buildings.
Until the 1930s wheat was handled in bags, large numbers of which were stored at railway stations in the wheat belt. When bulk handling was introduced in the late 1930s tall, cylindrical, concrete silos became a feature of every wheat town. As the volume of wheat increased additional large corrugated iron storages were often built at railway sidings.

In the high country on the Basin’s eastern and southern fringes and in the lower Murray River valley the land’s topography was unsuitable for growing wheat on a large scale. These regions remained as the Basin’s beef and sheep zone. After the gold rushes many large holdings were subdivided into family farms of 130 to 260 hectares. Initially trees were ringbarked to increase carrying capacity, as discussed above, but over time much of the dead timber has been burnt. As elsewhere wire-netting fences were introduced to control rabbits. In this region to the south of Sydney native pastures of wallaby grass were converted to improved subterranean clover by topdressing with superphosphate in the 1930s and early 1940s. The effect in winter is of a park of wire-netting enclosures enclosing green pastures. In summer the clover dries off and is consumed, giving a deceptively barren look. Nevertheless, the clover still supports two or three times as many sheep as the native grasses it replaced. North of Sydney’s latitude the climate proved unsuitable for subterranean clover and tall native grass pastures, brown in summer, green in winter, still exist. In all this area rabbits caused serious erosion before being controlled by myxomatosis in the 1950s, 1080 poison and more recently the Kalesi virus. Erosion gullies, still a feature of the landscape, are slowly being covered by grass in many areas.

**Beef and Sheep**

While wheat and sheep became the main farming concerns on the western slopes, in the Murray-Darling Basin’s eastern and southern extremities beef and sheep predominated, and further inland again a pastoral zone dominated. Even before the goldrushes, areas away from the rivers had been developed by building large earthen dams (often called ‘tanks’ in the Western division) that stored run-off from the surrounding land for livestock. In this way much of the drier land in western New South Wales was occupied in the 1860s and 1870s. Further inland again it was discovered
that artesian water, though saline, was suitable for livestock. So, large new sheep runs were established varying in size from 2,000 hectares in the best areas of the western Riverina to much larger as the country grew poorer.

By 1890 the western division of New South Wales was overstocked with 16 million sheep. The disappearance of the saltbush on which these fed was hastened by the plague of rabbits which spread across Victoria in the 1860s, and New South Wales and South Australia in the 1880s. The loss of groundcover led directly to loss of topsoil to water and wind erosion, evidenced by tremendous duststorms hundreds of kilometres distant. In most parts of the Pastoral Zone wire netting helped to control the hordes of rabbits, but this was insufficient to control the loss of saltbush and carrying capacity. The saltbush was replaced by grassland, a process often described as one of the worst examples of human effects upon vegetation. Davidson, however, described this country as “one of Australia’s most efficient forms of land use”, least affected by Euraustralian land use. Paddocks are so large that fences are scarcely noticed, the scarce trees are untouched and homesteads have little effect upon the landscape. Although many smaller species of fauna have disappeared the larger species increased in numbers when water was introduced for sheep. Larger marsupials and feral animals such as donkeys, goats, pigs and horses compete with sheep for grazing.

The ecological effects just described were due to “dryland” farming. Although significant, their impacts on the Basin’s waterways were indirect. In the next stage in the Basin’s development, however, its waterways were regulated into “drains” and “working rivers”, taking water to where humans wanted it. The description of how irrigation affected the Murray-Darling Basin’s waterways is at the heart of this thesis.

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8 There were even claims that red dust polluted the snowy peak of Mount Cook, New Zealand!
10 There are stories of men becoming lost and dying without leaving the one paddock.
11 Pigs, on occasion, even act as carnivores.
Irrigation & “Striking the Rock”

As mentioned, the cartoon which inspired this thesis depicts Alfred Deakin, then Commissioner for Public Works and Water Supply in the Colony of Victoria, as Moses striking the rock at Horeb and Kadesh. Behind Deakin is a crowd of men in nineteenth century garb, carrying buckets, and called “Dwellers on the Plains”. The water gushing forth is entitled “Public Purse”, and the cartoon’s caption reads “Striking the Rock. ‘The principal work of the session will be irrigation.’ – Hon. Deakin ‘Moses’.”

Deakin, the future Australian Prime Minister, had been elected to the Victorian Parliament two years into a drought in 1879 when, aged only 23, he took up the case for irrigation from the Murray River. If he sensed there were votes to be gained from this cause, he was not the last politician to advocate some form of “drought-proofing” the dry Australian interior and he at least dedicated himself to it for another decade. In 1884 Deakin travelled to California in his capacity as Chair of a Royal Commission on Water Supply and Irrigation to research developments there. He met the Chaffey brothers, George and William, in the (then) village of Los Angeles, the mutual impression was favourable, and within a year George Chaffey was on his way to Australia. So impressed was George with the potential of what he saw that he cabled William to sell their interests in the famous ‘Ontario’ colony in California and come to Victoria. This led in time to the inauguration of the Mildura, Victoria, and Renmark, South Australia, irrigation settlements. I shall follow the Chaffeys’ story later.

Deakin was responsible for the important Irrigation Act of 1886. He also reported on irrigation in Egypt and Italy, which he studied during his visit to Europe in 1887, and in 1890-1 the Age sponsored his trip to investigate irrigation schemes in India. Still later, of course, Deakin was Australia’s Prime Minister for three separate terms. Hence the Melbourne Punch cartoon depicting Deakin as a latter-day Moses was justified. Its publication marked the passage of Victoria’s Irrigation Act, a prophetic piece of popular

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12 Exodus 17:1-7
13 Numbers 20:2-13
14 Fig. 2, p.xiv
15 National Library of Australia Website, MS 1540 Papers of Alfred Deakin
art that heralded the beginning of large scale irrigation in the catchment area of the Murray River and its tributaries.

As time passed so grew the idea of “striking the rock” of the Snowy Mountains to provide previously impossible volumes of water to augment the water in the Murray-Darling Basin that due to the efforts of Deakin, the Chaffey brothers and others was already being used for irrigation. Sixty three years after the Irrigation Act was passed in Victoria the Snowy Mountains Scheme was inaugurated in southern New South Wales. Just as Moses, during the Exodus, was able to deliver water to the people of Israel by striking a rock with his staff in the wilderness,\textsuperscript{16} so it was hoped that state and federal governments in Australia could deliver water to the dry interior of the continent by striking the rock of the Snowy Mountains and diverting water westwards to augment massively the irrigation systems that were already being developed.

Although I shall return to it in Chapter 9 the cartoon begs an immediate theological response. The image of striking the rock is rich in biblical associations that still resonated in Melbourne’s colonial, Enlightenment-affected culture. Moses struck the rock at Horeb\textsuperscript{17} in the Sinai desert while leading an incipient nation on a long journey from slavery in Egypt towards freedom in “the Promised Land” of Palestine. This land of abundance was later reported to them to be “flowing with milk and honey.”\textsuperscript{18} The story of the Exodus defines the life of the people of Israel to this day. From it sprang the Bible’s most powerful motifs: slavery and liberation, a pilgrim people, wilderness, the Promised Land, a land of milk and honey, the symbols of abundance, the water of life, and the relationship of the people with the land.

The central Exodus story leads us back into Israel’s broader pentateuchal history where we find another motif of particular relevance to the Basin’s development: salt. The destruction of the pagan cities of Sodom and Gomorrah, and the death of Lot’s wife, who was turned to a pillar of salt

\textsuperscript{16} Ex. 17:1-7  
\textsuperscript{17} Ex. 17:1-7; Nu. 20:2-13  
\textsuperscript{18} Deut. 27:1-3
when she looked back at her former home chills us.\textsuperscript{19} I shall return later in this chapter to the equally-chilling spectre of salinisation.

The Basin’s geography has much in common with that of Palestine and Sinai, and its settlement by Euraustralians has points of contact with many of the motifs mentioned above. Many of the earliest settlers arrived not as slaves, but nevertheless as convicts, oppressed by an unjust social system. Having served their prison sentences many of these convicts stayed in Australia in order to enjoy new-found freedom. Unlike the case in the United States, few European settlers in Australia were pilgrim people in a religious sense. Perhaps only the German religious refugees who in the nineteenth century spread out across an area largely bounded by the Murray-Darling Basin might be considered as such. In another sense, however, European settlers in Australia could be considered to be secular pilgrims in search of their own promised land of abundance. As the first settlers moved out west from the Great Dividing Range they found a vast, but hot and dry land. Although the idea of wilderness varies considerably across culture and time,\textsuperscript{20} for European immigrants this wilderness was analogous to the wilderness between Egypt and the Promised Land.

Nevertheless, could it but be guaranteed of a reliable supply of water, people such as Deakin thought, like that biblical Promised Land this land too would surely become a land flowing with the milk and honey of abundance. As increasing populations strain available water resources around the world the need is becoming acute, but in both Australia and the Middle East that need has always been pressing. Provision of water in the wilderness prior to arriving in the Promised Land was an on-going problem for the Children of Israel. In both modern Israel and Australia irrigation has been used extensively to meet water needs.

The yearning of the Israelites, both of ancient and modern times, for a land of their own is, likewise, a type for all who seek their own land, including the first Euraustralians. However, like the Israelites the first settlers came

\begin{footnotes}
\item[19] Gen. 19:24-26
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from lands very different from the one in which they were trying to establish
themselves. They had to develop relationships both with the lands they had
taken and the indigenous peoples they dispossessed. Those processes took
and are taking time, and are fraught with difficulty. The older story that
leads to the destruction of Sodom and Gomorrah shows how difficult
relations between newcomers and the land and its original inhabitants can
become. In this story salt becomes a symbol of God’s stark judgement upon
disobedience. It is a chilling picture of what could happen in Australia if we
do not heed the ecological warning signs of toxic levels of salinity.
Tragically, much land in the Murray-Darling Basin is already being turned
to salty wastelands as useless as the salt in Jesus’ analogy which, having lost
its saltiness

“is no longer good for anything, but is thrown out and trampled
underfoot.”

In using the land with little regard for its intrinsic value are modern,
secularised Australians, like the Israelites of old, also selfishly testing God?
Are we effectively denying that God does not visit earth, imagining that
God is the transcendent God of Deism?

“Striking the Rock” epitomised the late nineteenth century’s implicit belief
in progress. It shows crowds of “dwellers on the plains” in the background
queuing with buckets to receive abundant water from the struck rock.
Perhaps people such as Deakin had the vast, fertile prairies of North
America in mind when they envisaged the future for the area we now know
as the Murray-Darling Basin. At that time the universe seemed a simpler
place than it now appears. If the landscape was dry, simply apply water; where pasture and croplands were needed simply clear the trees. Continue to
do this ad infinitum, for the resources of this huge land seemed limitless.

Only nine years after the cartoon was published a seven year long drought
of biblical proportions started. It showed for those who wanted to see how
fragile the ecosystems of the Murray-Darling Basin were, and consequently,
how uncertain the promise of this Promised Land was. By Federation winds

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21 Genesis 18, 19
22 Matt. 5:13
were whipping up vast dust storms fed by soil no longer shaded under or held by countless hectares of cleared scrub. Yet at the time the proponents of irrigation felt they could counteract this by the application of water. Indeed, they had some success. I shall now follow the amazing, sometimes bizarre story of irrigation in the Murray-Darling Basin, an enterprise pursued with almost religious zeal.

The Chaffey Brothers

George and his younger brother William were sons of Benjamin Chaffey, a famous Canadian engineer and builder. By the time the family migrated to California in 1878 George had himself become a proficient engineer, and William a successful horticulturalist. In California the Chaffey family employed revolutionary methods, including state-of-the-art technology, to create large scale irrigation projects, generate hydro-electricity and found and build colonies fed and powered by the results.23

Meanwhile, as described in the previous chapter, the steady decline in output of the Victorian goldfields after 1851-2 induced many erstwhile prospectors to try farming. However, the squatters, who dominated the Victorian parliament and occupied huge estates of that colony’s best land,24 forced these settlers northwards during the good seasons of 1870-75 into its normally dry, unsettled, semi-arid north western regions. The prolonged “dry” of 1877-84 had these inexperienced farmers in desperate straits. It was hoped that by irrigating native pasture the carrying capacity for sheep of these subdivided lots would be increased, and the water would mitigate the effects of long summer droughts.25 What protagonists of irrigation at the time did not realize was that in California, southern France and northern Italy, where irrigation had been commercially successful, permanent snow water was available throughout the summer, meaning that only light diversion weirs were necessary to divert it from rivers. Australia’s ancient,

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23 One indication of their “out-of-the-square” thinking was that they used mostly Australian trees for shade and ornament for the communities they designed and built in the hot, dry Californian conditions. See David Mack, Irrigation Settlement: Some Historic Aspects in South Australia on the River Murray 1838-1978 (Berri, SA: Cobdogla Irrigation and Steam Museum in association with The Cobdogla Steam Friends Society, 2003).

24 180 people controlled 4,500,000 acres (about 18,000,000 hectares) of the best land.

25 Davidson, "History of the Australian Rural Landscape.", 72-3
low topography and relatively warm, dry climate meant, however, that there were no permanent snowfields. Instead, large reservoirs would have to be constructed in order to store winter rainfall for the dry summer period. This, of course, produced unnatural hydrological regimes, with deleterious effects on riverine and riparian flora and fauna.

Nevertheless, as described above, Deakin and others conducted their research into irrigation and soon George and William Chaffey were in Victoria, keen to set up an irrigation colony like ‘Ontario’ and others they had started in California. Thereafter transpired an all-too-familiar saga of petty Australian officialdom using and stymying visionary foreigners, alongside an amazing story of north American technology and “can do” attitude transforming a wilderness. That the Chaffeys were able to accomplish anything was a wonder; that they accomplished so much, wonderful; that they did not give up in disgust long before they quit operations amazing; and that they were prevented from fulfilling so much of their plan that would have ruined the Murray River’s environmental flows, providential! The land they purchased was not in fact “wilderness” in the commonly understood sense of that term; it was a large, run-down sheep station on the Murray River known as ‘Tiertmans’, that had been eaten bare by sheep and rabbits. They succeeded in transforming this remote, then almost inaccessible area into the large, progressive centre of population based on irrigated horticulture now known as Mildura. Due to the obstructionism of the Victorian Parliament they did not, however, succeed in making their fortune from this venture. While the Victorians were arguing over whether to allow the Chaffeys to proceed with their project, and the Chaffeys were wondering whether they would lose all of their Australian investment, the Government of the Colony of South Australia expressed an interest in them developing an irrigation-based settlement there. This project duly proceeded, eventually prompting the Victorians to allow the Chaffeys’ venture at Mildura to go ahead. That is how the Murray-Darling Basin and Australia received not one, but two irrigation settlements, Renmark and Mildura.

26 This story is reminiscent of the construction of the Sydney Opera House, during which architect Jorn Utzen was badly handled by local officials and politicians.
27 See Leal, *Wilderness in the Bible: Towards a Theology of Wilderness*.
As indicators of the Chaffeys’ technological, town planning and (despite their failure to make a fortune) commercial brilliance: the pumps George designed for drawing great volumes of water from the Murray River up to King’s Billabong at Mildura were well in advance of anything else in the world at that time; William developed large-scale horticulture in a strange land; and they had success in dealing with fractious governments, politicians and settlers, and in urban planning. The Chaffeys’ contribution to the Basin’s development was momentous, yet their venture ended in partial failure. The depression of 1893 caused their company to go into liquidation. George had so little money left that he had to borrow his fare back to the U.S.A., where he constructed irrigation works that dwarfed what he had done in Australia. William remained a resident of Mildura, and was at least later awarded Imperial honours. Their younger brother Charles, whom they had brought out to administer the Renmark colony, stayed on there for some years before joining the public service in British Columbia, Canada.

There is, perhaps, no better example than that of the Chaffeys’ contribution to the development of the Murray-Darling Basin, of the power and perils of western technology and planning. They transformed two large areas, and ultimately created great wealth, helping to solve the problem that the “bust” after the goldrushes and the squatters’ entrenched selfishness created. On the other hand, the natural creek that runs around Renmark, into which water was pumped from the Murray River became known later as Salt Creek due to seepage. If the full extent of their plans for irrigation had been realized those problems of salt seepage would have been greatly exacerbated, and the minimum flow of the Murray River needed to service irrigation needs would have been reached only one year in four. As David Mack concludes his chapter on this remarkable history:

“It ironically, it would seem that, in addition to the benefits gained from their achievements at Renmark up to 1892, the disastrous loss for the Chaffey brothers in the 1892 depression also had a benefit for South Australia.”

That benefit applied also to the competing Colony of Victoria.

The Spread of Irrigation

The Chaffeys’ irrigation schemes were neither the first nor the last in the Murray-Darling Basin. As early as 1842 Charles Sturt’s close friend Edward John Eyre, fresh from exploring the Nullabor Plain, set up South Australia’s first irrigation works to produce more food for the settlement at Moorundi.29 Further irrigation schemes were attempted in South Australia30 throughout the rest of the nineteenth century, along the Goulburn River and further upstream on the Murray River in the 1890s, the Murrumbidgee River in 1913,31 and at nearby Coleambally in 1958. Early farms of 0.4 to 40 hectares proved unprofitable, so by the 1930s, when dairying and rice growing had become possible, 240 hectare rice and sheep farms, with the area of rice limited to 32 hectares because of lack of markets, and 16 hectare fruit farms were the accepted size of irrigation “blocks” in New South Wales. In Victoria the 40 hectare dairy farm became the most common sized block. Both sheep and dairy farms were sown with exotic species of pasture.

Then came the Second World War, the subsequent further influx of people from around the world, and the desire for a nation-building project. The Snowy Mountains Scheme, which promised to divert water that rushed “uselessly” to the sea, for the provision of both energy and abundant irrigation water, seemed to literally fulfill the Punch cartoon of striking the rock and creating the Promised Land. Or would it also create a pillar of salt?

The Snowy Mountains Scheme (SMS)

The souvenir brochure that marked the opening in 1949 of the Snowy Mountains Scheme declared,

“probably the first man to realise some of the value of the waters of the Snowy was a Jindabyne citizen who used the current of the river to drive the wheel of his flour mill.”32

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29 Ibid., 25-35
30 Ibid.
31 Seddon and Davis, eds., Man and Landscape in Australia: Towards an Ecological Vision., 73
No further serious thought was given to harnessing the snow-swollen river from the 1850s until the 1880s, when severe droughts on the western plains of New South Wales prompted the first investigations into the use of the Snowy for irrigation. Three significant rivers rise in the Snowy Mountains. Of these the Murray and Murrumbidgee flow westward, but the Snowy flows east and out into the Tasman Sea through rugged, largely unfarmed terrain. Farmers on the western plains, having only comparative trickles from which to irrigate their crops, looked wistfully eastward towards the flood of water apparently going to waste. And so, throughout the latter part of the nineteenth century and the first half of the twentieth, support for the idea that the waters of the Snowy might somehow augment the water supply provided by the Murray and Murrumbidgee waxed and waned in tandem with the cycles of drought and plenty among graziers on the western plains.

The idea of artificially diverting water from an area of oversupply to one of chronic undersupply sounded excellent. At the time that the SMS was begun, just a few years after the conclusion of the Second World War the factors in its favour seemed compelling. It was considered that the provision of an adequate, regular water supply would assist irrigation from the Murray and Murrumbidgee Rivers and provide great potential for hydro-electric power, which the Scheme exploited. Although in 1949 environmental factors were not considered to be nearly as important as they are more than a half-century later, the addition of a renewable, non-polluting energy source to Australia’s predominantly coal-powered system was considered to be of great advantage. Further, the SMS helped to bind together a nation that at the Scheme’s inception was still less than fifty years old. The implementation of the Scheme had and still has major implications for the three south-eastern states of the Australian Commonwealth – New South Wales, Victoria and South Australia. A century on from Federation it is easy to forget how independent of each other the Australian colonies once were. The SMS meant that the governments of the three states and the Commonwealth cooperated on a huge project of mutual concern. Another benefit was that the Scheme provided work and a means of integrating into Australian society for large numbers of immigrants who had been displaced from various countries by World War Two. Lastly, the enormous technical
challenges provided by the Scheme helped to develop expertise in design and engineering in Australia that since has been exported abroad.

From an engineering and a technical perspective the SMS is still regarded positively. At a Symposium to mark the 50th Anniversary of the inauguration of the Scheme, for example, Douglas Price remarked that

“The Snowy Mountains Scheme is a complex, yet conceptually very simple, achievement in water engineering, recognised world wide for its excellence”.

Price noted that as a hydro-electric scheme it provides the dual benefits of very significant renewable electrical energy and additional regulated water supplies for the thirsty inland. The Snowy Mountains Scheme struck the rock. Over nearly 60 years it has diverted a huge amount of water west of the Great Dividing Range and into the Murray-Darling Basin.

**Minerals Boom**

Gold is only one of many minerals found in the Basin that have enriched Australia. Aborigines mined ochre. Copper was discovered at Burra in 1845, and by 1850 it was the largest metalliferous mine in Australia, producing 5 per cent of the world's copper. In 1883, silver, lead and zinc were found at Broken Hill. Opals were first discovered at White Cliffs in 1889. In 1900, the first Australian discovery of petroleum products was made at Roma. To this day one can with little trouble pan for and discover sapphires around Inverell and Glen Innes, and dig for opals at Lightning Ridge.

As easily obtainable gold was mined most goldfields located within or near the Murray-Darling Basin became increasingly unviable economically by

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34 The Scheme was expeditiously designed and constructed over a 25 year period from 1949 to 1974, and completed on time and on budget. Its capital cost was $820 million, and its final scope provided greater benefits than envisaged in 1949. The installed power capacity is 3,756 Megawatts (MW) producing an average of 5,100 Gigawatt hours of energy per annum for the South-East Australian grid and, on average, the Scheme diverts 2,360 Gigalitres of water each year west of the Great Dividing Range via the Murrumbidgee and Murray Rivers in order to be used for irrigation and river management. The additional water is shared between NSW and Victoria, approximately 75% and 25% respectively. Ibid.
the end of the 19th century. The last major gold rush in Victoria was at Beringa, south of Ballarat, in the first decade of the 20th century. Gold mining later virtually ceased in Victoria because of the depth of mineshafts and cost of pumping them. The First World War also drained Australia of the labour needed to work the mines. However, as of 2005 an increase in the gold price has seen a resumption in commercial mining at Bendigo and Ballarat. Exploration proceeds elsewhere, for example, in Glen Wills, an isolated mountain area near Mitta Mitta in north-eastern Victoria.

**Irrigating Cotton**

We come to the latest stage of Euraustralian development of the Murray-Darling Basin: irrigation in the Darling River Basin. The Snowy Mountains Scheme diverts relatively large (in Australian terms) amounts of water. As remarked, however, irrigation in the Murray Basin labours at a disadvantage compared with irrigation carried out in northern Italy, southern France and California because it has to compensate for lack of permanent snow feeding the rivers by larger scale damming of the rivers, thus creating larger scale environmental disruption. The water re-directed from the Snowy River augments the supply behind weirs and dams in the Murray Basin. Yet although the Darling River is longer than the Murray, the Murray Basin contributes some 87% of all water in the combined Basin. If the Murray Basin irrigation schemes are at a comparative disadvantage to those abroad but the Murray contributes 8 times as much water as the Darling Basin, whose water flow is both low and uneven, how can irrigation there work, particularly on the scale seen today?

Once again it took Californian know-how and can-do to make this an economically viable enterprise. That means that at three vital stages of the Murray-Darling Basin’s settlement and development by Eurustralians, the discovery of gold in 1851, the Chaffey brothers’ irrigation settlements in the mid 1880s and in cotton farming in the Darling River Basin starting in the 1960s vital impetus came from California. The term “Euraustralian” could be supplemented with the term “Ameraustralian”.

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The initial encouragement for Californian cotton farmers to try their hand, initially in the Namoi River valley, was given by the Hungarian agronomist Nicholas Derera.\(^{37}\) In 1958 the Keepit Dam on the Namoi River was nearing completion, but in a development that provided evidence for Patrick McCully’s thesis that the environmental and social costs of large dams often outweigh their benefits,\(^{38}\) the original reason for building the Keepit, to supplement apparently diminishing artesian water supplies for stock, had been rendered superfluous by controlling wastage. Now that the Keepit had been built some use for it had to be found. Derera, who previously had been given the impossible job of quickly developing a cotton industry in Communist Hungary, Romania and Bulgaria before fleeing Hungary in 1956, concluded that

“…the best utilization of the Keepit Dam was to produce cotton under an intensive irrigated cropping system in the Namoi Valley.”\(^{39}\)

Exhaustive trials were a success, but the new Minister for Agriculture in New South Wales wanted the cotton industry developed in the established Murrumbidgee Irrigation Area instead. Made sensitive to political control by his experience behind the Iron Curtain, Derera countered the Minister by lobbying business groups and raising public awareness of the potential for cotton in the Namoi region, and by publishing the results of his trials as widely as possible. Several Californian farmers, frustrated at politically-imposed controls in their context, noticed this, contacted Derera and, hoping for freedom from restriction, migrated to the new frontier. Despite inevitable problems the first crop was a success, the Water Conservation and Irrigation Commission started doorknocking farmers to induce them to take out water licences from the grossly underused Keepit Dam, and a new industry was underway.

According to Siobhan McHugh,\(^{40}\) Derera provided a scientific rationale to which the technological and practical “can-do” of Americans such as Paul Kahl and Frank Hadley in the Namoi Valley, and Jack Buster and his family


\(^{39}\) McHugh, *Cottoning On: Stories of Australian Cotton-Growing*, p.3

\(^{40}\) Ibid.
and Owen Boone near Bourke was added. Later the Gwydir Valley was also farmed for cotton, and various Australians and others tried their hand at this lucrative, though risky agrobusiness. The result is a highly efficient industry, in world terms, conducted around Bourke and upstream along the Darling-Barwon-Macintyre Rivers, its New South Wales tributaries the Gwydir, Namoi and Macquarie Rivers, and north into Queensland.

Although this industry has succeeded it has, because of the amount of water irrigators store and use, and the amount, toxicity and method of distribution of chemicals used to counter the effects of various pests, antagonized neighbouring graziers and people living downstream. The following statement from a page entitled “Our Struggling River System” on the website of Darling River Action Group exemplifies the opposition to irrigated cotton farming, summing up the point of view of those opposed to what they see as the overdevelopment of the Darling Basin:

“The Darling River, her tributaries, lakes and wetlands are one of Australia’s great natural wonders and the country’s longest river system. Under natural conditions the river provides consistent minor floods (rises) and major floods to provide the ephemeral lakes, wet lands and flood plains along her length with her precious life giving flows.

The majority of the water that gathers into the tributaries and makes it’s [sic] way into the Darling River channel proper is either flowing in from Queensland or north eastern New South Wales. Very little water makes its way from central or western New South Wales into the main channel, so when large volumes of water are removed upstream, there is no water left to replenish the southern reaches of the river system and its lakes.

In the 1960’s an environmentally friendly water management system was completed on the natural lake system toward the bottom end of the river, known as the Menindee Lakes System. Until this time virtually no commercial irrigated cropping existed along the river’s banks and the water in the Menindee Lakes was used mostly for the townships along the river, Broken Hill and towns and cities throughout southern Australia.

Things have changed………beyond any of our forefathers imagination! Over the past 25 years tremendous areas of Queensland and New South Wales have established irrigated agriculture (not seasonal opportunity cash crops to harvest during extreme high flood

41 http://www.d-r-a-g.org/river.htm “Our Struggling River System”
periods). The present crops are water hungry long term crops that are now destroying the ancient stream by reducing her flows to a trickle even after record rain falls. Millions upon millions of mega litres of water storage has been constructed...

We now also see the chemical waste of industry sent down the channel like sewage down a toilet. The big commercial companies filling their man made lakes with fresh water and letting the stale and stagnant water run down the river in its place. To this end we now see large blooms of blue green algae, fish kills and the depletion of animal and marine life throughout the river system.

Past and present governments have neglected the Darling River to the point it is almost dead. We feel it is now time that governments halt any new water licenses, stop any new irrigation within the system and work toward better water practice usage and minimal chemical usage.

We need to reverse the trend and start to bring back life to this natural wonder before there is no life left at all to protect!"

An Ecological Assessment of how the Basin's Waterways have been affected

Over the last century both life in, and the waterways of, the Basin have been transformed by the construction of major water storages. Today the total volume of water storage capacity in the Basin is just under 35,000 gigalitres. The water storages epitomize its European development. They have made it possible to store water during wet periods and to release it as needed during summer or in droughts. This, augmented by the supply of water from the Snowy Mountains Scheme, and extensive land-clearing and irrigation, has completed the process whereby the Murray-Darling Basin has become Australia’s agricultural heartland.

More than 40% of the nation’s gross value of agricultural production derives from its approximately one million square kilometres. It supports almost 2 million people, one quarter of the nation’s cattle herd, half of the sheep flock, half of the cropland and almost three-quarters of its irrigated land. In 1992 about 70% of all water used for agriculture in Australia was used by irrigation in the Basin. The importance of mining industry within the Basin

has already been discussed, and even manufacturing industries within its bounds had an annual turnover of more than $10.75 billion. From the Basin comes agricultural produce as diverse as cotton farmed from beside the middle stretches of the Darling River in north-western New South Wales; canned fruit, produced in the Riverina and Murrumbidgee Irrigation Area; rice and now hardwood plantations in the Coleambally area; and dairying on the lower reaches of the Murray River in South Australia. The importance of pastoral industry has also already been discussed.

From this perspective it would seem that the dreams of those who ‘struck the rock’45, diverting the water flowing eastwards from the Snowy Mountains have been realised. The dry interior of the Australian continent did seem to have turned into the productive ‘Promised Land’ they had hoped for.

On the other hand, however, it is now obvious that this success has a hefty environmental price tag attached. From a scientific and historical point of view the Euraustralian settlement of the Murray-Darling Basin can be viewed as a gigantic experiment in the ability of this particular culture to succeed in an environment very different to the one in which it originated.46 That is why it lends itself so well as a case appraising Lynn White’s thesis. The effects of some alterations to the Basin’s landscape are still not fully known. However, much of what has occurred to the Basin’s waterways since European settlement began is well-documented.

Soil erosion, the earliest obvious ecological problem in the Basin,47 and a consequence of land clearing and introduced species, particularly rabbits, is still significant, and has been joined by a number of others. Although land

45 An allusion to a cartoon casting Alfred Deakin, then Minister for Irrigation in the Colony of Victoria, as Moses striking the rock of Meribah and Massah to produce water. This cartoon formed the central image of David Reichardt, "Promised Land or Pillar of Salt? An Ecotheological Reading of the Development of the Murray-Darling Basin" (Dissertation, Charles Sturt University, 2001).
46 Jared Diamond, Collapse: How Societies Choose to Fail or Survive (New York: Penguin Books Ltd 2005). Jared Diamond devotes a chapter to Australia in “Collapse” precisely because it is a western, currently successful first world society situated in a very fragile environment. Diamond argues that the way in which Euraustralian society copes with the environmental crisis it has provoked will have significant implications for other societies. 47 Discussed in the section Beef and Sheep above.
clearing in the South Australian and Victorian portions of the Murray-Darling Basin has been greatly reduced, in the late 1990s about 30,000 hectares per year were still being cleared in New South Wales, and the figure for Queensland is even higher. Trees and shrubs play many important roles in the environment. They bind topsoil, so hindering its loss; shade the earth, lower foliage and animal life, thus reducing local temperature; act as natural water pumps, taking water from the soil and releasing it into the atmosphere. This has the effect of maintaining the level water table, which in Australia carries vast amounts of dissolved salt, below the roots of smaller plants susceptible to salinity. As noted in Chapter 3, Peter Andrews argues that vegetation steers where water flows. Whether or not he is correct, land clearing has been one of three major causes of the current severe problems with salinity that Australia is experiencing.

*Species introduction* has been one of the plagues of the Australian environment since European settlement. Some introduced species have been able to live in some balance in the local environment. Many others, like the rabbit and, in the waterways, the European Carp have, in the absence of natural predation and the presence of interference to the environment that benefits them, increased greatly in numbers and out-competed similar local species throughout the Basin’s waterways.

The complex of developments that has most affected the Basin’s waterways can be summarized by the word “irrigation”. Irrigation has produced great wealth; however, large-scale, inefficient irrigation has caused three kinds of environmental problems.

Most obviously, taking large amount of water from waterways has reduced their flow. In 2001 only 21% of the Murray’s upstream flow now reaches the sea compared with the equivalent measure prior to development. Just as in the case of the Snowy River, the great amount of water being taken from the Murray for irrigation is greatly changing its ecology, and may even be threatening its viability as a river. As evidenced by the extended quote from the Darling River Action Group website, concerns for the long-term

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viability of the Darling River, whose flow is far smaller than that of the Murray, are even greater.

In many places poor irrigation practices such as excessive irrigation have contributed to water-logging of pastoral lands. Fully seven million hectares of the Murray-Darling Basin is in danger of being waterlogged. For example, much of the dairy farming land around Murray Bridge in South Australia is no longer sustainable for that purpose.

Irrigation salinity is caused by over irrigation, inefficient water use and poor drainage. It is one of several causes of salinity that is thought to be perhaps the worst environmental problem plaguing the Basin. The problem of salinity also attracts ecotheological attention because of the biblical motif of salt. To address this theological question posed by salinity, however, we must once again first read the science so as to speak sensibly. Salinity is defined as

“the presence of salt in the land surface, in soil or rocks, or dissolved in water in our rivers or groundwater.”

There is naturally occurring salt in many places in the Australian landscape. When wind and rain weather rocks that contain salt, or carry salt from the ocean, then the salt is left behind. There are also vast stores of salt deposited in large areas, including the southern part of the Basin, that were under the sea in prehistoric times. Peter Andrews has argued that

“we have to accept that the Australian landscape is unusually prone to salinity. This is because the country is so flat and so dry. The movement of water in Australia is sporadic. Unlike many other parts of the world, we don’t have a big network of continuously flowing streams to flush salt out of the landscape into the sea, so it accumulates in the land.”

Euraustralians have known about this salinity since Charles Sturt noticed it when trying to obtain drinking water from the junction of Macquarie and

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49 Taking on the challenge: NSW Salinity Strategy Sydney: NSW Department of Land and Water Conservation; 2000
50 See Chapter 3.
Darling Rivers. However, Euraustralians have frequently failed to take it into account. As Andrews remarked,

“…our landscape used to cope with the salt perfectly well. Salinity has become a problem because we humans have interfered with the way plants and our landscape used to manage water. We’ve stripped the land of vegetation. We’ve built huge dams. We’ve dug drains in salt-affected country that we’re incapable of managing and which, as a consequence, run rampant every time it rains. The whole pattern of water movement and storage has changed dramatically. The way salt was distributed and stored in the landscape has changed dramatically, too, with the result that the salt is being pushed all over the place. Salt that did not move in the ancient landscape is very definitely on the move today.”

There are three designated types of salinity due to rising watertables – dryland, irrigation and urban. Dryland salinity is the build up of salt in the soil surface of non-irrigated areas, usually as the result of a rising watertable. The rising watertable is in its turn frequently the result of over-clearing of the land. Irrigation salinity is caused by over irrigation, inefficient water use and poor drainage. Urban salinity results from a combination of dryland salinity processes and over-watering in towns and urban areas. Apart from salinity due to rising water tables, river salinity and industrial salinity are observed to be related phenomena.

The water in many places in the Basin is turning brackish. The rising water table, and the return of salt, nutrients and pesticides to waterways means that, if present trends continue, within 20 years Adelaide’s water supply will be too saline to be potable on two days out of five. Large areas of pastoral land have been rendered unusable by salt that has reached the surface of the earth. In places stretches of salt can be seen from the air, and even from the ground. Even more immediately obvious, urban structures such as cemeteries and roads in towns such as Coleambally and cities such as Wagga Wagga are being damaged and destroyed by salt that has risen to the surface. Andrews believes that

“…another extended wet period…will bring the salinity crisis to a head…If a wet period such as the one in the 1950s were to start tomorrow, we’d have five years before the catastrophe really began.”

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52 Ibid., 12
53 Ibid., 10
Overallocation of water and salinity also problems for many other species. Perhaps the most intrusive effect that the river boats industry had on the Murray-Darling’s waterways, however, lay in the construction of weirs. For the boat owners inconstancy of water levels on the waterways was a constant threat to their ability to deliver cargoes, and therefore to their profitability. As the rail network expanded across Australia during the late nineteenth century its reliability stood in stark relief to the sheer unpredictability of the river boat trade. Therefore the proposals to construct a series of 75 weirs with locks to assist navigation on the Murray-Darling system were virtually inevitable. ⁵⁴

Recent criticism of the helpfulness of the large scale construction of dams and weirs around the world has already been noted. ⁵⁵ In the Murray-Darling Basin this has led to ‘ponding’, ie. bodies of still water. The dams and weirs tend to break the continuity of water flow, and ponding reduces unpredictability of that flow. Both of these changes to the environment tend to mitigate against local species of fauna and encourage exotic species. For example, local fish do not tend to thrive in placid conditions whereas introduced carp do. Carp, which are bed-feeders, stir up river and stream bottoms, thus disturbing the environment of many more species. ⁵⁶

Dams and weirs pose other threats to biodiversity. In the south of the Basin many rivers now have low flows in the winter and spring when rain in their catchments is being captured in the storages. In the summer and autumn, when flows were traditionally low, they run full in order to supply the irrigation regions. This pattern of flow is disruptive to the native ecology.

By removing habitat for native riverine and riparian species large scale desnagging throughout the Basin’s major waterways, carried out in order to make the waterways safer for river transport, also posed a threat for

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⁵⁴ 40 locks on the Darling/Barwon River between Wentworth and Walgett; 26 locks on the River Murray between Blanchetown and Echuca; and 9 locks on the Murrumbidgee River between the River Murray junction and Hay.

⁵⁵ McCully, Silenced Rivers: The Ecology and Politics of Large Dams

⁵⁶ Personal communication, Glen Hobbs, dams expert
biodiversity. The large scale cutting down of river red gums, largely in order to provide fuel for riverboats, also destroyed habitat and destabilised riverbanks.

In addition to these localised factors that have caused damage to the Murray-Darling Basin’s waterways one can say that anthropogenic climate change, by reducing the amount of precipitation on the Basin and by altering its pattern, is contributing to the acute water shortages being experienced.

_How did it come to this?_

It is now doubtful whether the Murray-Darling Basin can be saved from permanent, severely debilitating environmental damage. Paul Sinclair wrote of the grief that inhabitants along the Murray River feel at the wonderful ecosystem which has been lost, never to be restored.57 Tim Flannery’s recent documentary _Two Men in a Tinny_58 graphically depicts the trouble the great waterways of the Basin are in.

How did things come to this parlous state?

A farmer, Peter Andrews attributes the damage we have caused to ecological ignorance:

“No farmer I know has ever harmed the environment deliberately. Obviously, it’s not in a farmer’s interest to do so. When farmers harm the environment, you can be sure they do it out of ignorance.”59

Euraustalian knowledge of the Basin’s ecology and of the effects of our manipulation of that ecology is hard-won and recent. Landusers and scientists have generally become aware of the effects of building a system of dams and weirs on the native fish life of the Basin, the causes and the devastating consequences of salinity, and the raft of other environmental

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58 _Two Men in a Tinnie_ (Australian Broadcasting Corporation, 2006), DVD.
59 Andrews, _Back from the Brink: How Australia’s Landscape Can Be Saved._
consequences of more than 180 years of European habitation through bitter experience.

Clearly, there are tensions within the Basin between some production-oriented activities and environmental needs. There is also competition between different economic interests. Different industries in different parts of the Basin compete with each other over access to natural and financial resources.

Consequently, good governance has been necessary. Because of European Australia’s history governance is a perennial problem. The States within whose borders the Basin exists – New South Wales, Queensland, South Australia and Victoria – and the Commonwealth government have long disputed their respective rights and obligations towards the Basin. Prior to Federation, managing the River Murray was a problem for the colonies of New South Wales, Victoria and South Australia. This task was made more complex by the fact that, for much of its length, the boundary between New South Wales and Victoria was – and still is – the top of the bank on the Victorian side of the Murray. A further complication was the use of the Murray as a major means of transport. With the first diversions of water from the Murray for irrigation in the 1880s, conflict developed with those concerned with the use of the river for navigation.

An early conference on managing the Basin, held in Melbourne in 1863 with delegates from New South Wales, Victoria and South Australia, concluded that the commerce, population, and wealth of Australia could be largely increased by rendering navigable and otherwise utilising the great rivers of the interior such as the Murray, Edward, Murrumbidgee and Darling. Although all of the participants were in agreement, nothing substantial resulted from this or any of the other conferences, inquiries and commission held over the following 40 years. Then as now, this lack of progress was largely due to the parochialism of the constituencies, but it is

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60 Seen in the way in which the Victorian and South Australian governments handled the Chaffey brothers.
interesting to note that even then a major concern was to ensure that South Australia received guaranteed minimum flows throughout the year.63

It took Federation and the severe drought of 1895 to 1902 to bring the colonies/States together. A conference in Corowa in 1902, not organised by government, provided the catalyst that eventually resulted in a workable agreement between the states, but it was not until 1915 that the River Murray Waters Agreement was signed by the governments of Australia, New South Wales, Victoria, and South Australia. Two years later the River Murray Commission, whose task was to put the River Murray Waters Agreement into effect, was established.

Though it marked the minimum upon which formal agreement could be reached, the River Murray Waters Agreement was a pioneering document. Likewise, the River Murray Commission was ahead of its time. Its prime task was the regulation of the main stream of the Murray to ensure that each of the three ‘riparian’ states, and especially South Australia, received their agreed shares of the Murray's water. Thus it oversaw the construction of many storages, weirs, dams and locks.

However, by the 1960s salinity was emerging as an environmental problem. In the late 1960s, the River Murray Commission conducted salinity investigations in the Murray Valley. This initiative ultimately led to the further amendment of the River Murray Waters Agreement in 1982 and the broadening of the Commission's role to take account of water quality issues in its water management responsibilities. With the increasing evidence that the successful management of the Basin's river systems was directly related to land use throughout the catchment, further, though very limited, amendments to the Agreement in 1984 enhanced the Commission's environmental responsibilities.

However, because of developing problems of environmental degradation, including such issues as rising water salinity and irrigation-induced land

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salinisation and important changes in water resources administration at both State and Commonwealth levels, it was recognised that the River Murray Waters Agreement and the River Murray Commission were increasingly unable to meet the needs of the Basin's management. A meeting, held in Adelaide in October 1985, of ministers responsible for land, water and other environmental resources from the governments of New South Wales, Victoria, South Australia and the Commonwealth, was followed by two years of intensive meetings and negotiations by politicians and bureaucrats from the four governments. The outcome was the Murray-Darling Basin Agreement. This Agreement provided the foundation for the Murray-Darling Basin Initiative by putting in place a process for the effective management of the water, land and other environmental resources on a Basin-wide basis. With the Murray-Darling Basin Commission administering the Agreement this process has resulted in substantive achievements.

In April 2007, however prime minister John Howard announced that the Basin was facing an "unprecedentedly dangerous" water shortage and that water might have to be reserved for "critical urban" water supplies. Amid concerns about the impact of the drought on Australian agriculture Howard called for prayer

"for rain because the situation for the farmers of Australia in the irrigation area, the Murray-Darling Basin, is critical".\(^6^4\)

Though from a Christian perspective this call to God for help from the nation’s leader shows laudable concern for humans in a difficult situation it betrays a continued anthropocentrism. If the over-allocation of water for irrigation has been one of the main causes of the problem a prayer asking for help to continue doing this betrays an underlying anthropocentric attitude that White critiqued, and that has been on display throughout this history of the Basin’s Euraustralian settlement.

The Federal Government also proposed a $10 billion Commonwealth take-over of the Murray-Darling Basin, arguing that effective management could not be undertaken by competing state governments. Only the state of Victoria refused to co-operate, arguing that its irrigators would be disadvantaged. Legislation to create the Murray-Darling Basin Authority was passed in both the Houses of Federal Parliament in August 2007, and on 26 March, 2008 at the Council of Australian Governments meeting, Premier John Brumby indicated that the Victorian government would participate in the program, in return for $1 billion to upgrade irrigation and continue water security for farmers. As mentioned at the beginning of Chapter 1, the Council of Australian Governments signed the agreement in July, 2008 to inaugurate the new Murray-Darling Basin Authority. In October the Commonwealth Scientific Industrial Research Organisation (CSIRO) presented a major report on water availability in the Basin to the Australian government.\(^6^5\)

From a historical perspective, then, ignorance, competing economic interests, and inadequate governance are factors in Euraustralian-caused degradation of the Murray-Darling Basin and its waterways. From a theological perspective anthropocentrism, commonly named as “greed” in the Field Study reported in Chapter 7, underlies these. From a biological perspective, however, what has happened follows an all-too-predictable pattern. As Tim Flannery has put the matter:

“The European history of the colonisation of Australia has followed the same pattern as has the history of all of the ‘new’ lands. All have arrived at what they are convinced is a virgin land. All have found resources that have never before been tapped, and all have experienced a short period of tremendous boom, when people were bigger and better than before, and when resources seemed so limitless that there was no need to fight for them. Because there was enough for everyone, egalitarian, carefree societies with the leisure to achieve great things, have prospered. There was a period of optimism, when people imagined great futures for their nations. Inevitably, however, each group has found that the resource base is not limitless. Each has experienced a period when the competition for shrinking resources becomes sharper. The struggle between people increases, whether it be a class struggle or a struggle between tribes. If people survive long enough, they eventually come into

equilibrium with their newly impoverished land – and their lifestyles are ultimately dictated by the number of renewable resources that their ancestors have left them.  

Flannery argued that Euraustralians are following the same trajectory as the Maoris and other Pacific islanders have done over the past thousand years, and that the Aborigines themselves once did. Are Euraustralians, then, condemned by biological determinism to ecologically degrade the Murray-Darling Basin, then to live in it, impoverished and in fewer numbers? In Collapse: How Societies Choose to Fail or Succeed the evolutionary biologist Jared Diamond has argued that this is not necessarily the case. Neither does Christian theology, for which God’s sovereign involvement in creation and human choice are fundamental. What part might the religious faith and the worldview of the newcomers play in this whole process? Will these be part of the answer, or of the problem, or ultimately irrelevant? With the ecotheological reading of the Basin’s development now virtually complete I shall, for the remainder of the thesis, be more explicitly theological. The rest of this chapter looks at the Church’s role in the Basin by studying the final three original sources, chapter 7 reports my field study, and the final three chapters consist of theological and biblical reflection.

The Church’s Role in the Murray-Darling Basin – 3 Original Sources

The Church has been present in the Basin while all this development, environmental degradation and debate has been happening. But what sort of a presence has the Church been? Several characters in the story I have told in this chapter are devout Christians, but how does the Church in general relate Christian faith to this context of promised wealth, yet ecological threat? In this chapter I introduce 3 further original sources, a Methodist home missionary and 2 local congregations. Once again I shall read their stories ecotheologically, looking for clues in material that generally focussed on other matters.

67 Not to mention rabbits, European carp and other introduced species.
68 Diamond, Collapse: How Societies Choose to Fail or Survive.
Rev’d James Alexander Walsh

The Rev’d James Alexander Walsh worked as a travelling preacher in a project known as “The Gospel Car” under the auspices of the Wesleyan Home Mission in the Riverina District of the Methodist Church of Australasia between 1899 and 1902. The Gospel Car was a caravan, drawn by two horses, adapted as a mobile home for a man and a boy, a travelling library and a preaching place. Rev Walsh expressed his purpose for this project as

“with God’s help to do all that one man could do to take the truths and consolations of Christianity to these people who live many miles from church bells.”

Walsh’s motivating interest was clearly the salvation of souls. In one entry in 1899 he wrote:

“The preacher took as his text from Job XXXIII verses 21-30 and in one of the most faithful and yet most tender sermons it has ever been my lot to hear he showed man’s fall and God’s remedy.”

Similarly he wrote on August 25th, 1900 of his own efforts to share the Gospel of salvation with a travelling bushman despite that man’s arguments against him.

However, Walsh took a keen interest in the state of the world around him. His diary contains reference to and discussion of political and social issues of the day. Writing of the onerous state duties imposed on rural produce Walsh considered it no wonder that people in those parts would be voting for Federation. He also vented his anger at the “devil’s men” who deserted their wives and took advantage of abandoned women.

Frequent entries detail aspects of the natural environment in which Walsh lived and travelled. He wrote on more than one occasion of dust storms, of heat up to 117°F and of a mirage, of the drought and its effects, of water, mud, and of a rabbiter’s camp. However, Walsh simply described these arduous natural conditions, never seeking to analyse them or to explore how they could have come about. He does not, for example, wonder why the

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70 Approximately 47°C.
profession of rabbiter was necessary in the Murray-Darling Basin. Neither was there any hint that he was aware that the dust storms of which he wrote may have been made worse because

“vast areas of Australia which are entirely unsuitable for agriculture were cleared and left to erode.”71

His comment regarding a thunderstorm, made in his column “The Gospel Car” in the September 8th, 1900 edition of “The Methodist” seems to summarize his attitude to the environment:

“Where it had come from we troubled not to enquire, but as to its reality we could have no doubt.”

In short, this devout Methodist missionary seemed not to consider God’s earth to be a part of his mission.

The Methodists of Wagga Wagga and District

The second source is Raymond Wade’s history The Methodists of Wagga Wagga and District.72 Because such histories are helpful in describing the major trends and influences that have shaped a congregation’s or movement’s life it is telling that neither in the Table of Contents nor in the Index is there any mention of the environment. The bulk of the book concerns the period after the pioneering work done by people such as James Alexander Walsh. It describes a movement that solidifies into an organisation with its own life and momentum. There is relatively little mention of the outside world, although chapter 14, entitled “Social Concern and City Growth: 1921-1975” indicates that the social activism which characterised Methodism was present in Wagga Wagga too. Environmental considerations of the kind examined in chapter 2, important though they are now reckoned to be, do not appear to have been high on the priorities of the Methodists of Wagga Wagga and District.

71 Flannery, The Future Eaters: An Ecological History of the Australasian Lands and People. 361
History of the Church at Coleambally

The final source is a “History of the Church at Coleambally”, taken from the Order of Service at the Dedication of Extensions & Renovations to Coleambally Church on Saturday, 15th November, 1980.73 As mentioned in the previous chapter Coleambally is a town that was built on irrigation. Two irrigation farmers, John Lovell and Les Morton, bought a building in March, 1964 to be used for worship. It was so used, jointly by the Presbyterians and Methodists, on a temporary site until in May 1966 Murrumbidgee Shire Council allocated Lot 24, Coleambally for use to site a church. The building was moved onto the site in November that year, and after renovation the first service was held in it on March 14th, 1968.

Preliminary Reflection

The snippet from Coleambally’s social history shows the Church responding to a social development that was itself in response to the increase of irrigation. The Church is certainly called to be where people are. However, now that Coleambally itself is under some threat from the rising water table and consequent salinity it may be pertinent to ask whether the Church was deeply involved in the prior question of whether people should have been living in Coleambally in the first place. In hindsight, was it right to invest so heavily in irrigation, and does the Church have a function other than caring for people? It would be interesting to ascertain whether the church at Coleambally was able to critique the social movement it served. If it didn’t then, as with the Evangelicals of the early colony, it may simply have served the purposes of society’s rulers by promoting social harmony.

The behaviour and priorities of Rev Walsh and the congregations of Wagga Wagga and Coleambally also seem to typify some of the priorities that were and still are common in churches. Rev Walsh showed the dual evangelical emphases on the salvation of souls and social concern. Although he displayed an interest in nature his social concern did not appear to extend to the environment. His Christian faith and theology were probably

73 “History of the Church at Coleambally in Order of Service at the Dedication of Extensions & Renovations to Coleambally Church,” (Coleambally: 1980).
anthropocentric in practice. If so he would have been typical of many Christians, particularly of the Evangelical persuasion.

While the silence on matters of the environment in Raymond Wade’s history of the Methodists of Wagga Wagga does not prove disinterest it does indicate, assuming Wade’s historical competence, that other matters were given higher priority by the Circuit. In the style of such histories Wade paid most attention to important developments in the life of the organisation, and to ministers and laymen (and some women) who were central to it. It is likely that, as with many organisations, the Methodist Circuit of Wagga Wagga came over time to focus much of its attention and to use much of its energy in perpetuating itself. Its social outreach extended only to humans and mostly, it would seem, within the city of Wagga Wagga.

That being the case, one is entitled to ask Rev Walsh and the congregations at Wagga and Coleambally and those they represent why they did not include the environment in the circle of their ‘this-worldly’ concerns. Did or do they have an assumed, “embedded” theology\(^\text{74}\) that is in practice anthropocentric, rather than biocentric or even theocentric because its purpose is human benefit? Have they succumbed to the Enlightenment’s agenda rather than the Gospel’s?

It would be churlish to be critical of these people. These are all suppositions from small case studies that were tested more fully in the field study reported in Chapter 7. Further, we are all creatures of our time, limited by its presuppositions, assumptions and concerns. Yet surely it is valid for Christians of this era to respectfully ask the same question of those from a time that is now disappearing:

“It was good that you witnessed to and provided opportunities for worship and Christian nurture to the people of Wagga Wagga, Coleambally and the rest of the Murray-Darling Basin. But why did God’s good earth not figure more prominently in your concerns?”

It is a question that needs to be asked of Christian traditions around the world, and will be asked of us by future generations if Christians of today

\(^{74}\) A theology that has not been consciously worked through but which nevertheless funds one’s beliefs and practice. A set of presuppositions.
do not thoroughly re-integrate the doctrine of creation into our theology and practice of the Christian life.

One might have expected significant connections to be made between faith and environment. Churches have traditionally been, and to a lesser extent still are, centres of community, particular in rural towns and settlements. They are ideological communities, powerful formers of attitudes and worldviews. One of the chief purposes of their weekly gatherings is to hear expositions, based on the Bible, on the meaning and purpose of life and how it should be lived. The Bible was written very largely in and to societies that were rural. Its authors used rural images extensively to illustrate their points. In his own teaching Jesus Christ generally used everyday rural pictures familiar to his hearers to describe the Kingdom of God.

Yet these 3 original sources indicate, as did the 5 from Chapter 5, that many people in this society which is still Christian in the sense that White means, have other priorities. In an acute, regional ecological crisis that some, at least, believe is due to the worldview formed by Christian theology one is entitled to ask what sort of contribution the churches are making towards a solution. That question will be explored further in the next chapter.

**Looking back and forward**

In this chapter I have concluded reading ecotheologically the development of the Murray-Darling Basin by Euraustralian settler society, and its severe ecological effects on the Basin’s waterways. I have also continued searching for “embedded” theologies, particularly for those relating Christian faith to the immediate natural context, in the inhabitants of the Basin by means of 3 further case studies. The following chapter reports on a field study which researched this question far more thoroughly.
Chapter 7

Ears to hear:

Listening for Embedded & Deliberative

Ecotheologies in the Murray-Darling Basin

_A reflection upon an ecotheological field study among 8 Uniting Church Congregations of the Murray-Darling Basin._

**Purpose**

This final chapter of Part II reports the ecotheological field study I conducted in 8 Uniting Church congregations spread around the Basin and completes the ecotheological reading of the Basin’s human history. Rural dwellers frequently claim to live closer to the land than urbanites. The study explored to what extent congregations and individuals of the Uniting Church within the Basin’s bounds have engaged in the question of how Christian faith relates to the environment upon which members depend for a living, but also to the particular question this thesis seeks to answer: was Lynn White’s ecological complaint justified in the Basin?

I approached the study with the suspicion, strengthened by consideration of the original sources in Chapters 5 and 6, that the Christian piety that European colonists brought to the Basin and practised in it is largely what Norman Habel has called “heavenist”. As Val Plumwood explained this,

“the earth is at best a temporary lodging; the true human home is beyond the earth, in heaven.”

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This attitude is exemplified by a devout young Broken Hill woman’s question to the researcher regarding the usefulness of ecotheology:

“But doesn’t this earth have a ‘use by’ date?”

and by a devout Swedish farmer, deeply engaged in caring for his land, who nevertheless asked,

“The environment? What does that have to do with Christianity?”

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This piety locates Christian hope in heaven and in the salvation of humans, in effect treating the rest of creation as the stage upon which the human drama is played out. If, as White argued, this has been the dominant theological tradition of western Christianity since the Middle Ages, it is likely both to be embedded even in the attitudes and worldviews of Europeans who are not particularly pious, and evident in the theologies of those who have deliberated upon matters of faith. Therefore, a further task of this chapter is to discern embedded and deliberative theologies among participants. White’s argument would be supported by embedded heavenist and deliberative heavenist attitudes among active Christians. On the other hand, in the current situation of environmental concern one might expect to find increasing numbers of Christians who have deliberated upon their faith to the point where ecological concern has “greened” their theology. One would expect to find few western Christians with embedded ecotheologies.

Embedded theologies tend to be more assumed than reflected upon. Consequently, aspects of life and faith that do not feature strongly in the embedded theology may not receive much consideration. As was exemplified in the previous chapter parish histories, church council minutes, biographies of home missionaries and the like from the Murray-Darling Basin may betray an embedded heavenism by being relatively, even totally silent on how Christian individuals, congregations and parishes have approached care for creation. Similarly silent are a number of publications on rural ministry in Australia, including those by David Walker (Convenor) and Nicholas Hawkes. One notable early example of a deliberative ecotheology was Malcolm Macleod’s unpublished paper entitled “Soul and

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3 Personal communication, PhD candidate Mateusz Wolnicki, whose topic is “The contribution of protected areas to quality of life in rural and regional communities” in far western New South Wales.
Soil” from 1948. More recently, the proceedings of a Trans-Tasman Rural Ministry Conference entitled “An Ecological Vision for the Rural Church” and Rol Mitchell’s doctoral thesis, “Country Life and the Church: The Significance of the Christian Church in an Australian Rural Community” show a growing awareness in Australia of the connection between church life and the environment.

Overseas the situation seems similar, as my farmer friend’s comment might suggest. Studies in rural ministry, including by Garth Cant (Ed.) in New Zealand, and Hassinger, Holik and Benson, Jung et al. and Miriam Brown OP (Ed.) in the United States, indicate a slowly growing but still slight association in the literature between the rural church and environmental concern. A recent case study undertaken by Ernst Conradie and Julia Martin explored the relationship between gender, religion and the environment by studying the perceptions of a group of first-year students registered for a course on Environmental Awareness Techniques and Training at the University of the Western Cape in South Africa.

This study is significant for several reasons. It is unusual in being an empirical investigation of theological and other attitudes, published in a theological journal. Secondly, it indicated that despite a surprisingly high level of environmental awareness participants were on the whole unable to recognize connections between their environmental commitment, their religious affiliation and gender consciousness. Thirdly, even though the

7 M. Macleod, "Soul and Soil," (1948 ). However, Macleod preferred to speak of the Doctrine of Creation rather than ecotheology. (Personal communication.)
10 Garth Cant, ed., The Quality of Life of Rural Clergy in New Zealand (Christchurch: Rural Ministry Unit, 1981).
University of Western Cape’s student population is overwhelmingly non-European\textsuperscript{15} the study correlated with the conclusion of a 1991 survey conducted by sociologist Jacklyn Cock that

“there is a ‘blind spot’ and a ‘deep silence’ on environmental issues among the leadership in Christian churches in South Africa.”\textsuperscript{16}

It seems likely, therefore, that at least in that part of South Africa this heavenist aspect of European theology has been transmitted across cultural and racial lines.

This ecotheological field study in the Murray-Darling Basin, however, investigated how church attenders rather than the literature or students, relate their Christian faith to the environment in which they live.\textsuperscript{17} It also related directly to the thesis’ central question, considering participants’ views on how they and the almost exclusively European society they represent\textsuperscript{18} have affected the waterways and landscape in which they live.

\textit{Field Studies in Theological Research}

Like Conradie’s and Martin’s case study Australia’s 5-yearly National Church Life Survey (NCLS) uses sociological tools to test theological attitudes and practice.\textsuperscript{19} Traditionally, however, sociological studies, and case studies and field studies in particular, have not been common features of theological research. A field study undertaken as part of an ecotheological enterprise highlights ecotheology’s contextual nature and emphasizes ecotheology’s interdisciplinary character. It invokes discussions of contextual vis-à-vis “traditional” theology, begs consideration of issues of method and methodology, and involves the researcher in a discussion of theology and the “human”, or “social” sciences\textsuperscript{20}, which have their own controversies that must be considered.

\textsuperscript{15} The paper did not specify the racial backgrounds of respondents.
\textsuperscript{16} Conradie and Martin, ”Gender, Religion and the Environment: A University of the Western Cape Case Study.” 434
\textsuperscript{17} Some participants were not Christian believers, but all live within a society whose “forms of thinking and language have largely ceased to be Christian” but whose “substance often remains amazingly akin to that of the past.” Lynn White, ”The Historical Roots of Our Ecologic Crisis,” \textit{Science} 155, no. 3767 (1967). 1205
\textsuperscript{18} Only one of the participants in the field study was of aboriginal heritage.
\textsuperscript{19} http://www.ncls.org.au/
\textsuperscript{20} There will be a discussion of human sciences later in this chapter.
Contextual and other postmodern theologies that also allow experience as a theological resource are regarded with suspicion in some theological quarters. Yet experience has been a theological resource since the beginnings of the Church. It was the disciples’ experience of Jesus that influenced these Jewish monotheists to worship him, understand that salvation was extended even to Gentiles, and that led to the formulation of the doctrine of the trinity. In recent centuries the Wesleyan Quadrilateral is one theological methodology which predates the postmodern emphasis on contextual theology, but which recognizes experience as a source for theological reflection. In terms of the Wesleyan Quadrilateral an ecotheological reading means bringing experience and reason as well as the traditional theological sources of scripture and tradition to bear on an ecological context. This ecotheological field study brings participants’ experience and reason, as interpreted by scripture and Christian tradition, to bear on the ecological context in which they live.

The term “ecotheological reading”, of which this field study is an aspect, is a metaphor which implies seeing. Sallie McFague has used the related metaphor of sight to contrast the detached, supposedly objective and apparently all-seeing “arrogant eye” of Plato and Descartes, reason and science, with the intimate “loving eye” as exemplified by Martin Buber’s I-Thou model. Implied is a critique of traditional scientific method, and even of traditional theological methodology. For this field study listening and the ear are better metaphors. The task of this field study was to listen carefully to and to reflect ecotheologically upon what participants had to say. Hence the title, “Ears to Hear”.

**Method & Methodology**

The meanings of the terms “method” and “methodology” overlap. The former is defined as “a particular form of procedure for accomplishing or approaching something”; and the latter as ”a system of methods used in a

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21 John 20:28
22 Acts 10:35
24 Mark 4:9,23
particular area of study or activity.” At what point the “form of procedure” becomes a “system of methods” can be unclear. What is called “scientific method” might be better described as a system of methods, that is, a methodology. This confusion adds to the difficulty faced by a theologian attempting a field study. What method or methodology should s/he adopt when gathering data from the human and natural realm upon which to reflect theologically? The dominant methodology is still scientific method, but there is controversy in scientific circles between the use of quantitative and qualitative research methodology.

The increasing acceptance of qualitative research methodology in the “human sciences” provides further methodological models. Paul Sinclair gathered data for his PhD in history and the book that followed, by kayaking down the Murray River, stopping for pre-arranged interviews. He used the material from these interviews both to form and to illustrate his argument. Similarly, Anthony Moran quoted from indepth interviews conducted by himself and others to illustrate the more general trends he was describing in his work on Australia and globalisation. Hugh Mackay has achieved prominence among qualitative sociological researchers in Australia with his qualitative focus group methodology. Out of consideration for the preference of prospective participants his methodology was adapted for this study rather than conducting individual interviews. Focus groups were judged more likely to facilitate acceptance by participants for the researcher and what he was trying to do than a series of

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26 Whether history can be regarded as a human science is the subject of debate.
28 Anthony Moran, Australia: Nation, Belonging and Globalization (New York: Routledge, 2005), 12
29 Hugh Mackay, Reinventing Australia: The Mind and Mood of Australia in the 90s (Pymble: Angus & Robertson, 1993), 307ff Appendix The Mackay Report contains sections entitled The Research Method (pp.308-312) and Non-Directive Group Discussions and Unstructured Personal Interviews (pp.312-5) that inform the qualitative research method this researcher is developing. Similarly, in Generations: Baby Boomers, their parents and their children (Sydney: Pan MacMillan Australia Pty Ltd; 1997) Mackay repeats his Appendix from Reinventing Australia on The Qualitative Research Method (pp.201-5), and Non-directive Group Discussions and Unstructured Personal Interviews (pp.205-7). Mackay famously predicted Paul Keating’s “unwinnable” Federal election of 1993 from his focus groups when all the political analysts who used quantitative methods were predicting a Coalition victory.
one-to-one interviews. The issue of acceptance of outsiders, particularly from the city, is significant in rural communities. Rol Mitchell’s indepth, sociological study analysed the significance of the Christian church in an Australian rural community. Mitchell studied a small country town using several qualitative and quantitative methods for over fully 18 months yet still commented that

“local acceptance in a small rural town is not achieved quickly, nor easily.”

There are significant differences between Mitchell’s “Countrytown” study and this one. Mitchell’s was a sociological study of a single town using detailed quantitative as well as qualitative analysis. This study, however, is a pilot, theological study which neither could, nor should be comprehensive or sociological. While it does have a quantitative component it makes no claim to be representative, even of Uniting Church people. Rather, it gives some indications that may help to guide future research in this area.

It can, however, be argued that the participants in this study constitute a significant body of opinion. Active Christians who live on or close to the land are likely to have thought more closely about the relationship between belief in a Creator and their place in Creation than most in this society. Lynn White countered the objection that Christians no longer represent the beliefs of mainstream western society with the historical observation, backed by argument, that

“we continue today to live, as we have lived for about 1700 years, very largely in a context of Christian axioms.”

The Australian poet Les Murray has described how this plays out in the Australian context in his essay Some Religious Stuff I Know About

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30 Mitchell, Country Life & the Church: The Significance of the Christian Church in an Australian Rural Community.
31 These included interviews with a wide cross-section of the community, attendance at as many church-related activities as possible, general and informal community ‘participant observation’ in as many ways and with as many people and groups as possible, a mailed survey to a large and representative sample of the community, (this was intended to be a major component of the study) a smaller survey focussing on local volunteering, and some investigation of the local aboriginal situation. Ibid. p.85
32 Mitchell, Country Life & the Church: The Significance of the Christian Church in an Australian Rural Community. 83 Stories of “locals” in country communities not accepting “transients”, even when the latter had lived locally for a generation are common.
33 White, "The Historical Roots of Our Ecologic Crisis.", 1205
People with an active Christian faith may be best suited to representing those axioms.

I drew participants together in groups from a variety of places around the Basin in the context of local Uniting Church congregations and invited them to respond in three complementary ways that will be described in the section on Method. It is of particular interest for the cause of ecotheology in the Uniting Church to explore how Uniting Church people relate concern for the environment to their own religious belief even though a number of participants in the study belong to other Christian traditions or have no Christian affiliation.

There are, of course, related questions that a study such as this could explore. Is it possible to discern differing attitudes between focus groups from different parts of the Murray-Darling Basin, and between those primarily engaged in different livelihoods? One might, for example, suspect that irrigators would be less interested in restoring environmental flows to the waterways upon which they depend for water than dryland farmers, pastoralists and certainly than keen environmentalists. Would it be possible to distinguish between overall attitudes to the environment among these particular groups when they are represented mostly by Christians, or does professed Christian faith override occupational and regional differences? Do supposed differences in attitudes between urban and rural dwellers hold true among Christians, and as far as attitudes to the environment are concerned? Although this pilot study is not large enough to draw statistically valid conclusions on these subjects it can point to trends, further research into which may be undertaken at another time.

**The Field Study’s Method**

During the period July – September, 2005 I met with groups associated with 8 Uniting Church congregations located in the 4 states and the 1 territory in which the Murray-Darling Basin is located. These Congregations were situated at Berri (near Renmark in the Riverland region of South Australia, on the lower Murray River), Canberra (Australian Capital Territory, near the

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Murrumbidgee River), Colleambally (in the Riverina region of southern New South Wales, situated west of Narrandera and south of Griffith on the Colleambally Outfall Drain that flows into the Murrumbidgee River), Cunnamulla (in southern Queensland, on the Warrego River), Glen Innes (in the New England District of northern New South Wales, between the Severn and Macintyre Rivers), Mildura (in the Sunraysia district of Victoria, on the Murray River), Moree (on the Gwydir River in northern New South Wales) and Narrabri (on the Namoi River in northern New South Wales). These locations were chosen as opportunity arose, but also to provide a good spread of geographical, agricultural and governmental localities.

I made initial contact with each Uniting Church Congregation either through someone I already knew or someone to whom I had been referred. These contact people approached others in their Congregation or, in a few cases, outside the Congregation, who the contact person judged would be interested in participating and would make a good contribution. Everyone involved in the field study first read an information sheet, then signed a consent form. Participation in this field study was of course voluntary and confidentiality was guaranteed.

Data was gathered from participants both qualitatively and quantitatively. Nine Focus Groups similar to those employed by Mackay were the main source of qualitative data. Viewed theologically these focus groups became small, temporary communities of people with more or less Christian faith who discussed both matters raised by the researcher and matters arising from their own experience and from the conversation itself. The participants in one of these focus groups, held in a private dwelling, were predominantly ecologically-concerned friends of the householders, but not involved in that Congregation. Almost all were currently or had been involved in agriculture, but the degree of their active involvement in church life varied. Of the other 8 focus groups 6 were held on Uniting Church premises and 2 in private residences of congregational members, and at times that were suitable for the particular group and the researcher. Each of these groups

35 Appendix 5
36 Appendix 6
was comprised predominantly but not entirely of people active in the local
Uniting Church congregation. Group sizes ranged between 4 and 16, with
an average group size of 9, \(^{37}\) excluding the researcher. A total of 41 women
and 44 men participated in groups with ages ranging from 20s to 80s.
Though this was not my intention, no children or youth participated. \(^{38}\)

I moderated the discussion of each focus group according to a framework. \(^{39}\)
Although focus group discussions varied widely they followed roughly the
same pattern. With the permission of each group I also recorded each
conversation on audiotape, then made summary transcriptions of these.
According to Mackay’s methodology the researcher is to involve
her/himself as little as possible in focus group discussion beyond setting the
basic agenda. However, because the discipline of ecotheology was still new
to many participants this proved impractical; some explanation of concepts
was needed for each group. Focus group discussions lasted for about 90
minutes.

The quantitative method used for obtaining information was by means of an
Inventory \(^{40}\) each participant was invited to fill in. This inventory was
modelled on the Prepare/Enrich Inventories developed by Olson, Druckman
and Fournier \(^{41}\) in the field of marriage and other couple relationships.
Participants responded to each of 56 statements that pertained to how they
related the environment in which they lived to the Christian faith by
choosing a number between 1 and 5 where these denote as follows:

|----------------------|------------|-------------|---------|-----------------|

**Table 1** Inventory, Attitudes to Statements

\(^{37}\) Taken to the nearest whole number. It seems futile to report to 2 decimal places in this context.

\(^{38}\) This lack of children and youth was quite likely a reflection of the age profile of the congregations concerned.

\(^{39}\) Appendix 6

\(^{40}\) Appendix 7

\(^{41}\) [http://www.prepare-enrich.com](http://www.prepare-enrich.com)
The statements tested participants’ perceptions and opinions concerning the matters raised in the focus groups: awareness of a world-wide environmental crisis; awareness of local environmental problems; opinions regarding the Church’s and the local congregation’s awareness and knowledge of and involvement in addressing these issues; knowledge of what the Bible and Christian theology has to say about environmental issues; and personal attitudes towards the environment and environmental theology. Three of the statements were duplicated, two using the same wording and one using a different form of words, to provide an internal test for consistency of responses.

The Inventory also contained 8 “supplementary statements” that required written responses of a qualitative nature. For the last 2 focus groups held 3 further supplementary statements were also added. A few participants were able to return their inventories immediately after their focus group had concluded, but most returned their inventories to the researcher either in stamped, self-addressed envelopes provided or in a bundle collected by the group’s contact person.

Thus 3 complementary means of obtaining data were employed. The focus groups were the primary means, for they were best suited to a theological researcher with “ears to hear”. The inventories, however, gave opportunity for participants to express things confidentially by both quantitative and written means that they may not have wished to express publicly in the focus groups. The Supplementary Statements gave participants the opportunity to express nuanced opinions (impossible using the Inventory) privately (impossible in Focus Groups). Since the written responses were submitted together with the responses to the Inventory it is possible to form an understanding of the ecotheological stance of the 53 respondents, even though a minority who filled in the Inventory did not make Supplementary Statements in answer to some or all of the questions. A summary of responses to the inventories is contained in Appendix 8. An assessment of the short answers will be woven into the discussion which follows.
In accordance with the practice of Charles Sturt University’s Ethics in Human Research Committee all responses were de-identified. The chronological order in which focus groups were held around the Murray-Darling Basin was not the same as the alphabetical order given at the beginning of the Method section. However, if closer analysis of the data is required or further surveys are to be attempted in the future it would be possible to contact participants again.

Not all of each focus group meeting was recorded. On several occasions technical errors, such as recording over previously recorded material, were made. In addition transcriptions are summary in nature rather than being verbatim. Instead, the researcher has summarised some of the discussion and quoted material he considered important. It would be possible to provide verbatim transcriptions of the material on tape if that was ever considered necessary. However, for the purposes of this pilot study the amount of data collected has been sufficient for the level of generality at which it has been analysed.

**Ears to hear: “Listening” to the Inventory**

As indicated above both the Focus Groups and the Inventory explored participants’ perceptions regarding environmental crisis, the churches’ response, and biblical and theological resources available to Christians with regard to the environment. Although the primary task of this field study was to listen and the primary means of listening was by the focus groups, what was said in these was so diverse that a simple statistical summary of individual responses to the Inventory will aid in discerning themes from the various focus group conversations. 53 of more than 80 participants, several of whom did not attend the focus groups, returned inventories. The encouraging response of about 60%, indicates that participants found the exercise worthwhile. For the purposes of this exercise the 53 respondents are treated as one group of Uniting Church-related people from the whole of the Murray-Darling Basin.

28 Statements in the Inventory pertaining to *Environmental Health* tested both participants’ *Perceptions* of the *General Environmental Health* and the
Environmental Health of Waterways, Worldwide, in Australia, in the Murray-Darling Basin and in each participants’ Locality; and their Confidence or Concern about Environmental Health in each of these contexts. Fig 5 shows the summary responses to these statements. The figures in each box represent the Average and Standard Deviation of participants’ scores for each of these categories. The scoring method used means that the minimum possible score is 1, and the maximum is 5.

<table>
<thead>
<tr>
<th>Perception of Environmental Health</th>
<th>General Environmental Health, Positive Statement</th>
<th>General Environmental Health, Negative Statement</th>
<th>Environmental Health of Waterways, Positive Statement</th>
<th>Environmental Health of Waterways, Negative Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>2.06, 0.91</td>
<td>3.89, 0.91</td>
<td>2.15, 0.82</td>
<td>4.08, 0.88</td>
</tr>
<tr>
<td>Australia</td>
<td>2.35, 1.03</td>
<td>3.77, 1.00</td>
<td>2.36, 1.13</td>
<td>3.81, 1.07</td>
</tr>
<tr>
<td>Murray-Darling Basin</td>
<td>2.49, 1.12</td>
<td>3.87, 1.07</td>
<td>2.28, 0.97</td>
<td>3.68, 1.09</td>
</tr>
<tr>
<td>Locality</td>
<td>2.79, 1.13</td>
<td>3.58, 1.11; 3.54, 1.09</td>
<td>2.74, 1.13</td>
<td>3.58, 1.20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Confidence or concern</th>
<th>World</th>
<th>Confidence or concern</th>
<th>World</th>
<th>Confidence or concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>2.66, 1.18</td>
<td>4.26, 0.68; 3.55, 1.15</td>
<td>4.08, 0.83</td>
<td>Confidence or concern</td>
</tr>
<tr>
<td>Australia</td>
<td>4.23, 0.61</td>
<td>4.17, 0.64</td>
<td>4.13, 0.79</td>
<td>Locality</td>
</tr>
<tr>
<td>Murray-Darling Basin</td>
<td>4.23, 0.58</td>
<td>3.79, 0.93; 4.00, 0.66</td>
<td>4.13, 0.79</td>
<td>Locality</td>
</tr>
<tr>
<td>Locality</td>
<td>4.00, 0.98</td>
<td>3.79, 0.93; 4.00, 0.66</td>
<td>4.13, 0.79</td>
<td>Locality</td>
</tr>
</tbody>
</table>

Table 2 Inventory, Perceptions of Environmental Health, Confidence or Concern Regarding Environmental Health Averages and Standard Deviations of Response Scores
An average score of less than 3 indicates that on average the participants disagreed with the statement; a score of more than 3 indicated on average agreement. The smaller the standard deviation of scores for a statement the more the participants agreed with each other; the larger the standard deviation the more they disagreed with each other.

*Perceptions of Environmental Health* were tested with both positive and negative statements. This was a way of testing that participants understood the procedure. Two statements were repeated using identical wording and another using different wording as further checks.

Table 2 indicates that on average respondents perceived that both the general environmental health and the environmental health of waterways in each of the four contexts – world, Australia, Murray-Darling Basin and their own locality – has declined, or declined markedly during their lifetimes. Participants consistently disagreed with positive statements about environmental health in these contexts and agreed with negative statements. However, although the 56 statements were distributed randomly the strength of both disagreement with negative statements and agreement with positive statements weakened as statements successively focussed participants’ attention from the world to their own localities. Moreover, the Standard Deviations consistently increased according to this progression from global to local, indicating that participants’ responses diverged more.

Once again, this pilot study does not claim statistical significance for its results. What look like trends in Table 2 may be shown by a more thorough research not to be meaningful. Nevertheless, since these apparent trends appear related to context or locality one might surmise that participants’ perceptions of degradation of general environment and waterways appears to weaken and become more divergent as the context becomes more local because participants know their local situation and feel responsible for it. While it is relatively easy to believe something negative of a situation one knows little of and has invested little in personally, it is common to feel senses of pride, ownership and belonging towards one’s own region and locality. A relative stranger from the city investigating one’s own locality is
likely to complicate one’s perceptions further. In view of the strong feelings of resentment towards outside interference reported in the discussion of the focus groups, participants’ solid reported perceptions of local environmental degradation is probably honest.

Table 2’s second category, “Confidence or Concern” was tested for almost entirely with negative statements such as “The environmental health of the Murray-Darling Basin’s waterways concerns me.” Participants’ disagreement with the sole positive statement, which invited confidence in the world’s environmental health, once again confirmed their agreement with two negative statements on the same issue. However, the lack of counter-balancing positive statements and the ambiguity of the term “concern”, which can have both positive and negative connotations, are weaknesses in the method and mean that less weight can be given to participants’ responses than for the “Perception of Environmental Health” category. Nevertheless, the fact that Standard Deviations tended to be smaller in the “Confidence or Concern” category indicates that participants agreed more strongly with each other, which in turn suggests that participants did not in general find the term “concern” ambiguous. Additionally, the generally strong agreement with the negative statements, which did not as obviously weaken as participants considered more local contexts, indicates that this group of Uniting Church-related people was worried, both about the environment generally and about its waterways. In particular, they feel that the Murray-Darling Basin’s waterways and their own local waterways have been significantly degraded, and they are really concerned about that.

A further 20 statements in the Inventory pertained to the Churches’ responses to environmental crisis. Of these 2 addressed the Christian Church in general, a further 2 concerned the Uniting Church, 11 invited participants to consider their local congregation and 5 looked at Christian living and the individual. Participants disagreed on average with both contradictory statements concerning the Church universal, considering neither that the Christian Church “is not interested or involved in addressing environmental concerns” nor that it “is prominent in addressing
environmental concerns.” They responded similarly to the pair of contradictory statements about the Uniting Church. Even less, on average, did they feel that the Uniting Church was “at the forefront of addressing environmental concerns” than that the Christian Church at large was prominent in these matters. On the other hand, the average response to the negative version of that statement, that “the Uniting Church is not very concerned about addressing environmental concerns”, was almost exactly neutral. Possibly these lukewarm, contradictory responses to statements about the Church-in-abstract reflect a perception on the part of participants that the Church is itself lukewarm on environmental matters. Possibly, too, it stems from a feeling, common in places where people perceive themselves to be remote from where power is exercised, of disengagement from the Church at large.

Responses to the 11 statements which invited participants to reflect upon their own congregations’ attitudes, policies and actions regarding the environment elicited a similar sense of lukewarmness. In summary, participants felt on average that few environmental initiatives came from congregations in which they were involved. Such environmental initiatives that were taken came from individual members. However, participants felt comfortable about raising environmental concerns and ideas in their congregations.

Specifically, participants from these 8 Uniting Churches across the Murray-Darling Basin felt that their respective congregations had not frequently expressed interest in and concern for the environment in preaching, worship, Bible and theological study groups, or in practical ways, either together or through individual members. In their opinion there was not, on balance, an explicit, thorough-going commitment to the environment in their congregations. Instead, participants felt most strongly that expression of environmental commitment by members of their congregations tended to occur more on an individual basis than as part of what the congregation did together. They also felt that any environmental activities engaged in by their congregations tend to be “once-off” rather than part of an on-going commitment. On the other hand participants did not feel that others in their
congregations were disinterested or even hostile to expressions of concerns about the environment or that it was difficult for them to raise and discuss environmental concerns in their congregations. On the contrary, they felt accepted, listened to and comfortable when they raised such concerns.

The other 5 statements pertaining to the Churches’ responses to environmental crisis concerned Christian living and the individual. 4 of these consisted of two sets of opposed pairs. The participants clearly affirmed that “practical Christian living strongly involves caring for the environment”, and contradicted its opposite. However, there was weaker agreement with “Christians are at the forefront of addressing environmental concerns”, and the average response to its contradiction was almost exactly neutral. Not many participants were familiar with the term “eco-congregation”.

The Inventory’s other 8 statements also consisted of 4 opposed pairs. These tested the extent to which participants believed there were biblical and theological resources for living Christianly in nature. On balance the participants showed themselves to be ecotheologians. They agreed that “an emphasis on the environment is central to the Christian message” and “the Christian faith is deeply concerned with environmental matters”. Consistent with this they disagreed with these statement’s opposites, that “an emphasis on environmental concerns draws Christians away from the central matters of the Christian message” and “environmental concerns are of little relevance to the Christian faith”. Likewise, they felt that “environmental matters figure prominently in the Bible”, not that “the Bible has little to say about environmental matters”, and that “the environment is an important subject for Christian theologians to address”, not that “Christian theology has little to contribute to matters concerning the environment.”

The participants in this field study were not a random sample of Uniting Church-related people. Several were ministers and others were key lay leaders. These were some of the more motivated people in their congregations. Still others were not normally involved in the congregation at all. They had become involved in this field study because of their
particular interest in the environment. Many held or had held leadership roles in their local communities. The story that they told through the Inventory was that they were concerned about environmental degradation, they believed that the Church was both called and equipped to be a part of the solution but that, by and large, many others in their congregations did not realize or care that this was the case. Their theology was no longer heavenist; the comments of the young, devout woman in Broken Hill and the Swedish farmer no longer held true for them. Like the students at the University of Western Cape in Conradie’s and Martin’s case study they demonstrated a high level of environmental awareness. Unlike the participants in the South African study, however, the participants in this study recognize connections between their environmental commitment and their religious affiliation. The National Church Life Survey of 2006\footnote{www.ncls.org.au} included a number of questions on environmental matters on a form that was received randomly. Responses to these questions are likely to give a clearer picture of how “ordinary” church attenders in the Murray-Darling Basin relate their Christian faith to the environment in which they live that this field study. This group of just under 90 participants are more likely to provide insights into what the “advance guard” of congregational leadership think on these matters. It is now time to turn to the focus groups to hear in more detail what they were saying.

\textit{Ears to hear: Listening to the Focus Groups}

Each of the 9 Focus Groups lasted approximately 90 minutes. Despite following the Framework set out in Appendix 6 the 13½ hours of discussion was broad-ranging. That is a likely, even desirable consequence of using Mackay’s focus group methodology, but it means that those discussions were more difficult to summarize, and require a different form of analysis than responses to the Inventory. As with the methodology of Sinclair and Moran, what was said by participants in the Focus Groups both formed the researcher’s discussion and provided illustrative examples.
Additionally, the Focus Group Framework addresses a broader set of questions than does this thesis. Having obtained from the Inventory insights into both the broad set of issues around linking Christian faith and ecological interest and the narrower set directly relevant to the thesis I shall in this section focus on the latter. That this leaves much valuable material from the Focus Groups untouched indicates the importance of holding an ecotheological discussion in the churches. This material can, of course be the subject of future ecotheological consideration.

Across the 9 Focus Groups a variety of attitudes and beliefs was expressed. A number of the Focus Groups’ insights were the result of “deliberative” theology: participants had clearly thought through ecotheological issues and reached conclusions that they “owned”, even if they were contrary to their culture’s attitudes, beliefs and practices. Some focus groups exhibited “embedded” theologies. Such theologies tended to reflect more or less uncritically the values of the surrounding culture even if these were not funded by specifically Christian values, or the “heavenist” belief that dominates much Christian theology.

On the other hand several participants in one Focus Group expressed what may be described as “embedded” acceptance of a more “liberal” theology critical of heavenist belief, exemplified by the following:

Woman
“And you just know that if Christ came to see us today he’d be shocked by the idiotic way we quote bits of ancient texts [in the] face [of] such tremendous challenges. ‘To think that intelligent people,’ he would say, sitting down, quoting to each other chapter and verse of bits and pieces that were thrown together in books 2,000 years ago…”

Man
“…50 years after I died…”

Woman
“…yeah 50 years after I died anyway…and here we’ve got wonderful prophets like Annie Dillard…and you know…all sorts of people - aboriginal writers who are tell[ing] us about the beauty of the world, the importance and fragile nature of the balance in the world. Why aren’t you out there in the bush in the stillness on a Sunday morning listening to the magpies call and meditating on the absolute gift and marvels of photosynthesis?’ That’s what he’s be saying. You know it’s just not good enough.”
A number of focus groups demonstrated both embedded and deliberative theologies, leading on occasion to vigorous discussion. In several groups participants were helped to new ecotheological insights. I asked one focus group in which an evangelical, anthropocentric theology was evident what it was according to John 3:16 that God so loved. The consequent snippet of the conversation showed an embedded theology colliding with a new thought being deliberated within a small group setting:

“Man 1

None of the commandments refer to the environment. They refer to God and to other people.

Man 2

People who care for each other will tend to care for the environment.

Woman 1

I’m blown away by [that interpretation of] John 3:16.

Man 3

Even the rocks and …trees will praise God. God is within, sustaining [creation].

Man 1

Noah’s Flood – God can destroy this world again.

Researcher

Doing ecotheology helps you to read the biology in a new way.

Man 3

[It’s about the] World – not just people.”

To delineate the parameters of this broad range of ecotheological thought I go to the European settler heart of the Murray-Darling Basin, the areas of Riverland, on the lower Murray River in South Australia and Sunraysia, around the towns of Mildura and Wentworth near the junction of the Darling and Murray Rivers. It was these two regions that the Chaffey brothers founded as irrigation projects. Here the sense of pride in human achievement co-exists with deep feelings for the landscape which sustained them and their predecessors, and which they have transformed. The tug-of-war between pride in achievement, love for landscape and worry over current ecological crisis produced divergent attitudes.

43 “The world”, not “people”. I received this method of challenging embedded theology from Barry Leal in personal discussion. Evangelicals in particular have an anthropocentric interpretation of John 3:16 as part of their embedded theology.
So, for example, Harold, a participant from Mildura spoke of how his pioneering grandmother

“…acquired a powerful connection to that hostile bit of dirt”.

As he explained this paradox it became apparent that for Harold the identity and sense of community of Sunraysia’s “blockies” had been powerfully formed by what they perceived to be the hostile forces of the landscape and uncaring, distant governments and city-dwellers. Both of these great, hostile forces had to be dealt with and, if possible, tamed. The power of Harold’s grandmother’s connection with the “bit of dirt”, her block by the river, was derived in part from its perceived hostility. This sense of the land being hostile, and a force which must be conquered, is a common theme in Euraustralian literature. It is funded biblically by a traditional, often embedded interpretation of Gen. 1:28 and, even though it was a “land flowing with milk and honey”, by the whole archetype of taking the Promised Land. The attitude was further epitomised by a joke told in another Focus Group situated in an irrigation area, at Coleambally. As an indication that the Protestant work ethic is not held only by Protestants, the participant who told the joke was a local Catholic:

“Priest What a beautiful farm you and God have here.
Farmer Yeah, but you should have seen it when God had it on his own.”

Of this attitude of conquering a hostile land indigenous novelist Melissa Lucashenko has written that Malcolm Fraser’s comment

“‘Life wasn’t meant to be easy’…summed up what Aboriginal people have always found most alien about European society: the Protestant work ethic; the idea that life is supposed to be a struggle to survive to appease those dangerous fools above you in the socio-economic hierarchy.

The Kombumerri intellectual and elder, Aunty Mary Graham, says: ‘One of the worst things that whitefellas did…was that they brought this terrible idea…that life was about survival; about being a convict or a soldier, ‘battling’ the land, and they have infected our people with this awful idea’ and just making it from day to day.”

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44 Names are changed to protect confidentiality.
45 Term for irrigation farmers. So called because they had been allocated “blocks” of land.
46 Melissa Lucashenko, "We Need Wisdom and Law, Not Stuff," The Sydney Morning Herald, Wednesday, September 24 2008.
Yet this “awful idea”\textsuperscript{47} is not held universally among whitefellas, or even among Protestants. While Sue, one of the participants in the Berri Focus Group, acknowledged that

“One factor is people make money out of this water, so it’s the source of riches in an economic sense…”

she stressed

“…the whole wider thing of feeling good about being part of the land, of being part of a whole lovely system when you think about yabbies and parrots and you know – families spending time on riverbanks and sandbars and camping and all that part of the social ecological health of the area gives a different perspective.”

Her husband “grew up by the river,” she said, continuing:

“When he comes to the river he becomes more peaceful, more contented, more himself….Being around the river is part of a healthy Tim.”

Only at this point did this participant relate to her Christian faith this sense of well-being caused by returning to the river:

“That’s where I come in from my faith perspective…Part of a healthy Sue…I’m a teacher…is teaching children to appreciate and be part of their wider environment because I do believe that children can’t be healthy until they are in touch with their environment which means to my mind putting them in touch with their Creator – their Father Creator.”

And she spoke of how healthy it was to put increasing numbers of troubled and hyperactive children into the bush.

Sue named in some detail what a number of participants across most of the groups spoke of, that the relationship between human and nature is properly one of love and mutual belonging. A normally taciturn farmer in the Glen Innes group said it more simply:

“I live for farming, absolutely love it, [It] feels close to real reality…the wilderness…[we need to] Be careful of what’s already there…”

\textsuperscript{47}This, in conjunction with the sense of antagonism to authority, has surely given us the phrase “little Aussie battler".
Passionate discussions in the Moree group about where floodwater flows, and in the Berri group about where salt moves underground betrayed that those participants, too, viewed their contexts with a loving eye. The participant in the Cunnamulla group who found that the tomatoes she prayed for prospered better than the (unprayed for) “controls” shared that love encompasses both the physical and the spiritual. Participants in a number of groups realized that the opposite of love for nature was not hate, despite the supposed hostility of the Australian landscape, but greed.

Additionally, a number of the groups expressed confidence in the ability of people on the land to deal with local and regional ecological problems. Participants justified this seemingly bold assertion by pointing to progress in farming techniques over the past 25-40 years, citing measurable improvements in water quality, improvements in the efficiency of irrigation and the like. Only in the single urban group, associated with St Ninians’, Canberra, was there a sense of guilt over how humans have treated the environment and fear for the ecological future:

“Woman 1 [There’s a] big El Nino [event] every 5 years, with little ones between. Sea levels [are] rising, sea temperatures increasing.

Man [The] Antarctic iceshelf [is] melting. [There’ll be a] chain reaction.


Woman 2 [We’ll be] building mausoleums to keep bodies.

Researcher [It sounds as though you] fear for [the] future.

Several people [We are] certain that some or other man-provoked environmental catastrophe will devastate the world in coming decades.

Researcher Do you bear a sense of guilt?

Woman 1 Yes. [We] Haven’t been good stewards.

Woman 3 [There are] Too many of us.

Woman 2 Not guilt, but contrition.
Woman 1: No. [We feel] Guilt in a drought, but when things get back to ‘normal’ the sense of guilt disappears.”

Significantly, perhaps, even in this theologically least traditional of the Focus Groups the Stewardship model\(^\text{48}\) was the dominant model by which people saw themselves as relating with Creation. Although participants in many groups spoke of loving nature a number of groups gave alternative theological models of relating to Creator and Creation short shrift. For these people on the land it is clear that humans are in control. That the Canberra participant, member of a group that was probably the least theologically conservative, ascribed our ecological guilt to not having been good stewards rather than thinking that we might need a new way of relating to Creation indicates how embedded the Stewardship model is among Christians in the Murray-Darling Basin. The following excerpt indicates that a form of the Stewardship model self-described as “benevolent dictatorship” held sway in the Moree focus group. It was not out of place in any of the groups:

“Man 1: [I built a] 100 acre dam with great birdlife. [I’m] never satisfied that [I’m] doing what God wants me to with the environment, but God has created something new[with this dam].

Woman 1: “Subdue” [means to] look after,


Others: [It also means] “manage”.

Woman 1 then invoked the image of leadership of a Church fellowship. This, she felt, was:

Woman 1: “…easy to subdue – reign over, look after, care for, in the way God looks after us, caring, loving.

Woman 2 provided a second example from her hobby of birdwatching that corroborates well with McFague’s image of “looking with a loving eye”. She spoke of drawing closer to look closer, but of not disturbing the birds she watches.

Man 1 said that his garden had been spoilt by snails, so he changed the
garden. This, for him, was an example of stewardship. It was Man 3 who
described humans as being like “[a] benevolent dictator”, remarking that:

[A] Good ruler brings out the best in [his/her] subjects.
We are the dominant [species, so we should be like this.]

Woman 2’s facetious response revealed something of her attitude to headship:

“Do yourself a favour – love your wife!”

It seems that Woman 2 was willing to cede headship in marriage to husbands in the expectation that they would love their wives. Not surprisingly, two men were happy to build upon Woman 2’s response:

“Man 2 [We humans are to] dominate in love. We get to dictate.
Man 3 Totally motivated by God.”

The question is whether even this “love-driven” version of the Stewardship model works. It claims its biblical justification in the incarnation of Christ, but does the Euraustralian Christian tradition’s ecological record in the Murray-Darling Basin justify this claim? It was Sue from Berri who addressed this thesis’ major question – Lynn White’s ecological complaint against western Christianity – most directly. Though each of these expressed themselves differently Sue agreed with both Melissa Lucashenko and Lynn White:

“I feel really strongly that Christian tradition has been responsible for a lot of our exploitation of the environment. When the first Europeans came to Australia they came with a view to exploit the land and they did it very, very well…. I remember my mum and my dad’s and my grandparents’ philosophy that they would have considered scriptural – that you populate and dominate the land. That is your Christian duty to do that. You go forth and you take charge of the situation and you make it work for you and you dominate the land.

I’ve been interested in a little country called Bhutan who I think is Buddhist is it?....A country that rates its progress in Gross National Happiness or something like that rather than Gross National Product. That’s a totally different frame of mind that says that we as humans are part of creation, and part of our role is to revere and respect and be part of creation, not to exploit it but I do believe that Christianity

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49 Eph. 5:22-33; Col. 3:18-19
50 These were not married or in a relationship.
and its driving capitalism and stuff that went with it is really responsible for exploitation – thinking in terms of exploitation. Which is what we've all been talking about, is that Europeans have exploited this country.

And I really think that the Church could be standing up and saying a lot more about reining in the greed, living simply enough. We use a couple of phrases – ‘Live simply so that others may simply live’ – I think that unless we take that on board we're all down the floodhole….But our philosophy of populate and dominate – if you read Genesis you can see that point of view, but I don’t think that that’s what God intended when He gave us those Genesis scriptures. I think those New Testament scriptures that say that we are part of creation that all creation groans in response to the Spirit, that we are all part of – that's the bit we should be looking at more to …and the Uniting Church could be taking a much stronger role than it does now. I really think that we are…‘Let’s sit back and not get into that stuff.’"

‘Sue’s’ local testimony supports White’s global argument, and is all the more valuable for being expressed in the context of a group that was ecologically and theologically knowledgeable and passionate, and of an area at the heart of the Euraustralian Murray-Darling Basin.

**Ears to hear: Listening for Attitudes in Supplementary Statements**

As mentioned, the third means of “listening” employed in this field study was to encourage participants to write short “Supplementary Statements” to a number of questions that explore the same general issue: how Christians relate their faith to the environment in which they live. No comprehensive analysis of these responses has, however, been attempted. The questions, seen at the end of Appendix 7,\(^{51}\) raise issues too broad to be covered in this thesis. Once again they and their responses may point the way in further research concerning how Christians relate their faith to the environment in which they live. Because this thesis responds to White’s ecological complaint only responses to Question 8,

> “What, to you, does the Christian faith have to say to the concerns in our society about environmental degradation?”

have been studied, and in isolation from the same participants’ Inventory responses.

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\(^{51}\) In several Focus Groups 3 extra questions were added to the response sheets by hand. These are not seen in Appendix 7.
Responses to Question 8 varied markedly. One response was a succinct “Very little”. One might from the foregoing suspect that this response was motivated by a dualistic, heavenist, embedded theology, perhaps influenced by the Deism of the British colonial rulers, but without knowing the person concerned that would be a premature conclusion.

All others who responded, however, felt that Christian faith did have things to say to society about environmental degradation. Since respondents from all but one of the focus groups came from rural communities their responses not unnaturally were informed by their agricultural experience as well as their Christian faith:

“...we can only care for our own small patch. We must have lots of patience; pray frequently;...seek the advice of experts;...There must be the constant sharing of resources, and a sensitivity to the needs of others for the continuation of life and happiness on this planet, Earth.”

In accord with the Focus Group discussions most respondents adopted some form of the Stewardship model, as exemplified by this response:

“‘The earth is the Lord’s and the fullness thereof.’ We are stewards entrusted with its care and the competing demands of profit and sustainability must somehow be matched.”

What, however, does it mean to be a steward? For this respondent we must make a profit from God’s earth, otherwise there would be no need to match the competing demands of profit and sustainability. Although the respondent may be so caught up in our economic system that s/he has not questioned theologically the profit imperative, s/he may, like former Australian prime minister John Howard, be motivated by a theology based on the parable of the talents\(^{52}\) and expressed in the poem “The Pioneers”.\(^{53}\)

Another respondent used the term “custodian” to describe our relationship with creation. In Australia “custodian” has commonly been used by Aborigines to denote their relationship with the land. Euraustralians and Aboriginal Australians are likely to mean different things by “custodian”,

\(^{52}\) Matt. 25:14-30; Luke 19:12-27
\(^{53}\) Frank Masters, See Appendix 2.
by virtue of the two cultures’ different worldviews. That, however, is an issue that can be addressed elsewhere. Although derived from different languages the words “steward” and “custodian” share a similar etymology.\textsuperscript{54}

There seem in the thinking of the respondents to be several elements to the Stewardship model, which the following response clarifies:

“God gives us authority to use and handle the environment so [as] it is kept in perpetuity. As Christians we have a responsibility to do this.”

The elements are:

- God has given authority and responsibility to humans.
- We are to “use and handle” the environment.
- The purpose is to keep it in perpetuity.

Perhaps because farmers “use and handle” the environment as a matter of course, the first two elements were almost universally accepted among the Focus Groups in the rural towns. White’s characterisation of western theology as “voluntarist”\textsuperscript{55} was strongly borne out in this field study, and by responses to its Supplementary Statements. Concerning the third element, responses varied considerably concerning the purpose for doing this. This respondent noted only that the environment should be “kept in perpetuity”.

Another element in responses to Question 8 might be called “Confession”. One respondent wrote:

“…God has given us the priviledge (sic) of tending his creation and we are not doing a very good job.”

Two different responses from respondents in the one urban group varied from the stewardship model so common among the rural respondents. One viewed both the Bible’s ecological views and geology itself from an historical perspective. This respondent argued that when the Bible was written human control over nature was far less pronounced than it appears to

\textsuperscript{54}“Steward” has developed from the Old English “stig-ward”, the warden of a house or hall; “custodian” from the Latin “custos”, meaning “guardian”.
\textsuperscript{55}White, "The Historical Roots of Our Ecologic Crisis."
be now. Therefore “stewardship” had more to do with long-term human survival than the survival of nature. Noting various geographical catastrophes the respondent wrote that, despite appearances, this is still the case. Even if humans arrogantly overuse the earth’s resources and provoke ecological catastrophe the earth will survive in some form. Humans can only use, not create resources, so the onus on any future civilization will be to use resources sustainably. Reflecting theologically upon this the respondent argued from an almost panentheistic perspective that to hurt nature was to hurt God:

“The major thrusts of Christian faith are care for others and a relationship with God, the creator of all. God is in us and in everything around us. Damage to our world damages our relationship with God and harms other people ultimately.”

For the other urban respondent creation and Creator are separate, but

“God/Christ loved/loves the world and all creation…and must weep to see how we have despoiled our natural environment.”

This respondent’s theological insight was not that God is in nature, but that “nature is our neighbour”:

“We are told to love our neighbours and be concerned for their welfare which surely means concern for all creatures and life on earth.”

The first urbanite’s ecotheology was based upon the first Great Commandment; the other on the second. Both had gone beyond the Stewardship model to models based on love.

Another element to emerge was the inclusion of the environment as an appropriate subject for social justice along with humans. The following quote, however, shows just how anthropocentric Christians can still be:

“I see the Christian faith encouraging better human standards of interaction and acceptance of each other as the main issues.

Concern for fellow human beings will then flow on to be concerned about the environment in which they live, because the local environment of the people we are concerned about will influence the way and standard of life they can live.”

There is no sense in this participant’s thinking that the environment is worthy of care for its own sake. The attitude exemplifies why a number of
theologians and environmental thinkers are doubtful as to the stewardship model’s capacity to motivate humans to care for creation. Ultimately, stewardship is still for human benefit. A number of other participants, thinking similarly, argued that we should care for creation so that “our children” will not inherit a worse world than we did, or “for the sake of generations to come”. Though the motivation is strong and sounds unselfish it is still anthropocentric. Given recent advertisements advising parents to “take revenge on their kids” by spending the inheritance on overseas holidays one wonders whether even this motivation will hold.

Not that concern for other humans is wrong per se. One respondent, citing the “Golden Rule”, argued that since “the Murray is the source of irrigation water it must be contaminated as little as possible as it flows past us [so that] those further downstream are disadvantaged as little as possible by our livelihood and use of water.” What, however, might it mean “to do unto the Murray as you would have the Murray do unto you”?

On the other hand, a number of participants spoke of loving nature. One respondent expressed it like this:

“To have complete Christian faith means to love your neighbour as yourself and to love nature and the environment in which it operates is vitally important…”

There is still a hint of nature being the stage for the human drama in this, but this attitude is moving away from being purely anthropocentric.

As was the case in the Focus Groups a number of respondents identified the basic human sin as greed. One respondent put the matter gently:

“Greed sometimes drives us to be hard on our environment. To have slightly lower production/returns but have a ‘happier’ environment.”

This respondent then wrote something theologically profound:

“To work with God in his garden is a blessed opportunity” – we can work together (God and us) to slow/reverse degradation.”

56 Italics mine.
Though this needs to be tested further, many respondents to the Supplementary Statements and participants in the Focus Groups appeared to have an understanding of stewardship that was informed by a Deistic understanding of God. Like the landowner in Jesus’ parable of the wicked tenants, God is thought to be an absentee landlord, transcendent rather than immanent. This understanding of God implies that the whole responsibility of caring for creation rests on the lonely shoulders of the human stewards. As the parable highlights it also facilitates the temptation to take over the ‘vineyard’.

This respondent’s immanent understanding of God has transformed her/his understanding of how humans are to relate both to God and to the rest of creation. Creation care has become a cooperative venture between humans and God. I shall write more on the implications of this view in chapter 9, but it certainly transforms our understanding of stewardship. Seen from the perspective that our responsibility is to cooperate with an immanent God in restoring, tending and caring for creation prayer takes on another layer of meaning:

“I often pray especially during drought,” wrote one respondent,

“…for God to send rain for the trees and shrubs, and wild animals and birds.”

Looking back and forward

This chapter, in which I have reported and reflected upon an ecotheological field study, completes Part II of the thesis. By reporting on how fewer than 90 people believe that they relate their Christian faith to the environment in which they live the chapter may have done both too little and too much. It has asked some questions that were not necessary for the thesis topic of a group of participants too small to provide statistical security for conclusions reached.

Nevertheless, this chapter is important for several reasons. Firstly, it reports a process of listening to those who are the thesis’ most obvious subjects,
church people who live in the Murray-Darling Basin. The clearest lessons of the Field Study concerned the suspicion, even antagonism people on the land in the Murray-Darling Basin feel towards people from the cities, and the often different perspectives they have on ecological questions.

Secondly, the chapter has explored contextual and qualitative methodologies for doing theology. An ecotheological reading reads material presented to it which can be both quantitative and qualitative in nature.

Thirdly, the chapter brings up to the present considerations introduced by the historical research in chapters 5 and 6. Its conclusions are consistent with those of the previous chapters. Although varied, the views expressed in the context of the 9 Focus Groups connected to 8 Uniting Church congregations around the Murray-Darling Basin, when viewed from the level of generality at which Lynn White was arguing, fit the overall pattern of western Christianity that he critiqued.

Having now completed Part II, an ecotheological reading of how European settlers have affected the Murray-Darling Basin’s waterways, it is time to proceed to this thesis’ third and final Part. In Chapter 8 I shall conclude whether or not Lynn White’s “ecological complaint” is justified and in the final Chapter I shall introduce a “theology of rivers” as an ecotheological way forward for Christianity.
Part III
Conclusions & Ways Forward
Chapter 8
Those Transcendent, Anthropocentric Europeans!

Introduction
As is evident from Parts I and II the Murray-Darling Basin’s waterways provide a helpful context in which to reassess Lynn White’s argument in *The Historical Roots of our Ecologic Crisis*\(^1\). The Basin’s sensitive, unique ecological character and its European colonization give it ecotheological significance. Because of the glocal nature of both theology and ecology, insights drawn in this local and regional study have implications for a global thesis such as White’s. Its support means that White’s global thesis is more likely to hold globally but its opposition would cast doubt on White’s global argument.

Having reviewed White’s paper in Chapter 1 and the Murray-Darling Basin as a landscape in Chapter 3, and examined in chapters 4 to 7 how first the Aborigines, then the European settlers I have called Euraustralians have affected the Basin’s waterways, I shall in this chapter assess how both Aboriginal and Euraustralian societies in the Basin matched up against the key factors and the conclusions of White’s argument. I shall then be in the position to determine whether this case study supports White’s ecological complaint or not. However, I also need to examine the major alternative position referred to in Chapter 1 – that Christianity is properly eco-friendly, and that the current, world-wide ecological crisis is essentially a consequence of the Enlightenment. This requires me to re-examine whether the Enlightenment is to be considered a movement derived from western Christianity or one which, although it developed within that context, is alien, even inimical to the religion which fostered it. Consideration of this complex question leads me to consider two key factors – why modern, western Christianity so commonly believes that God is transcendent, and why it is so frequently anthropocentric.

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\(^1\) Lynn White, "The Historical Roots of Our Ecologic Crisis," *Science* 155, no. 3767 (1967).
The opportunity in ecological crisis for the Church is to restore an understanding of the Trinitarian God who is both transcendent and immanent, and a biocentric Gospel that is the Mission of this God who loves not simply humans but the world. To lose this opportunity would be a tragedy. I conclude the chapter by examining a number of theological models for living in Creation. That leads to the penultimate chapter in which I develop my own “Ecotheology of Rivers”, based upon the biblical motif “the river of the water of life”.

**White’s “Christian Axioms” and Conclusions**

That there *is* an ecological crisis was White’s starting assumption which he supported with a number of examples. In the four decades that have passed since *Science* published White’s paper his contention has been confirmed, dramatically and worryingly. This crisis has been brought about, argued White, by the *combination of modern science and technology*, which have themselves grown together from several *historical roots*. Modern, western *democracy* that broke down class divisions which had previously kept these two activities apart is one such root. It rates only passing mention in White’s paper, for he is more interested in the deep taproot of western Christianity, but should be researched. The *Western, “instrumental”, exploitative worldview* is another such derivative root.

White considered that the most basic historical root, the taproot, is *religion, specifically the western (occidental) form of Christianity*. He introduced the notion, perhaps novel to many secularized westerners, that

> “Human ecology is deeply conditioned by beliefs about our nature and destiny - that is, by religion”.

Becoming more specific he wrote that,

> “We continue today to live, as we have lived for about 1700 years, very largely in a context of Christian axioms”,

and took the reader through a number of these. Having considered White’s

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2 Since this section recapitulates my analysis of White’s article, which is only a few pages long I shall not give references again for the citations.
paper in Chapter 1 I shall now look at these axioms in more detail.

Christianity is highly teleological, White argued:

“Our daily habits of action...are dominated by an implicit faith in perpetual progress...rooted in, and indefensible from, Judeo-Christian teleology.”

Although we live in the “post-Christian”, secularised age this faith in progress stems from Christianity’s belief that time is linear, not cyclical, and, ultimately, that God is working to save humankind, even though salvation is commonly understood as taking humans out of this world, to heaven. Christianity’s belief that time is linear and not cyclical contributed to its striking story of creation, in contrast to the “singularly incoherent” creation myths of the Greeks and Romans in which the idea of a beginning was made impossible by their cyclical view of time. Christianity’s creation story placed humans at the centre:

“Especially in its Western form, Christianity is the most anthropocentric religion the world has seen.”

Citing the early Church fathers Tertullian and Irenaeus, who insisted that Adam foreshadowed the image of the incarnate Christ, White argued that in western Christianity

“man shares, in great measure, God’s transcendence of nature.”

The duality of humans and nature resulted in western Christian theology’s insistence

“that it is God’s will that man exploit nature for his proper ends.”

One practical effect of this transcendence of both God and humans is what might be called the “de-spiritting” of nature. Following Christianity’s defeat of paganism humans acquired an

“effective monopoly on spirit in this world”. No longer did people within the sphere of western Christianity’s influence feel the need to deal with the guardian spirit of each place. The ecologically negative effect of destroying pagan animism was that

“Christianity made it possible to exploit nature in a mood of indifference to the feelings of natural objects.”
Add to all of this the *voluntarism* of western Christianity\(^3\) and the development of *natural theology* in the West as the attempt to understand God’s mind by discovering how His creation works, (rather than Eastern Christianity’s “artistic” view of creation

“as a symbolic system through which God speaks to men”) and the result was an activist culture that regarded humans as superior to nature, and not part of the natural process, but which nevertheless learned to exploit nature through the development of the natural sciences without any of the real restraint imposed by a religious worldview. This western (occidental) form of Christianity underlies science, technology, their conjunction, and the western worldview which over the past 500 years has come to dominate the world. If, as seems to be the case, the power that science and technology have given humankind over nature is out of control

“Christianity bears a huge burden of guilt”.

White concludes this disturbing analysis by lambasting the anthropocentric view of nature held by many of his Christian contemporaries.

*The Murray-Darling Basin’s waterways question White*

Are these conclusions, drawn at a high level of generality, borne out by the way in which Euraustralian settler society has affected the Murray-Darling Basin’s waterways? I have approached this question by comparing the Aborigines and the Euraustralian settlers who lived by and affected the Murray-Darling Basin’s waterways with regard to the specific factors, ie. the assumption of ecological crisis, the “Christian axioms” and the conclusions, of White’s argument. The value of Aboriginal culture to this thesis is the contrast between the worldviews and ways of life of Aborigines and Euraustralians who have lived in the same country.

The following table lists each of White’s factors and, based on my learnings of Chapters 4 to 7, summarizes my assessment of how both Aborigines and Euraustralians in the Murray-Darling Basin stood in relation to them.

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\(^3\) Compared to the contemplative emphasis of Greek Orthodoxy: (ie. “The Greek saint contemplates; the Western saint acts.”)
<table>
<thead>
<tr>
<th><strong>Factor in White’s argument</strong></th>
<th><strong>Aborigines</strong></th>
<th><strong>European settlers</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Associated with ecological crisis?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Responsible for developing and using a combination of science and technology?</td>
<td>Limited</td>
<td>Yes</td>
</tr>
<tr>
<td>Democratic society?</td>
<td>Not in the European sense</td>
<td>Yes</td>
</tr>
<tr>
<td>Instrumental, exploitative worldview? (God’s will that man exploit nature)</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Worldview formed by the occidental form of Christianity?</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Christian axioms**

| **Teleology: Judaeo-Christian, with faith in perpetual progress** | No, believed in caring for & maintaining Country | Yes |
| **Linear understanding of time** | No, believed that time not so much is cyclical as that it folds back on itself, in the sense that people become their totemic ancestors. | Yes |
| **Creation story** | Diverse, “ecocentric” | Coherent, anthropocentric |
| **Anthropocentric?** | No, “ecocentric” | Yes |
| **Spirituality and humans transcend nature?** | No. Aboriginal spirituality emanates from the earth. | Yes, in large degree. Euraustralian spirituality “divorces” heaven and earth. |
| **“De-spirited” nature** | No | Yes |
| **Spiritually “voluntaristic”, action a popular expression of spirituality** | Yes | Yes. Both cultures are practical in their own ways. |
| **Natural theology** | Participation in the Dreamtime to care for Country rather than analysing how Country works. | The attempt to understand God’s mind by understanding how creation works. |

**White’s Conclusions**

<p>| <strong>Western Christianity underlay modern</strong> | Whether Aboriginal science and technology | The ecological quality of the Murray-Darling |</p>
<table>
<thead>
<tr>
<th>The Western Humans are part of</th>
<th>In general</th>
</tr>
</thead>
<tbody>
<tr>
<td>science and technology which have caused ecological crisis. (In that sense Christianity bears “a huge burden of guilt”.)</td>
<td>Basin’s riverine ecosystems has degraded greatly during the short time of Euraustralian settlement. Modern science and technology have brought great short-term benefits, but have caused an ecological crisis in the Basin’s waterways. Some of the ecological damage may be irreparable.</td>
</tr>
<tr>
<td>contributed to radically changing the Murray-Darling Basin’s landscape and hence waterways over millennia through, eg. firefarming and extinction of megafauna is the subject of debate. The clearest example we have of the waterways being affected are fish traps, such as those at Brewarrina, which caused minimal ecological effects compared with the structures built later by Euraustralians. Whether the Aborigines would have affected the Basin’s waterways more if they had developed the scientific and technological capacity to do so is a hypothetical question of the sort that Jared Diamond explores. Whether the Aborigines would have affected the Basin’s waterways more if they had developed the scientific and technological capacity to do so is a hypothetical question of the sort that Jared Diamond explores.</td>
<td></td>
</tr>
<tr>
<td>Although the specifics are unique to Australia and, if researched in fine enough detail, to the Murray-Darling Basin, the culture which brought this science, technology and worldview to the Basin is western European, undergirded and informed by several forms of western Christian faith. Even though the Murray-Darling Basin was settled during the Enlightenment when western culture was in the process of secularizing, the Euraustralians’ attitudes, worldview, and way they have affected its waterways confirm White’s thesis. The field study reported in Chapter 7 reinforced this finding.</td>
<td></td>
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</tbody>
</table>

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**Christian worldview:** “We are superior to nature, contemptuous of it, willing to use it for our slightest whim.” (Western Christians are anthropocentric.)

<table>
<thead>
<tr>
<th>Country and responsible for care of country.</th>
<th>Euraustralians feel that humans are superior to nature. At best participants in the field study felt that humans should ‘love nature’, and that our superiority over nature should be used benignly to help nature, but participants in the Field Study generally felt that human considerations take priority over those of the rest of the biota. That the feeling of superiority may allow feelings of contempt towards nature was not expressed in the field study but by the actions of some inhabitants of the Basin. The illegal clearing of wetlands and vast damming indicate effective contempt both for nature and for the legitimate needs and aspirations of other humans in the Basin. The expression “But doesn’t this world have a ‘use by’ date?” revealed a ‘heavenist’ view of humans vis-à-vis creation that occidental Christianity encourages, namely that nature is disposable and contingent, and that the main focus of Christians’ and humans’ activity should be in attaining and bringing people to heaven.</th>
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**Conclusion of the Case Study: Murray-Darling Basin’s Waterways**
Support White

A crisis is a time of intense difficulty, trouble or danger, or a time when a difficult or important decision must be made. The ecotheological readings in Part II confirm that, as Lynn White understood the world to be in ecological crisis, so are the Murray-Darling Basin’s waterways.

The effects that Euraustralians have had on the Basin’s waterways compared with those of the Aborigines support White’s further conclusion that “Christianity bears a great burden of guilt.” I interpret this to mean that the bulk of responsibility for this ecological crisis is ascribed to those whose culture has occidental Christianity as its basis. The historical roots of this crisis are the combination of modern science and technology, which has emerged from Democracy as it developed in western Europe over the past several centuries, the western (occidental) form of Christianity and the Western, “instrumental”, exploitative worldview. The experience in the Basin’s waterways also supports White’s thesis that from western Christianity came the attitudes that enabled modern science and technology to flourish in the Basin, alongside anthropocentric attitudes that placed human needs and desires above all else, and transcendent, dualistic attitudes that encouraged nature/creation to be treated as contingent and disposable. In summary, the ways in which Euraustralians have affected the Murray-Darling Basin’s waterways support Lynn White’s argument.

Consequences of this conclusion

Because of the controversial nature of White’s paper and the often-strained relations between a number of groups interested in this discussion I shall note first where this conclusion ought not to lead us before proceeding to where it does lead us.

It ought NOT lead us to “shoot the piano players” of science and technology. To engage in a polemic against science and technology would be naïve. Bjørn Lomborg’s argument that these have endowed their users with great blessings⁵ can also be demonstrated in the Murray-Darling Basin.

The extent of the ecological crisis, however, indicates that the use of science and technology have led humans to affect the Basin’s waterways unsustainably, so that they have been driven out of balance. While deriving economic benefit Euraustralians have used science and technology together so radically in the Basin and with so little knowledge of the consequences that great ecological damage has been done to the waterways. Nevertheless, it is not science and technology per se that are at fault, but the ways in which they have been used.

*Neither ought it cause us to “shoot” the users of science and technology in the Murray-Darling Basin.* This is not a polemic against the users of that science and technology in the Basin, who over the past 180 years have produced great wealth and benefits for themselves and society. Although the human costs to the people they displaced and the ecological costs of this wealth production are both now well-known, these disadvantages of the application of power that science and technology confer are a feature not just of Euraustralian settlement of the Murray-Darling Basin but of the application of western science and technology all over the world. We are all people of our time. Responsibility for the ecological degradation of the Murray-Darling Basin’s waterways cannot simply be ascribed to the Basin’s users. Australian society as a whole needs to take responsibility for the technological and scientific power we all wield.

By responding to the Basin’s particular ecological distress some of its inhabitants are ahead of their time. Many participants in my field study were aware of the complex ecological problems they and their forebears have caused by applying science and technology in relative ignorance of local environmental conditions. A number spoke of how much has been learnt and farming techniques have improved over the past 25 to 40 years. Others had been thinking through the theological and ethical implications of these problems. An ecotheologian can help in the latter process by pointing out the embedded theological assumptions and ideas that underlie even the seemingly most secularized western worldview and way of life, as well as by outlining various deliberative ecotheologies from around the world.
It ought not lead us “shoot the messenger”, White. By ascribing “a great burden of guilt” to Christianity, and claiming that Christians (feel we are) “superior to nature, contemptuous of it, willing to use it for our slightest whim” White made it inevitable that he would become the target of “defenders of the faith”. As reported in Chapter 1 an extensive, varied literature responds to White’s paper, much of it theological and doctrinal “defence” directed against its critique of western Christianity. White, however, was an historian who came to theology seeking to explain historical trends by examining how western Christianity influenced the western worldview. Few Christian apologists would dispute White’s claim that “Human ecology is deeply conditioned...by religion.”

Additionally, White worked at a high level of generality. Much of the more detailed theological criticism tends to miss White’s broad historical point. That the Murray-Darling Basin’s waterways have been pushed into ecological crisis during the past 180 years, at the very time the region was settled by a society whose religion is western Christianity confirms the broader pattern White’s paper addresses. Instead of criticizing White for raising these issues theologians could ask whether there is something about western Christian theology that predisposes to ecological destructiveness societies for which it has provided founding axioms. Fortunately, as indicated in Chapter 1, a number of theologians and other critics of White have done this.

On the other hand White’s conclusion does not lead us to “shoot Christianity”. On the face of it there would seem to be good reason to criticize and even to reject Christianity on ecological grounds. Although non-western, non-Christian cultures also cause ecological destruction it is cultures and societies that live very largely according to the axioms of western Christianity that White identified which are responsible for most of this. The effect Eurasustralians have had on the Murray-Darling Basin’s waterways, and the attitudes of at least some Christians living in the Basin provide confirmation of this in an Australian context. To this day many western Christians are heavenists who, even as they enjoy an ecologically demanding standard of living, insist that Christianity’s purpose is to save
people out of this world for heaven. If Christians continue to use the earth while not loving and caring for the earth we shall contribute to creating “hell on earth”. The reasonable question asked by many ecological opponents of Christianity, both within and without the Church, is how any religion that is so life-denying can have validity. Some have added that western Christianity’s disinterest in and even opposition to ecology is of a piece with its historical oppression of women and neglect of the poor, and have recommended radically reshaping the Faith, or ditching it altogether.⁶

For all his ecological criticism of occidental Christianity, however, White did not reject it. Rather, he suggested that Christians search within our traditions for what would now be called ecotheological resources, discussing St Francis of Assisi as an example. As indicated in Chapter 1 many theologians have heeded White in a process Clive Pearson describes as “the greening of theology”⁷. The rest of this and the final chapters seek to do likewise.

**Was the Enlightenment, not Christianity, the Ecological Culprit?**

In Chapter 1 I introduced the argument that the Enlightenment, not western Christianity, was the worldview responsible for attitudes leading to ecological degradation, particularly to the Murray-Darling Basin’s waterways. It is now time to respond in depth to this most likely alternative to White’s thesis.

The argument is quite complicated, for it leads to addressing another underlying question, the nature of Christianity itself. Space precludes addressing all the questions that flow from answering these two. However there are some fundamental philosophical perspectives that need to be surveyed. Why it is necessary to put and answer these at all? My answer to that question is that some sections of the church, particularly some from the Evangelical tradition that has fostered my own faith, deny White’s thesis on these grounds. “It is the Enlightenment”, they say. “Proper Christianity

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would not cause this.”

A number of Christian apologists who have argued this way are supported by the Chinese ethicist and new Confucian Tu Wei-Ming, whose perspective is unbiased by allegiance to Christianity. Although admitting that according to Max Weber the Protestant work ethic, which engendered the spirit of capitalism in western Europe and north America, did much to inspire the rise of the modern West, Tu’s main argument was that faith in progress, reason and individualism, all quintessentially Enlightenment values, propelled the West to engulf the world in a restless march towards modernity, and to set the stage for growth, development and exploitation:

“The unleashed juggernaut blatantly exhibited unbridled aggressiveness towards humanity, nature, and itself. This unprecedented destructive engine has for the first time in history made the viability of the human race problematical.”8

For Tu,

“Enlightenment as human awakening, as the discovery of the human potential for global transformation, and as the realization of the human desire to become the measure and master of all things”9

is the Enlightenment mentality that

“underlies the rise of the modern West as the most dynamic and transformative ideology in human history”,10

and is still the most influential moral discourse in the political culture of the modern age.

However, the Enlightenment has a dark side, an “unbound Prometheus’ that symbolizes “the runaway technology of development”:

“Despite impassioned reactions from the Romantic movement and insightful criticisms of the forefathers of the ‘human sciences’, the Enlightenment mentality fueled by the Faustian drive to explore, to know, to conquer, and to subdue persisted as the reigning ideology of the modern West. By the late nineteenth century, the Enlightenment mentality, revealing itself as “knowledge is power”

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9 Ibid. 22ff.
10 Ibid. 22ff.
(Francis Bacon), the historical inevitability of human progress” (August Comte), or the “humanization of nature” (Karl Marx), has become an intellectual source for social Darwinian competitiveness.”¹¹

This competitive spirit, justified by a simplistic understanding of the Darwinian “survival of the fittest”, provided in its turn a strong rationale for imperialism.

Tu located “what we have been doing to nature”, inspired by this Enlightenment worldview, as occurring

“in the last two centuries since the French Revolution, especially in the last four decades since the Second World War”.¹²

His mention of the French Revolution is significant, for one Enlightenment project highlighted by that cataclysmic event was to liberate humankind from the shackles of religion. Although at the level of generality at which White approached this matter the Enlightenment developed from western Christianity, in many respects it has been anti-Christian. Indeed, although Tu does not explicitly dissociate the Enlightenment from western Christianity he implies as much.

Among Christian theologians Alister McGrath has for some years argued that White’s argument was seriously flawed and that the Enlightenment is the real ecological culprit.¹³ For McGrath Christianity’s original view of humankind’s care-taking relationship with Creation approximates that of other religions, but not of what he first identifies as modernism¹⁴ and later, in a book dedicated to this issue, as the Enlightenment:

“…the grounds of our ecological crisis lie in the emergence of a worldview that proclaimed human autonomy and viewed nature as a mechanism subordinated to humanity. Christianity may well be implicated in the emergence of this worldview…Yet once it had emerged, this worldview declared its independence of any intellectual and moral constraints and set out to go its own way.”¹⁵

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¹¹ Ibid. 22ff.
¹² Ibid. 22ff.
¹⁴ McGrath, Science & Religion: An Introduction. 120
¹⁵ ———, The Re-Enchantment of Nature. xviii
While McGrath was prepared to admit that Christianity may be implicated in the emergence of the Enlightenment he argued that Christianity is not intrinsically anti-ecological. One must ask, however, whether the Enlightenment would have developed from any seedbed other than western, medieval Christianity. To consider the role of the Enlightenment and its relationship to Christianity I shall discuss the argument McGrath developed over some years in response to White’s paper and the ecological complaint against Christianity.

McGrath rejected the weakest part of White’s argument, that

“Genesis…legitimated the notion of human domination over creation”¹⁶,

arguing that

“a careful study of the reception of this text within the Judeo-Christian tradition makes it clear that White’s interpretation cannot be sustained.”¹⁷

To White’s claim that God planned the creation “explicitly for man’s benefit and rule” McGrath responded that

“Far from being the enemy of ecology, the doctrine of creation affirms the importance of human responsibility towards the environment.”¹⁸

Enlisting Douglas John Hall’s support McGrath argued that the biblical concept of “domination” was to be understood as “stewardship”:

“To put it simply: creation is not the possession of humanity; it is something that is to be seen as entrusted to humanity, which is responsible for its safekeeping and tending.”¹⁹

Then, countering White’s claim that Christianity is the most anthropocentric of all religions he charged,

“The most self-centred religion in history is the secular creed of twentieth-century culture, whose roots lie in the Enlightenment of the eighteenth century and whose foundation belief is that humanity

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¹⁶ Ibid. 29-30
¹⁷ Ibid.30
¹⁸ ———, Science & Religion: An Introduction.119
¹⁹ ———, The Re-Enchantment of Nature. 30-1
is the arbiter of all ideas and values."\(^{20}\)

This idea came, in turn, from classical Greek philosophy, argued McGrath, quoting Protagoras:

“Man is the measure of all things”\(^{21}\)

and Winrood Reade’s widely read 1872 work *The Martyrdom of Man*:

“When Man first wandered in the dark forest, he was Nature’s serf...But as time passed on, he ventured to rebel...The river which once he had worshipped as a god, or which he vainly attacked with sword and spear, he now conquered to his will.”\(^{22}\)

On the other hand, stressed McGrath, Christianity has a multi-layered, positive ecological tradition. He cited four fundamental ecological principles that Calvin DeWitt has discerned within the biblical narratives:

“earth-keeping”, “Sabbath”, “fruitfulness”, and “fulfillment and limits”.\(^{23}\)

Further, McGrath called upon evidence from several western Christian theological streams to argue that western Christianity is not anti-ecological. Starting from the doctrine of creation he argued that there is in fact a “grand tradition” of “tending for nature” within Christianity. To demonstrate that the eco-friendly approaches of such theologians as Douglas John Hall and Jürgen Moltmann have

“not been invented to respond to the late-twentieth-century criticism that Christianity lacks ecological compassion and concern”\(^{24}\)

McGrath entered the world of Celtic Christianity which

“respected nature as a fundamental religious principle, not in order to safeguard the future of the human race.”\(^{25}\)

\(^{20}\) Ibid. 54  
^{21}\ From Protagoras’ famous quotation, “Man is the measure of all things; of things which are, that they are, and of things which are not, that they are not.” As with many quotations of the pre-socratics we do not know the context for this, so its meaning is open to interpretation. Plato ascribed relativism to Protagoras, and contrasted his sayings to Plato’s own commitment to objective, transcendent realities and values. He reproduced this quotation in *Theaetetus*, section 152a. It would be ironic indeed if Plato opposed Protagoras’ phrase became influential because of Plato, and became subsumed in western minds into the whole Platonic matrix of meaning, i.e. if Plato opposed Protagoras’ quote which, because of the transcendentality Plato propounded nevertheless ended being the steering value of the Enlightenment.  
^{22}\ McGrath, *The Re-Enchantment of Nature*. 57-8  
^{23}\ Ibid. 29  
^{24}\ Ibid. 31  
^{25}\ Ibid. 31
The late twentieth-century criticism must, however, be addressed. McGrath reported recent statements from diverse western Christian denominations urging members to respect creation, discerning in them themes of: the sinfulness of humanity; the land is God’s, not ours; and violating nature is to be seen as a sin.\textsuperscript{26} Within each of the important western Christian movements of Roman Catholicism, Evangelicalism and Protestant Liberalism McGrath detected recent theological trends towards restoring right relationships between God, humans and the rest of Creation.\textsuperscript{27} In short, McGrath holds a positive regard for Christianity’s ecological credentials.

McGrath agreed with White that modern science emerged from the western Christian worldview, stating that

“It could be argued that the natural sciences are founded on the perception of explicable regularity to the world,”\textsuperscript{28}

a perception provided by

“the Old Testament theme of ‘creation as ordering’”.\textsuperscript{29}

He disagreed, however, with White’s thesis that science and technology joined to produce the ecological crisis. Instead, he cited Moltmann:

“the exploitation of the world reflects the rise in technology, and seems to have little to do with specifically Christian teachings.”\textsuperscript{30}

Hence McGrath appears both to agree and to disagree with Peter Harrison, who has examined the role played by the Bible in the emergence of natural science.\textsuperscript{31} Harrison showed that the Bible’s contents, but more particularly the way in which it has been interpreted, have profoundly influenced conceptions of nature from the 3\textsuperscript{rd} until the 17\textsuperscript{th} centuries. He argued that the rise of modern science is linked to the more literalistic Protestant approach to interpretation of the biblical texts. This ended the Middle Ages’ symbolical world and method of interpretation, and established conditions

\begin{thebibliography}{9}
\bibitem{26} Ibid. 37-40
\bibitem{27} Ibid. 40-52
\bibitem{28} , \textit{Science & Religion: An Introduction}. 112
\bibitem{29} Ibid. 112
\bibitem{30} Ibid. 120
\end{thebibliography}
both for the scientific investigation of and the technological exploitation of nature. For Harrison, then, Christian worldviews based upon interpretation of the Bible provided both the framework in which the natural sciences flourished and in which they exploited that which they studied.

Finally, in his defence of Christian theology McGrath, informed once again by Jürgen Moltmann, moved from the doctrine of Creation to how Christian eschatological hope, influenced by aspects of the doctrine of God, informs our present living. This meant exploring how the doctrine of the Trinity affects human ecology. For McGrath the real purpose of the puzzling doctrine of the Trinity is

“to ensure that the Christian experience of God is not impoverished.”\(^{32}\)

He quoted Moltmann to indicate that the basic reason for the Enlightenment’s ecological failing had to do with the its understanding of the nature of God:

“The Trinitarian concept of creation binds together God’s transcendence and God’s immanence. The one-sided stress on God’s transcendence in relation to the world led to deism, as with Newton. The one-sided stress on God’s immanence in the world led to pantheism, as with Spinoza. The Trinitarian concept of creation integrates the elements of truth in monotheism and pantheism.”\(^{33}\)

While many deists hold that God, having created the world, drew back from it, leaving it to its own devices, Pantheism

“reduces God to a life force within the world…”\(^{34}\)

Both incomplete views, by forbidding us to speak of God in personal terms, present understandings of God that are transcendent, or at least inaccessible. The doctrine of the Trinity, however, enables personhood and relationality in our understanding of God. Consequently it helps humans to understand ourselves and our relationship with the rest of creation in a personalized, relational way. It does so substantially through the doctrine of the

\(^{32}\) McGrath, *The Re-Enchantment of Nature*. 48


\(^{34}\) McGrath also noted, commenting on Moltmann, that Deism “is the impoverished view of God that seems to underlie…White’s article.” McGrath, *The Re-Enchantment of Nature*. 48-9
Incarnation, which facilitates speaking personally of God, and also through the doctrine of the Holy Spirit, the Comforter and Guide. The Christian conviction that God neither remained distant from the world (as in Deism) nor is an impersonal life force in the world (as in Pantheism), but entered the world as a human and continues to work out God’s purposes in the world through the Life-giving Spirit demonstrates that God ascribes great value to the world. It also enables humans to move from seeing reality from the perspective of a neoplatonic “structure of being” to the perspective of history in which God is working out God’s purposes in the world.

That linear view of time is not our enemy, but our friend: it implies for Christians the missio dei, the Mission of the triune God, which is from God the Creator through Christ the Redeemer and the sustaining Spirit to the whole cosmos which God loves and will restore. In the final two chapters I shall view these theological issues more deeply.

The implication, however, is clear. Because this triune, transcendent-yet-immanent, relational God of love “so loved the world”, so should we. Moltmann and McGrath have articulated ecotheology’s raison d’être. Primarily the world is in ecological crisis because people of occidental Christian culture, worldview and civilization (even if many do not call themselves Christians) have the wrong view of God. This theological response to ecological crisis calls both Church and world to a restored, proper view of who God is and, consequently, who humans are and how we relate to Creation.

McGrath wrote that because of the Enlightenment,

“Nature, once seen as having a privileged status, was disenchanted.”

He rightly called for a return to the sense of enchantment in nature that the Enlightenment, with its emphasis on scientific analysis, has taken from humankind. That, surely, is a consequent task of ecotheology.

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35 John 3:16; 1 John 4:7-20
What is Christianity?

McGrath and others have demonstrated that although the Enlightenment developed in Christianized western societies its agenda was scarcely Christian. It would, for example, hardly seem possible for atheism to develop from as personal a theism as Christianity’s Doctrine of God presents. But because, as Alfred North Whitehead put it, western philosophy is a series of footnotes on Plato, western Christianity has been greatly affected over its 2 millennia by the early Church’s necessary immersion in Platonic thought and Greek culture. This encounter lies at the core of the argument about what properly constitutes “Christianity”. Can that which runs counter to basic Christian belief still be called “Christian” in the sense White means? If, for White, Communism and Islam are Christian heresies, though both disavow Christianity and have been Christianity’s greatest persecutors, for him the Enlightenment must belong to the overall Christian tradition, even if at points it was distinctly anti-Christian, humanist, even atheistic. Although McGrath rebutted him at this point, pointing to the ecological havoc that happened under the rule of atheistic Communist dictators neither McGrath nor White actually defined what they meant by “Christianity”.

In fact, despite its centrality to this discussion such a definition does not feature in the considerable literature surrounding White’s paper. This is surprising, for the word “Christianity” has several meanings, each with considerable implications. The word “or” in The New Oxford American Dictionary’s definition highlights the potential for confusion:

“The religion based upon the person and teachings of Jesus of Nazareth, or its beliefs and practices.”37

It looks as though McGrath and like-minded theologians are centrally concerned with defending what they consider to be Christianity’s orthodoxy, whereas the medieval historian White, noting the correlation between the occurrence of, or potential for ecological degradation in societies whose worldview had been formed by Christian beliefs and practices, addressed the historical question of whether Christianity is

implicated not doctrinally but practically, as experienced by Nature. White found evidence of anthropocentric, utilitarian attitudes to nature in medieval European society that were capable of developing into the outright abuse of nature that later occurred. In contrast, the historical theologian McGrath took a positive ecological view of the Middle Ages during which period, according to him, the thread of Platonic thought that “man is the measure of all things” was relegated to the background, displaced by the dominant Christian idea that

“there was some intrinsic ordering to nature that could be discerned and which was to be respected.”

The hierarchical, medieval model called “the great chain of being”, posited a transcendent God, outside of the circle of this world, ruling over nature, of which humankind is the head. Once the Enlightenment conceived of God in remote, Deist terms or removed that God from the picture, and the development of technology provided a model for understanding Nature as machinery, an extreme, anthropocentric, utilitarian understanding of humans’ relationship to Nature became possible.

So the question of whether Christianity or the Enlightenment bears the great burden of guilt for our ecologic crisis and for the degradation of the Murray-Darling Basin’s waterways depends upon how Christianity is defined. Much as I would like to define Christianity as the movement of people who follow Jesus Christ, and who define their beliefs with a set of doctrines that I consider both orthodox and sufficiently “green”, this will not do. Broader than a movement, Christianity is a “religion”, a “particular system of faith and worship”. As White noted it is

“a complex faith, and its consequences differ in differing contexts.”

Just as when Jesus of Nazareth led and trained His group of followers, much occurs under the Christian “umbrella” that Christ might not approve of.

38 ———, *The Re-Enchantment of Nature*. 55
41 White, "The Historical Roots of Our Ecologic Crisis." 1206
The relationship between Christianity and the Enlightenment illustrates Christianity’s complexity well. Neil MacDonald has described the Enlightenment as

“The European intellectual and social history [which]...covers roughly a period from, the English Revolution of 1688 to the French Revolution in 1789.”

He and Jonathan Hill have both traced its historical development as a movement, many of whose early protagonists sought to justify Christian faith by reason, but many of whose later proponents used reason and science to deny that faith or to redefine that faith in terms of prevailing Enlightenment thinking. Hill put it pithily:

“Seventeenth-century rationalism...was typically concerned with supporting religion...Rationalism carried a major risk. If you claimed that religion could be proved by reason, and then based your religion upon reason, what happened if it turned out that your reasoning was not as good as you had thought?”

Peter Hay has described a similar historical development in the use of the sciences:

“Belief in the right of our species to manipulate other life through scientific experiment was firmly in place by the time of the Renaissance, but there remained a little uneasiness on the matter up to the seventeenth century, when the triumph of scientific rationality over biblical revelation was won. This incalculably important epistemological revolution paved the way for the explosion of technological advance and European mercantile expansion in the following century – the century of ‘Enlightenment’ – that in turn fed directly into the industrial revolution.”

Both these related historical processes involved Christians. Both produced unforeseen effects. Reason was turned from a weapon to defend the Faith to a cudgel for beating it. Science, which Johann Kepler memorably described as a means to “think God’s thoughts after Him”, was used in ways which

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44 Ibid. 316-7
45 Peter Hay, Main Currents in Western Environmental Thought (Sydney: University of New South Wales Press Ltd, 2002). 122
harmed both the Faith that inspired it and Nature, the subject of its study. To separate the Enlightenment from that which gave it birth is not realistic.

All of this highlights God’s daring in working incarnationally in creation, with instead of upon human beings. If the Enlightenment was ultimately due to a synthesis of Jewish Christianity and Platonic philosophy, Israel’s faith itself was frequently syncretistic. The story of much of the Old Testament is the tug-of-war in Israel between worship of YHWH and of surrounding gods. Nowhere in the Old Testament, however, did Israel cease to be God’s people. The same struggle has occurred throughout the Church’s history, as is seen in the debate over the “visible” and “invisible” church. In His parable of the wheat and the tares Jesus indicated that God is willing to allow weeds grow amongst the wheat, unbelief with belief, until the harvest time. Indeed, the Book of Job and Paul’s argument on the relationship between sin and the Law both suggest the radical idea that God has evil on a leash. Satan in the book of Job, and sin in Romans are able to do their work in a limited way, which God uses to bring about greater good. God vindicates Job for remaining faithful through his terrible suffering; and although, according to Paul, Sin uses the Law God in turn trumps Sin by Grace.

In a number of ways, therefore, the Bible explores the interpenetration of God’s people and values with “the world”. Enjoiners to “be separate” stand alongside Jesus’ High priestly prayer in which He asks the Father that though the disciples are in the world that they be kept from evil. That they frequently failed as Christians continue to fail does not mean that they were no longer disciples. Similarly, that the Enlightenment owes much to Christianity’s Greek heritage and in important respects has proved to be

46 Most dramatically displayed in Elijah’s struggle with the prophets of Ba’al in 1 Kings 18.
1 Kings 18.
48 Matthew 13:24-30
49 Job 1:1-2:13
50 Rom. 5-8
51 Lev. 20:24; 2 Cor. 6:17
52 John 17
anti-Christian does not absolve Christianity of responsibility for ecological degradation.

One can argue, in fact, that for all the Enlightenment’s faults, Christianity has gained some benefit from it. The leftist philosopher Jürgen Habermas paid tribute to Christianity’s undergirding relationship with western civilization when writing of different matters:

“Christianity, and nothing else, is the ultimate foundation of liberty, conscience, human rights, and democracy, the benchmarks of Western civilisation. To this day we have no other options [to Christianity]. We continue to nourish ourselves from this source. Everything else is postmodern chatter.”

Yet these are quintessentially Enlightenment values. If Christians frequently make the same point (and we do) we need also to accept criticism of the benchmarks Christianity has provided for Western civilization when that is justified.

It will be helpful at this point, however, to test how my argument works by reference to the character of Christianity in early Australia and the Murray-Darling Basin.

**The European Sky God in the Murray-Darling Basin**

In Chapter 5 I described the three forms of Christianity found in the Australian colonies. Ross Langmead has noted that in colonial Australia

“The church’s theology emphasized a transcendent God, distant and judging, just as Australians were coming to appreciate the bush and this ancient continent. The European ‘sky God’ was not well integrated with a God who was immanent in the landscape.”

Settlers in the Murray-Darling Basin who held such a view of God tended to feel that they were responsible to no one for creation except themselves. It was up to them to create a promised land in their own image. The

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Melbourne Punch cartoon55 shows exquisitely how, in an Australian context, the Enlightenment took the form of a Judaeo-Christian narrative but replaced its meaning with the Enlightenment narrative of human progress. In the Australian context Christianity and the Enlightenment became so enmeshed as to be co-dependent.

Roots of Transcendence – Plato’s Theory of Forms

Chapters 5 to 7, and recent images of farmers uprooting long-established fruit trees because there is no longer enough water to irrigate them have demonstrated, as the horrors of World War I did for Karl Barth, that the Enlightenment project of anthropocentric progress to Utopia here on earth by applying science and technology is liable to overreach itself. The ecological failure of the Enlightenment project, therefore, may actually help the Church recover what it truly means to be church. To do this it must look more carefully at what in western Christianity has aided the Enlightenment.

The hierarchical dualities that distress McFague, Habel et al. derive from the early Church’s exposure to the dominant Greek culture and Platonic thought of the ancient world of which Plato’s Theory of Forms lies at the heart. Nonetheless influential for its evidence being intuitive, the Theory of Forms asserts that Forms (or Ideas), and not the material world of change known to us through sensation, possess the highest and most fundamental kind of reality. Plato argued that the forms we perceive with our senses are not real, but mimic the real Forms. In his Allegory of the Cave, expressed in Republic, Plato likened that which we apprehend to the shadows of artificial replicas of real things. The Forms exist in a rarefied sector of the universe in comparison to which our earth is

"spoilt and corroded as in the sea all things are corroded by the brine."56

In that sector, which reads like biblical descriptions of Heaven, the colours are

"brighter far and clearer than ours; there is a purple of wonderful

55 “Striking the Rock” Alfred Deakin as Moses, the Deliverer,” (Melbourne Melbourne Punch, 1886). xiv
56 Plato, Phaedo. Para. 109
lustre, also the radiance of gold and the white which is in the earth is whiter than any chalk or snow.\textsuperscript{57}

The plants are better,

"and in this far region everything that grows - trees and flowers and fruits - are in a like degree fairer than any here."\textsuperscript{58}

The humans,

"...have no disease, and live much longer than we do, and have sight, and hearing and smell ... in far greater perfection. They converse with the gods and see the sun, moon and stars as they truly are ...."

And for Plato, "god" is identical to the Form of the Good.\textsuperscript{59}

In his magisterial study on resurrection N.T. Wright described the relationship between Plato and Homer as in some ways analogous

“to that between the ancient Jewish scriptures and the early Christian writings...If Homer functioned as the Old Testament for the Hellenistic world – which by the first century included the entire Middle East – its New Testament was unquestionably Plato.”\textsuperscript{60}

For example, worried that Homer’s gloomy view of Hades would undermine Athenians’ desire to be good citizens, and that this view contradicted his own Theory of the Forms, and motivated by the heroic suicide of his teacher Socrates,

“like an Athenian Marcion Plato proposed cutting out of Homer the very scenes which express the poet’s view of life after death.”\textsuperscript{61}

Wright was careful to state that

“Plato did not sweep the board of subsequent opinion at either a popular or an intellectual level.”

Nevertheless, the

“general rule, followed with innumerable variations over the succeeding centuries [was that] in Greek philosophy, care for and

\textsuperscript{57} Ibid. Para. 109
\textsuperscript{58} Ibid. Para. 109
\textsuperscript{61} Ibid. 48
cure of the soul became a central preoccupation...It is hard to overestimate the importance of Homer and Plato for the later, and wider, world into which, all unexpected, there burst the phenomenon we know as Christianity.”

Strongly dualistic and transcendent, Platonic philosophy collided with the young Christian movement that was both transcendent and extraordinarily immanent. This collision and its uneasy resolution produced a tension which has characterized Christianity ever since.

**Branches of Transcendence – The Effects of Plato’s Theory of Forms**

The Bible portrays God as being both transcendent and immanent, absent and present to humans who both crave God’s provision but want to run our own lives. The more absent humans perceive God to be, the greater the rein given to humans’ anthropocentric tendency. The pattern was set in the Garden of Eden account which depicted God as absent, hidden, while the serpent tested the woman and her husband. God found them only later as He walked “in the cool of the day”. During the Exodus God was both revealed and hidden, leading His people as a pillar of cloud by day and a pillar of fire by night. The cartoon “Striking the Rock” reminds us that God, unseen but evident to God’s people through these signs, provided for them even as they complained. The provision of water was one of many revelatory signs in the Bible that point to this hidden-but-real God. The reception of the Law was another. As Moses received the Law on Mt Sinai all other Hebrews were prevented from drawing near. Their experience of the transcendent God was hidden by thunder, lightning and thick cloud. Similarly, Moses’ face, shining with reflected glory, was hidden by a veil when he descended. For his part Moses, similarly again, was allowed to see God’s back, not God’s face. Later, when the Hebrews had settled in the Promised Land, the judges and then the prophets mediated God’s word and ways to the people. As Migliore put it,

“...the witness of the Old Testament is also that God remains, paradoxically, hidden in the event of revelation.”

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62 Ibid. 52
63 Genesis 3:6
64 Exodus 13:20-22
65 Exodus 33:21-23

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God was present in such a way that God’s presence could be confirmed by faith, or denied by lack of it.

One might have thought that the incarnation of Christ and the gift of the Holy Spirit would have convinced the Church of God’s immanence. Christology and pneumatology are both core, exhaustively studied theological areas, well-provided by the biblical record with material for study. To summarize, the Incarnation is predicted by the title *Immanuel* and by many prophecies, summed up by the kenotic hymn Paul cited in Philippians 2, and explored throughout the New Testament. Similarly, the Holy Spirit, present throughout the Old Testament, is given special status, titles and tasks in the New. The Spirit was and is given to indwell believers, guiding, counselling and bearing witness to truth, being a friend, convicting concerning sin, righteousness and judgement, giving gifts, producing fruit, and being a guarantee and first instalment of God’s future. Nevertheless, Migliore concluded similarly that,

“…for the New Testament witness as for the Old, the revelation of God is, paradoxically, a hidden revelation.”

This paradox is reflected in the “Messianic Secret” of Mark’s gospel. The author repeatedly reported Jesus as enjoining those He healed not to reveal His identity. The key question of the gospels, expressed once again most graphically in the theological structure of Mark’s gospel, is “Who do you say that I am?” In echoes of the giving of the Law that question was answered on the Mount of Transfiguration, but the chaotic situation that

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67 Phil. 2:6-11  
68 John 20:22  
69 Acts 2:4  
70 2 Tim. 3:16-17  
71 John 14:15-26  
72 John 16:7-11  
73 1 Cor. 12:12-26; Rom 12:3-8; etc.  
74 Gal. 5:22-23  
75 2 Cor. 1: 22; Eph. 1:13  
76 Migliore, *Faith Seeking Understanding: An Introduction to Christian Theology*. 25  
77 Mark 8:29. This exchange, in which Jesus elicits from Peter the insight into His identity as He and the disciples were going to the villages of Caesarea Philippi, is frequently said to constitute the turning point in Mark between Jesus’ ministry and His journey to Jerusalem and His passion and death.
greeted Jesus and the three closest disciples when they descended the Mount indicates how deeply the other disciples and the general populace hadn’t understood the answer. Only after years of reflection did one of the accompanying disciples, Peter, indicate that he did understand. Similarly, in John’s gospel the miracles the author selected to write about are signs that point to the identity of the One who performs them,

“...so that you may come to believe that Jesus is the Messiah, the Son of God, and that through believing you may have life in His name.”

Humans need space to come freely to our own place of believing.

The complex of events in which God was simultaneously most immanent and most transcendent to humans was of course the passion, death and resurrection of Christ. What is more immanent than physical suffering, what more earthy than death? Since Protestant and Anglican traditions contributed much to forming worldviews of Euraustralian settlers in the Murray-Darling Basin, a cursory outline of Protestant theology concerning this subject will be helpful. Starting from Moses’ experience of seeing God’s back Martin Luther developed a theology of Deus absconditus. Rejecting philosophy as the starting point for theology in favour of God’s Word the great reformer argued that because of our fallen condition humanity can neither understand the redemptive word nor see God face to face. Accordingly, God reveals Godself on the backside, that is to say, where it seems God should not be. For Luther this meant in the human nature of Christ, that is in His weakness, His suffering, and His foolishness. He expressed this in the phrase

“God has hidden himself in Christ.”

For Luther, fighting his own theological battle with the Scholasticism of his day for which the doctrine of creation had long been seen as part of general

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78 Mark 9:2-29
79 2 Peter 1:16-18
80 John 20:31 (NRSV)
81 Luther’s conviction that God reveals Godself in an indirect, concealed way (cf. Exodus 33 – God’s backside) in the suffering of Christ rather than in moral activity or created order.
revelation, revelation is seen in the suffering of Christ rather than in moral activity or the created order, and is addressed to faith. One can understand why Luther seems to have moved further from an eco-friendly viewpoint than his Catholic opponents. Given the concentration of various strands of Protestantism upon sola scriptura and sola fides over general revelation, including creation, as revealing God, and upon salvation of souls rather than the restoration of God’s world, it is worth repeating Luther’s statement that even if he knew that the world would end tomorrow he would still plant an apple tree.

Calvin agreed with Luther that

“the universal ‘sense of divinity’ is severely weakened by sin and is thus ‘insufficient’, ‘confused’, vague and dim by comparison with the special revelation in Scripture.”

He felt the relative dimness of the revelation in creation and in the human conscience to be a source of real danger.

For his part Karl Barth argued that all serious knowledge of God begins with the knowledge of God’s hiddenness:

“God’s hiddenness…meets us in Christ, and finally and supremely in the crucified Christ…”

For historical reasons these reformers downplayed general revelation in favour of God’s special revelation in the Word of Christ and the Scriptures. One effect, unfortunately, has been to marginalize creation in some streams of Protestant theology and practice.

How apt is Santmire’s phrase, the

“ambiguous ecological record of Christian theology”!

For good reasons the Reformers’ concern was not with creation, but with

83 Migliore, *Faith Seeking Understanding: An Introduction to Christian Theology*, 31


salvation. Yet by focusing upon the transcendent God and individual salvation, Protestants reinforced Platonic dualities, creating theologies as incomplete as those they sought to correct. This, and hostilities with Catholicism that reached their peak in the 30 Years’ War, but were still evident in the Australian colonies, sabotaged the medieval “great chain of being”. No matter how similar these were, Europeans now had before them two divine worldviews which competed to produce the horrors of protracted, modern war.87 Who was to say which, if either, was right? And so the scene was set for the Enlightenment’s eventual dethroning of God and enthronement of the human that reached its apogee in the nineteenth century, with Nietzsche’s “Superman” and the doctrine of Progress. The rash of European colonization around the world was an expression of this doctrine of progress. Ironically but not surprisingly, an over-emphasis upon God’s transcendence caused the theological pendulum to swing to no transcendence at all.

In Australia much of the leadership in ecotheology and ecopraxis has come from Catholics.88 There is within Catholicism at least a tradition, via St Francis of Assisi and early Celtic Christianity, of care for creation, and the doctrine of creation was never subverted as radically as in Protestantism. Yet theological change is afoot in Protestantism, even if it has only recently reached Australian Protestant and Anglican churches. What more redolent of creation restored, Isaiah’s new heaven and new earth and what better way to transcend Platonic transcendence than by the resurrection? The Anglican bishop N.T. Wright argues that the bodily resurrection of Jesus Christ is the first breaking of God’s new creation into this one.89 It indicates that God’s purpose for creation and humankind is “a new heavens and a new earth”90 that are contiguous with but at the same time distinct from the current,

87 Peter Englund, Ofredsår: Om Den Svenska Stormaktstiden Och En Man I Dess Mitt (Stockholm: Atlantis, 1993). In this history of the 30 Years’ War from a Swedish perspective Englund emphasized the devastating effect, particularly upon the small German states of this protracted war in which the technology of guns was used extensively for the first time.
88 Writers such as the priests Paul Collins and Denis Edwards, and the national agency Catholic Earthcare Australia have been important contributors to the churches’ response to ecological crisis in Australia.
90 Isaiah 65:17
degraded creation. Wright’s argument contradicts the Platonic dualities, restores integrity to our theology of God’s transcendence and immanence and gives Christians theological resources and motivation to work for the restoration of this present creation. Now I shall address the other aspect of Christian theology that was taken advantage of by the Enlightenment: its high view of humankind.

**A Critique of Anthropocentrism**

“The roots of our ecological crisis lie in the rise of a self-centred view of reality that has come into possession of the hardware it needs to achieve its goals,”

wrote Alister McGrath, arguing that it is the Enlightenment, by returning to Greek philosophical roots via the Renaissance, rather than Christianity drawing upon its biblical roots, that provided the roots of modern anthropocentrism expressed in ecological exploitation and degradation. For McGrath

“Making the rules is to be seen as the ultimate expression (of the cherished western ideal) of human freedom.”

Anthropocentrism means that humans stand at the centre: we, not God are in charge. From the perspective of the Creation and “Fall” stories: “anthropocentrism” is a multi-syllabic synonym for the biblical word “sin”.

At this point in his argument McGrath was meeting Lynn White’s charge that

“Especially in its Western form, Christianity is the most anthropocentric religion the world has seen”.

White had been writing about the Bible’s creation stories but, as McGrath underlined, White’s argument concerning creation is perhaps the weakest section of his paper. White conflated several of the Bible’s creation accounts into one description, provided an irrelevant line about the purpose of Eve, and another that is still more difficult to justify theologically:

“God planned all of this explicitly for man’s benefit and rule: no

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91 McGrath, *The Re-Enchantment of Nature*. 54
92 Ibid.
93 “…to keep man from being lonely”
Admittedly the first creation story\textsuperscript{94} can be read as God giving the earth to humans for us to fill and subdue\textsuperscript{95}. However, Hobbes’ description of life in the state of nature as "solitary, poor, nasty, brutish, and short"\textsuperscript{96} surely better describes the context of most who have read these words through history than it does for westerners today. As such God’s blessing in Genesis 1:28 might better be read as an affirmation of humankind’s high calling, such as is described in Psalm 8, in a context where this was not at all obvious, than as authority to selfishly dominate creation. Serving well as a complementary reading, the second creation story has the Lord God placing the human in the garden of Eden “to work it and keep it”\textsuperscript{97}. One might argue from this text that the human exists for creation, not the reverse.

Still another view is found in Job chapters 38 – 41. These form a sustained monologue in which God puts Job in his place, questioning him on aspects of creation about which he knows nothing. There is a sense that in this monologue God tells the complaining Job, “It’s not about you!” even though in the story God later restores him. That in itself serves as a parable for the relationship between Creator, Creation and Creation’s human custodians. Likewise, although the context is full of praise rather than complaint, Psalm 104’s delightful description of creation gives it purpose in relation to God\textsuperscript{98} and in relation to itself\textsuperscript{99}, as well as in relation to humans\textsuperscript{100}. Fundamentally, the whole earth, including humans, exists in relation to God and finds its purpose in the God who relates intimately to it, sending forth His Spirit to create and renew.\textsuperscript{101} There will be more on the role of the Spirit in creation in Chapter 10. For the present it suffices to say that the remaining creation biblical accounts are far more theocentric,

\textsuperscript{94} Gen 1:1-2:3
\textsuperscript{95} Gen. 1:28
\textsuperscript{96} Thomas Hobbes, \textit{Leviathan, or the Matter, Forme and Power of a Common Wealth Ecclesiastical and Civill} (1651). Chapter XIII
\textsuperscript{97} Gen. 2:15
\textsuperscript{98} Ps. 104:1a-4
\textsuperscript{99} Ps. 104:10-12, 14a, 16-22, 25
\textsuperscript{100} Ps. 104:14b-15, 23, 26a
\textsuperscript{101} Ps 104:30
Christocentric and even pneumocentric than they are anthropocentric.\(^\text{102}\)

Nevertheless, the Bible supports a high view of humans that can “give comfort and succour”\(^\text{103}\) to those who wish to justify anthropocentrism. As White put it, according to Christianity,

“…although man’s body is made of clay, he is not simply part of nature: he is made in God’s image.”

Psalm 8 wonders at the high status the author believed God has accorded humans:

“Yet you have made him [human] a little lower than the heavenly beings
and crowned him with glory and honour.
You have given him dominion over the works of your hands;
You have put all things under his feet…”\(^\text{104}\)

Although the Bible accords humans high status it is a dual status. We are both \textit{adham} of the \textit{adhama}\(^\text{105}\) and “a little lower than the heavenly beings”,\(^\text{106}\) creatures both of earth and of heaven. Given the influence of Platonic thought it is therefore not surprising that dualism has plagued Christianity. Having cited Tertullian’s and Irenaeus’ insistence that in Adam God was foreshadowing the image of the incarnate Christ White concluded that, according to Christianity

“Man shares, in great measure, God’s transcendence of nature.”\(^\text{107}\)

If White had shared the Aboriginal understanding of the seen and the unseen, or even N.T. Wright’s view of the way in which heaven and earth interlock, he may have written instead that the incarnate Christ is a divine model for humankind to share, in great measure, God’s immanence in nature. This medieval historian knew, however, that historically, western Christianity’s view of humankind’s relationship with nature was described

\(^{102}\) For example, John 1:1-18; Colossian 1:15-20
\(^{103}\) Australian political parlance.
\(^{104}\) Ps 8:5-6
\(^{105}\) Lit. a Hebrew pun meaning “Adam of the dust”, translated by Phyllis Trible as “human from the humus”, lectures at United Theological College, Sydney, 1985.
\(^{106}\) Ps 8:5
\(^{107}\) White, "The Historical Roots of Our Ecologic Crisis." 1205
in “the great chain of being”. Strictly hierarchical, it allowed, by the time of the Enlightenment, the effective removal of a transcendent, deist God from nature, leaving humans to rule the hierarchy. This allowed human selfishness, here called anthropocentrism, full reign. Even if they have not agreed with Lynn White that Christianity is the world’s most anthropocentric religion many theologians agree that the ecological complaint needs to be directed at anthropocentrism.

Ernst Conradie has provided a theological critique of anthropocentrism in which he investigated the claim, widely criticized as being anthropocentric,

“that human beings are not only unique, but that this entitles us to a position of special privilege in God’s household.”

Having argued that humans are unique

“on the basis of the image of God, in terms of the emergence of higher levels of complexity in evolutionary history in the form of human self-consciousness, or simply in terms of the position of power which humans have come to occupy in the earth community”

Conradie, following Barth, critiqued much modern theology for its anthropocentrism:

“For many theologians, at least since Schleiermacher, the object of theological reflection was no longer God or God’s revelation but human piety and spirituality, human religious experience, human faith, human existence and human ecclesial practices.”

Such theological anthropocentrism, as opposed to a theologically-based high view of humankind, though wrong, is historically understandable. Conradie traced the loss of Europeans’ “sense of a stable place in the cosmic order of things” to the demise of Christendom, itself a consequence of the confessional wars. He agreed with Pannenberg that

“a shared conception of the human person, human values and human rights eventually became the basis for social existence”

110 Ibid. 129-30
111 Ibid. 130 Conradie referred to Karl Barth, Church Dogmatics Volume 3, Part 1 (Edinburgh: T & T Clark, 1960). 79-96
112 Ibid. 130 Conradie referred to Karl Barth, Church Dogmatics Volume 3, Part 1 (Edinburgh: T & T Clark, 1960). 79-96
113 Ibid. 132
and that this consensus developed

“in detachment from the Christian churches which were still battling each other.”

For Conradie, famous questions of early modernity (Luther’s “Where can I find a God of grace?”; the Heidelberg Catechism’s “What is your only comfort in life and in death?”; Descartes’ “Where can I find a point of departure which is beyond doubt?) reflect the period’s “cosmological instability”. More sensitive to the reasons for the Enlightenment than McGrath, Conradie argued that

“The anthropocentrism of the answers provided by subsequent generations of philosophers and theologians – the humanum of humanism, the cogito of Descartes, the ‘heart’ of Pascal, the ratio of the Enlightenment, the empirical evidence of empiricism, the transcendental categories of Kant, the ‘feeling of absolute dependence’ of Schleiermacher, the quest for ‘man’s ultimate concern (Tillich) in existentialism, the codification of ‘universal’ human rights based on equal human dignity – could, in principle not provide solutions for a sense of insecurity which was not merely personal or societal, but indeed cosmic in scope.”

One can make the case that under the arrogance McGrath saw in the Enlightenment westerners are lost children in a vast universe. Feeling that the Church had failed us, we have only ourselves to look to for security.

Anthropocentrism, however, is a trap that forces those caught in it into ever-decreasing circles. Affirming the

“crucial hermeneutical insight that all thinking and language about God is inevitably human thinking, human language…”

Conradie argued that we cannot escape from ourselves and from this hermeneutical trap “simply by decrying anthropocentricity.” As White advocated finding ecologically-friendly resources in Christian theology, so Conradie argued that the

“Christian affirmation that the whole cosmos, including the human species, was created by God may offer a powerful critique of the anthropocentrism that pervades modern theology…Such a theocentric vision may indeed help us to understand our place within

114 Ibid. 132 See also Wolfhart Pannenberg, Anthropology in Theological Perspective (Edinburgh: T. & T. Clark, 1985). 15
115 Conradie, An Ecological Christian Anthropology: At Home on Earth? 132
116 Ibid. 130
117 Ibid. 131
Looking back and forward

In this chapter I have concluded that Lynn White’s ecological complaint against western Christianity is supported by the effect Euraustralian settlement has had on the Murray-Darling Basin’s waterways. In this context, in which one can compare Euraustralians with the Aborigines they displaced, it is clear that the western form of Christianity underlies both the instrumental attitudes to nature and the development of modern science and technology that have, respectively, motivated and enabled the development of the Basin and its waterways. This development has been an integral part of the development of modern Australia, but it has come at great environmental cost to the waterways.

It is also clear that the settlement of the Basin can be described as “an Enlightenment enterprise”. Nevertheless, to simply re-direct the ecological complaint against the Enlightenment fails to admit that this movement arose from and is intimately associated with western Christianity. This is also seen by studying Christianity, and Christians, in the Murray-Darling Basin as I did in my field study. Blaming the Enlightenment rather than western Christianity therefore risks not exposing the roots of the ecological problem.

Arguing at a high level of generality I maintained that the Enlightenment was able to flourish because early Christianity’s contact with dominant Platonic thought emphasized God’s transcendence at the expense of God’s immanence. Further, the Enlightenment project of freedom for humans took advantage of the Bible’s high view of humans to promote anthropocentrism. Without a strong theology of God’s guidance and fellowship, God’s immanence, God’s presence in creation, selfish anthropocentrism finds room for expression in the Bible’s and Christian theology’s seeming ambivalence about God’s immanence and transcendence, God’s revelation and hiddenness. Because, de facto, humans are the most powerful, influential species on the planet, a theology in which God’s absence

118 Ibid. 131
119 And Judaism’s
overwhelms God’s presence may result in an explicit or de facto anthropocentrism whereby humans tend either to try to control creation for our own perceived benefit\textsuperscript{120} or, alternatively, sink into despair.\textsuperscript{121}

Ecotheology represents the greening of theology. It has the potential to help theology recover a truer, integrated, non-reductionist understanding of the Gospel. In the next, penultimate chapter I shall explore a theology of rivers as an example of this restored theology, building upon the biblical motif of the river of the water of life.

\textsuperscript{120} Mark 12:1-12
\textsuperscript{121} Matthew 25:24
Chapter 9

“The River of the Water of Life”

A Biblical Tie-Rod

Introduction

Given the conclusion I reached in the previous chapter, of what use is Christianity now that

“Planet Earth is suffering a multi-faceted, acute ecological crisis”

for which Christianity “bears a great burden of guilt”?2 “Much in every way!”3 Noting that White himself advocated that we “rethink our old”4 religion, and St Francis of Assisi as “a patron saint for ecologists”5 After revising Christian anthropological models that contradict the dominant, western, transcendent, anthropocentric narrative, the main task of this penultimate chapter is to address the question of biblical interpretation the ecological complaint asks western Christianity. The Bible is a fundamental resource for theology. The way in which people interpret the Bible strongly influences belief and behaviour in regions, such as the Murray-Darling Basin, in which Christianity is the main religion. That residents of the Basin and elsewhere in the world where western Christianity has formed the culture tend to have an overly transcendent view of God and an anthropocentric understanding of our place in creation implies that we interpret the Bible incorrectly. Are there ways of reading the Bible in an eco-friendly manner that is not eisegetic?

I shall do this by exploring a biblical motif appropriate to my theme of waterways. Building upon Michael Wilcock’s suggestion that “the river of the water of life” is a “tie-rod” running through the entire

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1 From p.1, this thesis.
3 Romans 3:2
4 White, "The Historical Roots of Our Ecologic Crisis." 1206
5 Ibid. 1207
Bible\textsuperscript{6} I shall argue that this motif is a good way of describing the Bible’s overall message, and of encouraging the restoration of an understanding and practice of God’s immanence to western theology. In this chapter water and waterways become a metaphor, not only for the ways in which humans treat creation, but for the ways in which we relate to God.

This unusual perspective, from the waterways, of Scripture and this case study in contextual theology from the Antipodes, take us to the centre of theology, the nature of God and the doctrine of the Trinity. By identifying water and waterways with the Holy Spirit\textsuperscript{7} they offer a way of complementing western theology’s overemphasis on God’s transcendence with a renewed acquaintance with God’s immanence.

\textit{Motifs & Models for relating to Creation, & Christianity’s Positive Record – A Revision}

As noted in chapters 2 and 8, a number of theologians have responded to White’s ecological complaint against western Christianity.\textsuperscript{8} A full revision is unnecessary, but to indicate that the “stewardship” model is far from the only way Christian theology proposes for relating to Creation I shall review some of the more important other biblical motifs, theological models and ecopraxis from Church history.

Paul Santmire detected in theology and Scripture motifs of \textit{the Centrality of the Land and the Blessing of Yahweh, Election Faith and Creation Faith, the Flowering of Creation Faith, the Future of the Land and the Whole Creation, the renewal of the whole creation and Christ as the Cosmic Lord}.\textsuperscript{9} Calvin DeWitt has discerned motifs of 
\textit{earth-keeping, Sabbath, fruitfulness, and fulfillment and limits} within the biblical narratives.\textsuperscript{10} Jürgen Moltmann has argued that the

\textsuperscript{6} Wilcock, \textit{The Message of Revelation}. 212
\textsuperscript{7} John 7:37-39
\textsuperscript{8} \textit{On Positioning Ecotheology Theologically}, Chapter 2, 38-48
\textsuperscript{10} McGrath, \textit{The Re-Enchantment of Nature}. 29
Sabbath, not the human, stands at the centre of the doctrine of creation. Walter Brueggemann and, in Australia, Geoffrey Lilburne, Paul Collins and David Tacey have written of the Land. Sallie McFague portrayed a model of the universe or world as ‘God’s body’ and ‘our meeting place with God’. Denis Edwards and Celia Deane-Drummond have used the biblical theme of Wisdom as an ecotheological linking motif.

Near the conclusion of Chapter 2 I noted additionally a number of theological models for relating to Creation. Apart from the Stewardship model the commonwealth of all being; the covenantal model; that of Loving Nature who is one’s Neighbour; the Aboriginal model of Custodianship of the Land; N. T. Wright’s argument that the resurrection of the Son of God is the first instance of the new heavens and new earth; and two models from Orthodox theology, humans as a microcosms of all creation and as priests in and of creation feature.

By his Earth Bible Project Norman Habel has shown that it is impossible to draw a hard and fast distinction between a biblical motif and a theological model.

11 Moltmann, God in Creation: A New Theology of Creation and the Spirit of God. 5-7
17 D. Edwards, Jesus and the Wisdom of God: An Ecological Theology (Homebush, NSW: St Pauls, 1995).
18 Celia E. Deane-Drummond, Creation through Wisdom: Theology and the New Biology (Edinburgh: T & T Clark, 2000).
19 “Ecotheological Models for relating to Creation”, 61
Finally, in Chapter 8 I recounted Alister McGrath’s historical overview of western Christianity’s positive ecological credentials. McGrath wrote of the grand tradition of tending the creation and the ecological vision of Celtic Christianity; and he listed some responses to the environmental crisis from the Roman Catholic, Evangelical and Liberal Protestant traditions of the western Church.  

Each of these contributions adds to our perspectives on how God calls humans to relate to Creation. To them I add a way of reading the Bible that has arisen from this ecotheological reading of a system of waterways: “the river of the water of life”.

**The River of the Water of Life**

Often the last clarifies the foregoing. Michael Wilcock mentioned some occurrences of the motif “the river of life” while commenting on some of the Bible’s final words, Revelation 22:1-5.  

“The springing of the water of life was foreseen by…Joel before the exile (3:18), Ezekiel during it (47:1-9), and Zechariah after it (14:8). The miraculous river flows, in fact, through the length of Scripture. It nourishes the godly life of the Old Testament saints (Ps 1:1-3; Jer. 17:7,8), and is explained by our Lord as the life-giving Spirit who is to be received only from him (Jn. 4:14; 7:37-39). Ezekiel’s vision…resembles John’s in some detail, and includes tree as well as river…(47:12).”

Additionally, Douglas Stuart identified Ps 46:4, which “alludes to the ‘river whose streams make glad the city of God’”; Ps 65:9 which speaks of “the ‘streams of God’ that provide water for the agriculture of the land; and Isa. 33:20 which “forsees Zion as a place of ‘broad rivers and streams’”.

For Wilcock, however, Rev. 22:1-5’s most significant connection is with the first occurrence of this theme, in the second creation account in Genesis 2. The repetition of this motif throughout Scripture, but

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22 Ibid., 212.  
particularly its occurrence at the very beginning and end, gives it great significance. Wilcock called this ecological vision of rivers and trees for nourishment and healing a “tie-rod” connecting Genesis with Revelation. The motif provides a lens through which to view Scripture. Just as a catchment area is a geographical unit that helps humans understand and order our relationship with nature, it can help us make sense of Scripture. I shall now examine a number of these texts, starting with Genesis 2.

Genesis 2:4b-15
Products of cultures that are distant from our own and difficult for us to penetrate, the biblical creation accounts are famously ambiguous. Although the second, “Yahwist” account has been exhaustively analysed, the role of water and waterways in it continues to tantalise by its obvious importance and the account’s narrative difficulties.

The account has God forming the human from the dust of the ground before planting “a garden in Eden, in the east” and in an ambiguous aqueous context that has aspects reminiscent of irrigation:

“In the day that the Lord God made the earth and the heavens, when no plant of the field had yet sprung up – for the Lord God had not caused it to rain upon the earth, and there was no one to till the ground; but a stream would rise from the earth, and water the whole face of the ground – then the Lord God formed man from the dust of the ground…”

The meaning of the Hebrew עָרָק, translated as “stream” in the New Revised Standard Version, is uncertain, but it does indicate a plentiful water supply. The more important question is why, if water was abundant, does v.5

“convey the impression of an arid wilderness barren through lack of rain?”

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25 Gen. 2:8
26 Gen. 2:4b-7
27 It can be translated as ‘fresh-water ocean’, ‘flood’, ‘spring’, ‘rain cloud’ and ‘mist’ as well as ‘stream’.
Although Gunkel, Schmidt and Westermann ascribe vv. 5 and 6 to different sources, Wenham follows Castellino and Gispen

“who put down the lack of vegetation on the land to man’s absence. Without man to irrigate the land, the spring was useless.” 29

For Castellino this pointed to a southern Mesopotamian context. 30

Wenham argued that Gen. 2:5

“distinguishes two types of land: open, uncultivated ‘plain’ or ‘field’, the wilderness fit only for animal grazing, and the dusty ‘land’ (בָּדֶא) related to the generic name Adham (אדום) where agriculture is possible with irrigation and human effort.” 31

Does this passage, then, derive from a time and context in which grazing was being replaced by irrigated agriculture? Is that the author’s model for depicting creation from formless to formed? Did the Lord God form the Garden from a kind of watered “Nullarbor Plain” just as the Lord God formed Adham from the dust of the ground? Vv.7 and 15 tell us that Adham’s role in the Garden was as a gardener, to till it and keep it. Perhaps the term “farmer” would not be out of place. What consequences does that have for how this text, and the Bible at large, view the role of humans vis-à-vis the Lord God and creation, particularly if vv.4b-9 have been written with irrigated farming as a context?

Vv.10-14 are considered by some to be an older interpolation

“which was attracted to the story of Paradise without being able to undergo a complete inner assimilation.” 32

These verses clearly interrupt the flow of the narrative, but the major problem is their relation to v.8. How could the river that flowed out of Eden water the garden which was placed in Eden? Regardless of the state of assimilation of this ecotheologically intriguing pericope with

29 Ibid., 59
30 G. Castellino, "Les Origines De La Civilisation Selon Les Textes Bibliques Et Les Textes Cunéiformes," VTSup. 4 (1956), 120
31 Wenham, Genesis 1-15., 50
the creation account around it, however, it provides the genesis of the
Bible’s theme “the River of Life”, and must be addressed. The Garden
of Eden was the source for a river that flowed out of it, then divided
into four branches. Is the significance of this river entirely mythical
or has it at least some basis in history? The argument that Genesis 2’s
historical and geographical context is Mesopotamian is strengthened
by v.14 which names two of the four branches of the river that flows
from Eden as the Tigris and Euphrates. These two rivers flow through
the centre of recorded human history. They provided irrigation water
for the earliest known civilizations; it is thought that the earliest
known human-caused environmental degradation, including salinity,
spoiled their lands; and today conflict still rages around them. In any
consideration of the biblical motif “the river of the water of life” this
geography and history is clearly of enormous significance.

The geographical locations of the other two rivers, the Pishon and the
Gihon, are, however, more problematic. Wenham concluded a long
but incomplete discussion of possibilities by citing Speiser and
Weinfield, who have argued

“that the land of Cush is the land of the Cassites and that the
Gihon is one of the rivers or canals of Mesopotamia.”

That solves one geographical problem, the conjunction of the four
“heads” of rivers, by overruling the locations of Ethiopian Cush and
the spring named Gihon and located in the Kidron valley outside
Jerusalem. The location of the Pishon seems almost entirely
speculative. A number of possibilities have been suggested, ranging
from “the ocean surrounding the Arabian peninsula” to “the distant
Indus.” Von Rad addressed this interface of history, geography,

33 Lit. “heads”.
34 von Rad, Genesis: A Commentary, 78, calls them ‘Cossaeans’ and says they were
located in the west Iranian hill country.
35 Wenham, Genesis 1-15., 66 cite E.A. Speiser and Weinfield, "Ed in the Story of
Creation," Oriental and Biblical Studies. and E.A. Speiser and Weinfield, "The
Commentary (Sheffield: Sheffield Academic Press, 2000), 28
37 von Rad, Genesis: A Commentary, 79
radically differing worldviews, myth and speculation better than many:

“The author projects a picture of the great river system that surrounded the world he knew, for the number ‘four’ circumscribes the entire world (cf. the four horns as the kingdoms of the world, Zech. 2:1ff.)…What an inexpressible amount of water was in Paradise, if the river, after having watered the garden, could still enclose the entire world with four arms and fructify it! All the water outside Paradise, which supplies all civilizations, is, so to speak, only a remainder or residue from the water of Paradise!”38

Despite exegetical uncertainty one can say several things of general theological import and of particular significance for the Murray-Darling Basin arising from this consideration of rivers in the second creation account. Firstly, the Lord God’s provision of water in and from the Garden to the rest of creation is extravagant! As we work through the various biblical texts the theme of God’s provision is strongly evident. That is not surprising, for water is a basic requirement of human and other life. Because water, and rivers in particular, form an important part of the context in the creation of humans any exploration of the relation humans bear to God and to the rest of creation needs to take water and rivers into account. That point is likely only to be strengthened by further consideration of further texts.

Secondly, the context in which the second creation account was formed and framed may not have been so different from that which I described in chapters 3 to 6. The Murray-Darling Basin, too, is a landscape upon which there is little rain, parts of which are relatively bare and under large parts of which there is a vast store of water.39 Like Mesopotamia the Murray-Darling Basin is characterised by two great rivers, and parts of it have been transformed by irrigation. One of the larger controversies arising from the ecological degradation of the Murray-Darling Basin concerns whether, given the aridity of the region, irrigation farming is appropriate. The second creation account

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38 Ibid., 79-80
39 The Great Artesian Bore.
has no explicit view on irrigation. If, however, the context for the account I have reported is plausible, one might conclude that irrigation farming is considered to be part of, or to exemplify the “forming” of the Garden from barren land. One may not simply conclude from this or other biblical texts that wilderness is good and human interference is bad. \(^{40}\) Neither are humans given, nor may they attempt to take for themselves the right to order God’s creation as they see fit. Indeed, that may be one implication of the puzzling story of humans eating forbidden fruit from the tree of the knowledge of good and evil in Genesis 3. Rather, this text and others, as we shall see, point to human involvement with God but under God’s leadership in the ordering of creation. In the context of the second creation account the image of “God’s gardeners” is a good one.

Ironically, Aborigines, for whom caring for Country is a deeply spiritual enterprise, and in large measure their purpose in life, come closer to the second creation account’s ideal of the human as God’s gardeners than the European settler society of Christian heritage that supplanted them. The Hebrew verb דבע, usually translated as “till” in v.15, also means “serve”. \(^{41}\) According to this text the purpose of the human, special creature that God had created with authority to name the animals, can have been to serve and keep the earth.

This is not to disparage Euraustralians’ abilities as farmers and gardeners, or even our love for the land. Rather, Euraustralian anthropocentrism and our belief in a “sky God”, transcendent and relatively uninvolved in Creation, has hindered our ability to fulfil our God-given raison d’être, cooperating with God in the nurture of Creation. The pattern that cooperation was meant to take according to the second creation account was, clearly, that the Creator rules


Creation including the humans, but that the humans have a really significant servant leadership role to play in Creation. The image of water in God’s reproach to Israel in Jeremiah 2:12-13 clarifies what has gone wrong with that intended pattern.

**Jeremiah 2:12-13**

Throughout the Bible rivers and springs frequently denote God’s provision. Jeremiah 2 includes the first “reproach” in the Book of Jeremiah. God accused Israel of embracing heathen gods and flirting with heathen empires. Fundamentally, God’s complaint against Israel was that they did not trust God for provision and had neglected, even abandoned their covenantal relationship with God. Jeremiah 2:12-13 illustrates this by means of the motif, the stream of living water:

> “Be appalled, O heavens, at this, be shocked, be utterly desolate, says the Lord, for my people have committed two evils: they have forsaken me, the fountain of living water, and dug out cisterns for themselves, cracked cisterns that can hold no water.”

W. H. Thomson explained the image:

> “The best cisterns, even those in solid rock, are strangely liable to crack…, and if by constant care they are made to hold, yet the water collected from clay roofs or from marly soil has the colour of weak soapsuds, the taste of the earth or the stable, is full of worms, and in the hour of need it utterly fails.”

Jeremiah later contrasted this inadequate human provision with God’s abundant, pure provision:

> “Does the snow of Lebanon ever vanish from its rocky slopes? Do its cool waters from distant sources ever cease to flow? Yet my people have forgotten me…”

As well as these images describe how humankind in general have rejected our intended relationship with God that phrase “cracked cisterns that can hold no water” seems a particularly apt, even if

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42 Jeremiah 2:12-13
overgeneralized, description of the Murray-Darling Basin’s ecological problems. How different would the ecological outcomes for the Basin’s waterways have been if the Euroaustralian settlers’ general model for relating to creation had been to cooperate with a God they experienced as immanent, rather than to seek to control the sources of their provision, believing this God to be transcendent and, in principle, absent? Consideration of the two texts upon which the cartoon that inspired this thesis was based will explore this question.

**Exodus 17:1-7 & Numbers 20:2-13**

During the Exodus Israel learned, if only partially, to trust in God’s provision in a wilderness characterised by lack so that they might continue to trust God in the Promised Land of “milk and honey”. Of many accounts that speak of God’s provision during the Exodus I shall concentrate on two that are similar, but remarkably different. Both have to do with the provision of water.

*Exodus 17:1-7* tells the story of God’s provision of water at Rephidim, as a result of the Israelites’ complaint. Occurring between Israel’s escape from Egypt and the giving of the Law, just before their first battle, with Amalek, it is the last of three narratives in chapters 15-17 that have in common God’s “testing” or “proving” of the people (15:24; 16:4; 17:2,7), their testing of God, and God’s provision.

Having complained at Marah that the water was bitter, and of the lack

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45 God promises to bring them into such a land in Ex. 3:8, 3:17 and 13:5, and tells them to go there without God in Ex 33:3. Moses repeats that promise in Lev. 20:24. The people return to this promise a number of times in Numbers and Deuteronomy.


of bread, then meat in the wilderness of Sin, and having been provided for on each occasion the people complained again at Rephidim about lack of water. The Lord told Moses to strike the rock at Horeb. When Moses did so water flowed abundantly.

Alec Motyer, who perhaps wisely avoiding controversy over the Exodus’ history and geography, summarized the meaning of Massah and Meribah thus:

“The ordering of creation and the providence of the Creator await and meet the rising needs of the redeemed on their pilgrimage. Our needs have already been anticipated in his foreseeing, farseeing grace, which is ever on our side.”

Terence Fretheim added:

“God’s gifts of food and water in the wilderness are providential acts; they sustain the community of faith in the midst of hardship. But more than that; they are acts of creation or re-creation. They bring to realization God’s original intentions for the creation in the midst of chaos.”

Leaving aside Fretheim’s negative view of wilderness which, as Barry Leal has demonstrated, is only one of several such views taken in the Bible, this insight once again draws us back to the second creation account, and forward to God’s intention for a restored creation. Once again water is symbolic of, almost sacramental to the Creator’s purposes.

The obvious similarities between Exodus 17:1-7 and Numbers 20:2-13 have caused some to conclude that

“…the priestly author retells the story of the miraculous provision of water from the rock (cf. Exod 17:1-7).”

49 Motyer, The Message of Exodus: The Days of Our Pilgrimage., 185
51 Leal, Wilderness in the Bible: Towards a Theology of Wilderness.
Philip Budd argued that the author’s
“…particular purpose is to use the tradition to explain how it is that Moses and Aaron are excluded from the land.”

A. Noordtzij agreed that
“This pericope…must also explain why neither Moses nor Aaron could enter the Promised Land”

but argued from historical context (viz. the preceding death of Miriam, which, according to him,
“should be placed in the beginning of the final year of the wanderings”)

that this was another, similar occurrence decades after the first.

Gordon Wenham argued that the writer of Numbers 20 was unlikely to have understood the story as a retelling of the Exodus 17 account:
“Firstly, Exodus 17 mentions only Moses, but Numbers 20 both Moses and Aaron. Secondly, the Numbers story presupposes the account in chapter 17 of Aaron’s budding rod. 20:3 clearly alludes to 17:12-13, and the instruction to take the rod from before the LORD (20:8f.) refers back to 17:9-10. But the most obvious difference between the two accounts is that in the first Moses is commanded to strike the rock, whereas this action constitutes the essence of his disobedience in the second account.”

Scholars of different historical persuasions agree, however, that Moses’ disobedience is central to the theological meaning of this account, and identify this with the “holiness of Yahweh”. What was so serious about Moses striking the rock that it excluded him from the goal of his life and calling? How could this act impugn God’s holiness, particularly when Moses’ action was efficacious? To modern and post-modern minds who value individual freedom, the

53 Ibid. 219
54 A. Noordtzij, Numbers, trans. Ed van der Maas, Bible Student's Commentary (Grand Rapids: Zondervan Publishing House, 1983). 174
punishment seems like the punishment in the Fall account of Genesis 3: both arbitrary and out of proportion to the misdemeanour.

Budd argued that this failure of Israel’s leadership itself was

“the third great sin in Numbers’ central section, [following] the failure of the people (Num 13-14), and the failure of the Levites (Num 16-17).”

As part of the tradition the deaths of Moses, Aaron and Miriam before entering the Promised Land required explanation by those for whom possession of the land constituted fulfilment of divine promise. The explanation offered in Deuteronomy 3:26 and 4:21 was that Moses suffered vicariously. Budd argued, however, that the priestly author of Numbers, writing in the context of the exiled community in Babylon which ascribed its exile to God’s punishment for their sins,

“has an interest in interpreting the failure to inherit in terms of sin.”

However, Budd himself diagnosed the weakness in this explanation, writing that

“the rather generalized description of the sin in v.12 is more an explanation of the exile than a close elucidation of the tradition.”

Wenham, pointing to

“a marked divergence between what was commanded and what was done”,

noted that

“Whereas Christian theologians, following Paul’s supposed distinction, often contrast faith with obedience, this dichotomy is unknown in the Old Testament. Faith is the correct response to God’s word, whether it is a word of promise or a word of command.”

57 Budd, Numbers. 219
58 Ibid. 220
59 Which could also pertain for the account of the Adam’s and Eve’s expulsion from the Garden in Genesis 3.
60 Budd, Numbers. 220
61 Wenham, Numbers: An Introduction and Commentary. 150
62 Ibid. 150
Moses’ unbelief, argued Wenham, “was compounded by his anger”. He spoke to the people instead of to the rock in words that “were rash”, and he struck the rock twice. De Vaux suggested that, even though he had previously struck the rock in obedience to God, and that he produced water by striking the rock on this occasion, “there was an element of sacrilege in striking the rock, for it symbolised God.”

Wenham argued that the people were gathered in solemn assembly, as though before the ark or the tent of meeting. By disobeying instructions and showing no respect for the rock, symbol of God’s presence, Moses failed to sanctify God. That is, he did not acknowledge publicly God’s purity and unapproachability. Others who had dishonoured God died immediately. The death sentences passed on Moses and Aaron were lighter, being delayed, but evidently enough to vindicate God’s holiness. Finally, the phrase “He showed Himself holy” \( (\text{wayyiqqādēš}) \) is possibly a word play on the place name Kadesh \( (qādēš) \), “holy person” or “holy place”), near or at where this episode took place.

Noordtzij sharpened the critique of Moses, writing that he:

“…speaks when he should have been silent; he strikes the rock twice when he should have spoken once. He speaks in his own name, and strikes in his own strength. His words are in the first place an expression of the revulsion he feels when he sees ‘the assembly’, and of the bitterness that fills his soul when he remembers what he has had to endure from them for so many years.”

For Noordtzij Moses’ anger and frustration at his people led him to sin against God. Moreover,

“…for Israel this gushing water is now no longer a special miraculous act of God on Israel’s behalf: it is not the Lord who

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63 Ibid. 150  
64 Psalm 106:33  
66 Lev. 10:1-3  
67 Num. 20:13  
68 Noordtzij, Numbers. 177
has given them water from the rock but ‘we,’ ie., Moses and Aaron. And they used a staff that had proven to be the bearer of special powers.”

By acting out of frustration and anger at the people, however justified, and by taking matters into their own hands Moses and Aaron did not honour God as holy. By trusting their past experience, even though that experience was the result of obeying God then, rather than continuing to trust and obey God, they placed God on the same level as other, untrustworthy gods.

One gains another perspective on Moses’ seemingly arbitrary punishment by reflecting upon why Christ refused to undertake similarly reasonable-seeming courses of action near the end of His wilderness experience. What would have seemed more appropriate than miraculously providing bread for Himself and publicizing His cause? Surely this was the cause of God, the misseo dei! Only when Jesus, with equal vigour, refused the third temptation was the underlying dynamic clarified. The purpose of the temptations was to drive a wedge between Jesus the human and God, to cause Jesus to live by and for something other than God’s word, and ultimately to have Jesus the human, in a quest to exercise power over creation, worship a creature that is no God at all. In this archetypal story Jesus reversed the sin of the first Adam, as well as that of Moses.

In doing what Jesus the human refused to do Moses and Aaron also deprived themselves and Israel of a vital opportunity to grow in their relationship with God and their ability to mediate God’s power, that is, to cooperate in creation with a God who is not only transcendent but immanent. If Exodus 17:1-7 and Numbers 20:2-13 describe two separate, though similar incidents, rather than being variant traditions of the same occurrence it is possible that God used the people’s complaints not simply to attempt to convince them that God is

69 Ibid. 177;
71 Matthew 4:4; Deut. 8:3
72 1 Corinthians 15:21-22; 45b
Jehovah Jireh, the trustworthy provider, but to help restore their understanding of who they were in relation to God and creation.

In the power struggle with Pharaoh and his magicians decades before, Moses, Aaron and through them Israel had learnt through repeated use that the staff’s supernatural powers came from God, were greater than the powers of God’s rivals, and that God allowed humans to mediate this power as they were obedient and honoured God as holy. When Moses used the same staff to strike the rock of Horeb, described in Exodus 17, Israel learned further through this staff God not only exercised destructive power but provided for God’s people.

Assuming that Numbers 20:2-13 describes an incident subsequent to that described by Exodus 17:1-7, this incident provided another opportunity for restoring God’s chosen people to a right relationship with God. God’s words to Moses were:

> “Take the staff, and assemble the congregation, you and your brother Aaron, and command the rock before their eyes to yield its water. Thus you shall bring water out of the rock for them; thus you shall provide drink for the congregation and their livestock.”

On this occasion the staff was to be present but not active. I suggest that through this incident God intended to teach Israel the power of God’s Word over against the magical. The demonstration of Moses mediating the powerful word of God without recourse to the “magical” staff was to be a further lesson that in faith and obedience humans are to mediate the power of God in creation, not magically or for ourselves, but in intimate accordance with God’s will.

As with faith and obedience, so word and effect were more closely associated for the Hebrews than in modern western culture:

> “…to the Oriental a word is not a series of sounds, as it is to us, but an act that reveals itself in sounds…a reality that comes up out of the heart of the speaker, out of the ‘workshop’ where one’s actions are born. The word is, as it were, ‘charged’, and

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73 Exodus 7:11ff.
74 Numbers 20:8
will have a greater ‘charge’ as the one from whom the word goes out has more power or, as the Polynesians would say, more mana.”  

Faith and obedience, word and effect were to have combined in Moses commanding the rock before the eyes of the people to yield its water. Moses, however, affected by his bitterness, was neither faithful nor obedient, and deprived the people of an important opportunity to learn of God’s will for them. We shall see this in more detail when I examine John 7:37-39, a text with intimate links with both of these incidents in which Moses struck the rock.

“Striking the Rock”

This exegesis reinforces what I wrote in Chapter 6: the messages of the cartoon “Striking the Rock” and the theology of the texts which inspired it are opposed. For the Melbourne Punch cartoonist, “Striking the Rock” represented settler society creating their own Promised Land from the Murray-Darling Basin’s wilderness by its own provision of irrigation water. The cartoon expressed in an Australian context the Enlightenment ideal of improvement through the application of human reason, science and technology. The cartoonist used an image borrowed from archetypal biblical stories, but replaced the biblical meaning of these stories with their opposite. Exodus 17 described an immanent God who provided for God’s people, and Numbers 20 went further, describing a God who was not only pleased to provide for a people so tirelessly complaining that they exhausted the patience of their leader, but who sought to delegate God’s power over nature to that leader. The decisive difference between the Moses of the biblical accounts and the Alfred Deakin in the cartoon was that God required of Moses’ faithful obedience. In the cartoon there is no sign of God. Completely anthropocentric, it is all about male, European humans.

As noted, “Striking the Rock” sums up the syncretistic nature of Australian Christianity, compromised by the Enlightenment. The

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75 Noordtij, *Numbers*. 176
syncretistic form of Christianity that reached the Murray-Darling Basin finds diverse expression. Frequently stressed the primacy of human interests, even as it retained ecclesial forms. In my field study described in Chapter 7, the mostly Christian participants expressed a range of attitudes ranging from deep love for nature as God’s creation to be loved and cared for, to the instrumental view of nature summarised by the epithet “God helps those who help themselves.”

All of these people are beneficiaries of the Enlightenment’s advances in science and technology. The ecological problem in the Basin, as elsewhere, lies not in reason, science or technology per se. Neither, speaking in this context of water and rivers, can it be reduced to irrigation. It has been the same problem all along: our determination to make our own Promised Land independently of God rather than working together with the immanent God, under God’s guidance and leadership.

Yet for all our human determination to be independent of God, the Bible tells of a God utterly determined to restore Creation, and humans, to right relationships. The last three texts I shall examine bear witness to God’s deteremination through the motif I am examining.

**Ezekiel 47:1-12 & Revelation 22:1-5**

The final 9 chapters of the Book of Ezekiel outline a vision of a new temple and a restored Israel. The first 12 verses of chapter 47 follow the prophet’s vision of a new house of worship, and nature and all who live in the New Jerusalem; they form the first part of the final 2 chapters which describe the Promised land and its tribal allotments. Highly symbolical and eschatological, they, like the second creation account, nevertheless have some basis in history. A hope-filled vision of the renewed Israel, they were written in the depressing context of the Babylonian Captivity and fit well with Hans Küng’s two-word description of God’s kingdom as “creation healed”.

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76 Chapters 40 – 43
77 chapters 44 – 46
In Ezekiel’s vision water flowed from below the threshold of the temple, a human-built structure that signifies God’s abode. This flow apparently went underground, re-emerging from under the eastern gate, and becoming a rapidly broadening and deepening river which nourished trees and humans, and provided food and healing. Entering the Dead Sea from the east rather than, like the Jordan, from the north, it provided agriculture, fishing, medicinal trees and fruit. So strongly did this vision stress God’s provision that the river did not fully flush out the Dead Sea’s valuable salt deposits.

Ezekiel’s vision in the first verses of chapter 12 formed a picture of God’s supernatural, abundant provision and sustenance. It linked back to what was lost when the humans were expelled from the Garden of Eden, and forward to what God intended to restore. More than reaffirming Israel’s sovereignty, this vision of the river of life points forward both to the “water of life” that would be found in Christ (John 4:1-42 and 7:37-39) and to the heavenly fulfilment of Revelation 22’s river of life, to which it lent much.

John’s third revelation of God’s world renewed is related in what Michael Wilcock describes as the eighth and final “Scene” of the Book of Revelation. In it “the river of the water of life” flowed “from the throne of God and of the Lamb through the middle of the street of the city.” This exquisite urban renewal plan envisaged the tree of life on both banks producing fruit each month and leaves “for the healing of the nations”, and concerns what Christ called “the renewal of all things”, literally “the regeneration”, “the new

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79 v.1.
80 v.2.
81 vv.3-7.
82 v.8.
83 vv.9-12
84 v.11.
86 Rev 22:1, 2
genesis”. Wilcock calls John’s vision “a summary of the biblical doctrine of creation”. 

There is a completeness to the Bible of which this motif, the river of life, is an integral part: the first chapters concern the world’s genesis and the last its regeneration. Wilcock agrees to some degree at this point with James Lovelock’s Gaia hypothesis:

“The creation as it was and as it will be is an immense organism alive with the life of God, for the stream flows ‘from the throne of God and of the Lamb’, and thence ‘through the middle of the street of the city’.”

This new, riverine genesis is no return to some Waldensian wilderness. The river of the water of life flows through new Jerusalem’s heart. A cityscape inhabited like the first genesis by both God and humans it reminds us that Eden was not a wilderness either, but a garden. Each of these descriptions of God’s intention for the world involve divine-human cooperation, with really significant human input. They depict not human-free wilderness but a garden, a building, even a city. That humans fell from God’s intention gives special poignancy to Romans 8:19-23,

“For the creation waits with eager longing for the revealing of the children of God…”

That many biblical passages on rivers point to God’s intention to restore creation through the restoration of humans fills us with hope.

The theme “the water of life” binds this hope to Christ. It is to this theme I now turn.

John 7:37-39

Four incidents associating Jesus with water are recounted theologically in John’s gospel. Jesus turned water to wine during the

87 Matt. 19:28, παλιγγενεσία
88 Wilcock, The Message of Revelation., 212
wedding at Cana, demonstrating His mastery over creation.\textsuperscript{91} In His encounter with the woman at Sychar’s well and His interruption of the high point of the annual feast of Sukkot Jesus claimed to be “living water”\textsuperscript{92}, and the source of “rivers of living water”.\textsuperscript{93} Only the Johannine account of the death of Jesus contains the detail in which a soldier pierced His side causing blood and water to flow.\textsuperscript{94} After the latter detail the evangelist claims that his testimony was true. For John, evidently, this historical detail supported symbolism and theology. For him Jesus was the living water, and its source. But what did this mean?

The text which forms the climax of the Bible’s motif "the water of life", tying Jesus to the Rock from which “streams of living water flow”, and hence to the cartoon “Striking the Rock”, is undoubtedly John 7:37-39. A description of Jesus’ attendance, actions and words at the Feast of Tabernacles (Sukkot), it refers back to God’s provision of water for Israel during the Exodus, particularly in the event in which Moses struck the rock at Horeb.\textsuperscript{95} In this text Jesus claimed that He fulfilled the messianic expectation to provide water as Moses had, just as in the previous chapter the evangelist had Jesus claiming to provide the bread of life as Moses provided manna in the desert.\textsuperscript{96} In having Jesus quote the Scripture “Out of the believer’s heart\textsuperscript{97} shall flow

\textsuperscript{91} John 2:1-11.
\textsuperscript{92} John 4:10, 13-14
\textsuperscript{93} John 7:37-39
\textsuperscript{94} John 19:34
\textsuperscript{95} Ex. 17:1-7
\textsuperscript{96} Ex. 17:4, 15; Nu. 11:8; Ps. 78:24; 105:40. Colin Kruse notes that “People believed that when the Messiah came he would provide water (as he would provide manna) just as Moses had done, quoting Qohelet Rabbah 1:9.1: “As the former redeemer made a well to rise, so will the latter Redeemer bring up water, as it is stated, And a fountain shall come forth of the house of the Lord, and shall water the valley of Shittim (Joel iii, 18).” Colin G. Kruse, The Gospel According to John: An Introduction and Commentary (Leicester: Inter-Varsity Press, 2003.), 191. The ritual’s inclusion of wine in the contexts of Sukkot’s celebration of and belief for God’s provision and Jesus’ discussion in John 6 of eating His flesh and drinking His blood may well have been yet another allusion by the evangelist to Jesus as Host and substance of the Eucharist.
rivers of living water”\textsuperscript{98} the evangelist pointed to the phrase “the river of the water of life”, which first appears at the very end of the Bible in Revelation 22:1. Ian Robinson has argued that

“In John 7-8 …Jesus is shown to fulfil the purpose of the Feast…with the highest claims he ever makes about his own identity, at the most important feast of his time.”\textsuperscript{99}

An understanding of Sukkot’s water-pouring ritual helps us to appreciate the significance of Jesus’ promise to provide living water to those who believed in Him. Robinson noted that:

“This was the time of water libation, gathered in procession daily by the high priest in a golden pitcher from the pool of Siloam, brought to the south gate, and poured into a small reservoir which trickled water onto the altar of sacrifice. Apart from its mechanical function to wash away sacrificial blood, this represented water from the rock, God’s provision of water in the wilderness. This had secondary echoes in the prophets’ eschatological stream flowing from Jerusalem for the watering of the world."

Colin Kruse added details on the ritual:

“When they reached the Water Gate, three blasts of the shofar (ram’s horn trumpet) were sounded. When they arrived at the temple, they processed around the altar and sang the Hallel (Pss. 113 – 118), the people shaking their lulabs (bundles of myrtle, palm and willow bound up with a citron) while the priests shook theirs (made from willow [-poplar] branches). The flagon was taken to the priest on duty at the altar who had two silver bowls, one for the water and the other for wine. These bowls were filled and then the contents poured over the altar. On the seventh day they processed around the altar seven times\textsuperscript{100} … "\textsuperscript{101}

Robinson argued that this repeated procession around the altar heightened

“the dramatic suspense of ritual longing for water. For this reason alone, it is possibly this highlight that was interrupted by Jesus in his shout about ‘thirst’. At the greatest pilgrimage feast of Judaism, on its climactic final day, at the crux of

\textsuperscript{99} Ian D T Robinson, “If Anyone Thirsts - a Christian Spirituality of Australia’s Desert Land” (PhD, Charles Sturt University, 2007)., 298ff.
\textsuperscript{100} Sukkah 3:9; 4:4-10; 56:1-4
Jewish identity and belief, Jesus publicly interrupted by standing among the thousands of pilgrims and shouting…”

What was Jesus claiming when He did this, and what were the implications? Robinson gave an indicative, though not exhaustive list of links in Jewish literature with the water of life, first provided from the Rock at Horeb during the Exodus, with the eschatological river of life, arguing that this linkage was typical at the time when Jesus appeared at Sukkot:

“in the Targum rendering of Ps 78:6: “He made streams of water come from the rock and caused them to come down like rivers of flowing water”;
in Isaiah 12:3: “With joy you will draw water from the wells of salvation”;
in Isaiah 43:19, which describes God’s promise to do a new thing as making “a way in the wilderness and rivers in the desert”;
“1 Qs 4:20-21 and Ezek. 36:25-27 use water as the image for the eschatological outpouring of the Spirit, connected with the water in the desert in Is 44:3. The image of the river of life that waters the new creation and which flows from Zion (Ezek. 47:1-12; Zech. 13:1; 14:8) is explicitly named in the rabbinic text of Meggalth 31a as a reading to commemorate the period of Sukkot. The Holy Spirit in these passages variously renews creation, renews Israel and renews the individual believer.”

John 7:37-39 concentrates an enormous wealth of texts and themes in the person of Jesus. Robinson argued that what Jesus did that was new, however, was to change the flow pattern:

“The flow from Jesus to believer and onwards contrasts with the repeated libation in the Temple ceremony.”

Claiming to meet believers’ need for water as Moses had done, He laid claim to messiahship. Quoting the Scriptures to say that ‘Out of the believer’s heart shall flow rivers of living water”, however, He

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102 Robinson, "If Anyone Thirsts - a Christian Spirituality of Australia's Desert Land”, 308.
103 Ibid., 309
104 R. Schnackenburg, The Gospel According to St John (New York: Seabury, 1980). Schnackenburg, has surveyed many such rabbinic texts, and associates them with the hope of salvation. He explained Jn 7:38 “as a construction of the evangelist intended to express, in one sentence, all these typological ideas.”
105 Robinson, "If Anyone Thirsts - a Christian Spirituality of Australia's Desert Land”, 309
moved Israel beyond themselves back to God’s purpose as a blessing to the nations.

Implications
If John 7:37-39 is used to reinforce a common emphasis of prosperous, dominant, privatised, western faith, that the Holy Spirit is essentially God’s provision for the individual believer, a fundamental mistake would be made. There is no sense of individualism, triumphalism or false optimism here. Jesus’ promise of the Spirit here was to help colonized, subjugated Israel fulfil the promise of Zechariah 14:16-30, that they would be a blessing to the nations. At this point Robinson compared Israel’s desperate plight, brutalised by Roman occupation, with culture and self-understanding threatened by Greek culture, with the desperate thirst of desert-dwellers:

“The only other place where all these themes come together is at another Feast of Sukkot, at another time when the identity of Israel desperately needed to be re-established, in the people’s covenant renewal prayer of Neh. 9:20-22:

‘You gave them your good spirit to instruct them, and did not withhold your manna from their mouths, and gave them water for their thirst.’”106

Sukkot, then, was of fundamental importance to Israel’s self-understanding. So, therefore, is what Jesus did and said at Sukkot. He promised God’s provision and God’s proximity to believers so that God’s purposes for the nations would be achieved through them.

Robinson described this “statement to the thirsty” as “a complete missiology”. He hinted that Jesus’ messianic statement at Sukkot meant more even than this, however. Because

“the familiar imagery of water [marked] human rebellion,107 Jesus’ offer of water and Spirit offered a healing for the most elusive of human problems.”108

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106 Ibid., 310
107 Cf., once again, Jer. 2:13.
108 Robinson, "If Anyone Thirsts - a Christian Spirituality of Australia’s Desert Land".
I presume Robinson is referring to the anthropocentrism that occasioned such rebellions.

Finally Robinson, whose interests lay primarily in desert spirituality and in missiology, nodded to ecotheology:

“In one statement Jesus claims to fulfil the hope of salvation for the diaspora, for the wider creation and for individual lives.”

That statement describes God the Holy Spirit in the symbolism of water. After all, the Holy Spirit first appeared in the Bible as the creating Wind who “swept over the face of the waters”.110

“Out of the believer’s heart shall flow rivers of living water” means that every believer becomes a channel whereby the living waters of Christ can flow to others. In a sense every believer becomes part of the river of God. And as we have seen, that river nourishes and heals not only humans, but creation itself. In other words, the gift to humans of the indwelling Holy Spirit enables God’s intended divine-human cooperation to resume.

**Release the River, Release the Spirit!**

Several themes have emerged from this study of the biblical motif “the river of the water of life”.

Firstly, God provides. The images in Genesis 2 of the underground spring/river that provided water for the as yet barren land; the paradisal Garden of Eden from which the river of 4 heads flowed out into the world; the rocks at Horeb from which good water poured when Moses struck it, and Kadesh, where water would have flowed at his word had Moses obeyed God, and flowed for a complaining people even though he disobeyed; the rivers flowing in Ezekiel’s and John’s visions from the temple through the land, and from the throne through the centre of the new Jerusalem respectively; and the image of

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109 Ibid., 311. My emphasis.
110 Gen. 1:2
Jesus as source of that everlasting, ever-satisfying water, the Holy Spirit – these are all rich images of God’s provision.

Secondly, *God saves*. I use the word “save” in its two senses of to salvage and to salve, to rescue and to heal or restore.\(^\text{111}\) God saved the Israelites from death by desiccation in the desert. As Ian Robinson argued, Jesus developed this theme by the claims He made for Himself at the feast of Sukkot. The rivers of Ezekiel’s and John’s visions are salvific in a restorative way.

The biblical meaning of “salvation” is far richer than popular understandings of saving souls from this earth doomed for judgement or, alternatively, some form of this-worldly social justice for humans. As noted, Hans Küng has called God’s restored Kingdom “creation healed”. That salvation has a healing, restorative element is clear from Isa. 53:5-6 and a number of the gospels’ programmatic statements.\(^\text{112}\) Other passages make it clear that God intends to restore and fulfil the whole creation.\(^\text{113}\) Among currently active theologians Tom Wright argues in this direction.\(^\text{114}\) Moreover, the science of restorative ecology teaches us that salvation of a species or ecosystem from extinction is simply a prelude to its restoration. Much more than anthropocentric salvage, God’s salvific purpose is to heal creation and to restore God’s rule.

Interestingly, the texts I have examined that associate rivers and salvation (Gen. 2, 3; Ez. 47:1-12; Rev. 22:1-5) each also involve trees. Fruit from the tree of the knowledge of good and evil is instrumental in the Fall, and Adham and Eve attempted to hide their nakedness with the leaves of trees. The river in Ezekiel’s vision was fringed with

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\(^{112}\) Eg. Mt. 11:2-6, Lk 4:16-21.

\(^{113}\) 2 Ki. 2:21; 2 Chr. 7:14; Rom. 8:18-25

“a great many trees on the one side and on the other”\textsuperscript{115} In Revelation these trees of either side of the river are called “the tree of life”. They fruit each month and their leaves are for the healing of the nations.\textsuperscript{116} A “theology of trees” is beyond the scope of this thesis, except to note that J. R. R. Tolkien has understood this connection as well. In the scene from \textit{The Lord of the Rings: The Two Towers} that inspired the thesis title the trees and their shepherds the Ents release the river which then destroys the corrupt works of the hominoids. Tolkien based much of his saga upon ancient stories from many contexts. Simon Schama included “the primitive forest” among the three cults “we are told to look for in other native cultures”.\textsuperscript{117}

\textit{Thirdly}, in these texts God, though mostly hidden, is immanent and continues to provide care. In Eden, God’s garden, God was absent but close while the serpent was present to the humans. When they disobeyed God drove them from the Garden, but only after having clothed them. That described the pattern of God’s involvement with humans. No longer intimate, God was nonetheless immanent, a close, though mostly unseen Provider for God’s people and for the whole creation. At Horeb and Kadesh God was present, presumably unseen, standing in front of Moses at the rocks of provision.\textsuperscript{118} In Ezekiel’s vision God was present by means of the temple and the river of life that flowed from it; in John’s revelation, by means of the throne of God and of the Lamb, source of the river of life. God was present in Jesus to the crowd at the feast of Sukkot where Jesus spoke of God’s presence. God is a Spirit, and not limited to some particular location. In an extraordinary development of that thinking Jesus interrupted the Festival to shout that this Spirit can, in fact, be located. Like water, the Spirit flows from Jesus to those who drink of Him, then out like a river from their hearts. Later in John’s gospel Jesus describes a number of the Spirit’s functions. The most commonly used of these is

\begin{footnotes}
\footnote{Ez. 47:7}
\footnote{Rev. 22:2b}
\footnote{Simon Schama, \textit{Landscape and Memory} (London: Fontana Press, 1996)., 14}
\footnote{Ex. 17:6}
\end{footnotes}
the title “Advocate”, or “Helper”. It recalls the Hebrew word, translated “Helper” and used to describe God’s relationship with humans, and it describes the title “Immanuel”, how “God is with us”.

The texts I have studied affirm that in extraordinary ways God is immanent as well as transcendent in creation, and help us reappropriate the sense of God’s immanence.

*Fourthly*, God’s purpose is partnership with humans for the fulfilment of creation. In the second creation story humans were to be gardeners of God’s Garden. In the cityscape of Revelation God will live in the city with God’s people, just as God walked in the Garden populated by God’s people. The city with the river of life flowing through it fringed by trees is a sign of humankind’s partnership with God, for humans are builders, just as the Garden of Eden was a sign of God’s intention that humans partner with God, for humans are gardeners. At Rephidim Moses worked in partnership with God to provide water for the people, and at Kadesh he and Aaron rejected God’s intention.

God’s intention that humans live and work in partnership with God for Creation’s good was demonstrated in the human Jesus of Nazareth. The gospels depict Jesus was a worker of signs, each of which restored creation and ushered in God’s rule in some way. Jesus preached, taught, exorcised unclean spirits, healed people of physical maladies, and raised people from the dead. All of these activities concerned people. For Mark’s gospel they showed Jesus’ authority. Jesus also demonstrated authority over the rest of creation. He turned water into wine, stilled storms, exorcised unclean spirits into pigs, and withered a fruitless fig tree.

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119 Jn 14:16, 26; 15:26
120 Mark 1:22, 27
121 John 2:1-11
122 Mark 4:35-41
123 Mark 5:11-13
124 Matthew 21:18-22
Although, as we have seen from my consideration of John 7:37-39, Jesus made high claims of Himself He clearly intended that His followers also exercise authority and power in creation. Commenting to His amazed disciples on the immediately withered fig tree Matthew’s Jesus said,

“…if you have faith and do not doubt, you will not only do what has been done to the fig tree, but even if you say to this mountain, ‘Be taken up and thrown into the sea,’ it will happen. And whatever you ask for in prayer, you will receive, if you have faith.”125

This, one of Jesus’ emphatic “truly, truly” statements, immediately precedes a challenge to the authority by which Jesus did these things. It also corroborates with John 14:12:

“I tell you the truth, anyone who has faith in me will do what I have been doing. He will do even greater things than these, because I am going to the Father.”126

That leads us back to Jesus’ great statement of John 7:37-39. It is by the Holy Spirit that humans are guided and empowered to cooperate with God in creation, and Jesus was to leave the disciples so that the Holy Spirit would come.127 The purpose of each of Jesus’ deeds of power over creation, however, was to help humans.

The obvious question this raises is whether this reveals the root of Christianity’s ecological problem? If Christianity’s founder created wine for a party, stilled storms to save humans, transferred unclean spirits from humans to swine which then died, and withered a fig tree because it had no figs for him, even though it was probably out of season, did He work for the good of humans rather than for creation in general. If so, what likelihood was there that His followers would be anything other than anthropocentric?

125 Matthew 21:21-22, NIV
126 NIV
127 John 14:16-18, 26
If “a gospel is a passion narrative with an extended introduction” we are unlikely to find much on Jesus’ ecological credentials there. It is more helpful to examine those of Jesus’ context in the Hebrew Scriptures, as I did in Chapter 2. There I found rich resources to fund Christianity’s “ambiguous ecological promise”. I also noted that the bucolic nature of many of Jesus’ parables implied an intimate knowledge of nature. Indeed, the highly specific nature of the parables makes a helpful comparison with both the gospels and Jesus’ human life and purpose. An ecotheology that agrees with Küng’s definition of Jesus’ central message, “God’s Kingdom is creation healed”, but also holds as central Christ’s salvific work on the cross is forced to admit that humans play a vital role in creation. While it is certainly not “all about us”, the whole creation does groan waiting for our redemption. To claim that Christ’s focus upon human salvation shows that Christianity is anthropocentric is an ecological equivalent of the complaint

“How odd of God to choose the Jews.”

God’s modus operandi for redeeming creation has been to work with the unlikely-but-strategic particular in creation. As far as humans have often departed from God’s intended role for us of tending creation the Swedish term “skapelsens krona”, “the crown of creation” still applies to humankind. Without our redemption nothing in creation is truly redeemed. A redeemed creation inhabited by unredeemed humankind would still be subject to our depredations. If, however, humans were destroyed creation would be incomplete. God focussed upon human redemption in Jesus because otherwise nothing of creation would truly have been redeemed.

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129 Santmire, The Travail of Nature.
130 Attributed to William Norman Ewer (1885 - 1976)
131 Psalm 8
From this perspective we can view Jesus’ seemingly anthropocentric treatment of creation in a new light. Each of the above pericopes had, of course, a heavy theological overlay. Wine indicated God’s goodness, stilling storms stood for God’s victory over chaos, pigs were, for Jews, unclean animals. Read ecotheologically, however, the challenging pericopes concern the destruction of 5,000 pigs and the olive tree. Regardless of what one believes about the still more challenging area of spiritual warfare these pericopes reveal that Jesus and the gospel authors believed that one human being was worth more than a herd of pigs (and, consequently, the livelihoods of their owners), and that it was worth withering a tree to demonstrate power over nature it was God’s intention humans should exercise.\footnote{One can in passing note that, thankfully, the New Covenant did away with the enormous animal slaughter of the Old Covenant’s sacrificial system.}

Today humans, wielding the power of western science and technology, wither forests, move mountains, dam rivers and can destroy life on this planet. The wielding of such power outside of an intimate relationship with the Maker and Lover of Creation is terribly dangerous. Why God was prepared to take the risk of partnership with humans, and the agony of restoring that relationship only God knows. To deny that humans are vitally important to creation, however, runs counter to reality. Rather, the hope of a restored creation lies in a restored relationship between humans and God, a partnership led by God, mediated by the indwelling Spirit, in which humans play their vital role of servant leadership in creation.

\textit{An Ecotheological Reading discerns an Immanent, Trinitarian God}

This understanding of partnership between humans and God is grounded in Christology and Pneumatology, that is in the Trinity. Jesus, fully human and fully God,\footnote{The thought that a human reigns in heaven is a staggering one!} is the epitome of this cooperative relationship with God. In Jesus God’s Spirit found unhindered immanence, enabling God the Son and God the Father to work as of
one mind. In an extraordinary model of mission, Jesus promised that God’s Spirit would flow from Him to others and on. That is immanence indeed, and an understanding of Christian faith far removed from the Enlightenment’s following general moral principles useful for the ordering of society. In the form of Christianity common during the Enlightenment a transcendent god suited the Enlightenment project of human sovereignty. Christology and Pneumatology, and therefore Trinitarian theology, suffered by comparison. The ecotheological reading of rivers I have proposed here strengthens the emphasis upon the Holy Spirit as God with us, and God in creation proposed by Moltmann and Bergmann discussed in Chapter 2.

Having reached the heart of Christian theology, however, it is worth restating that Clive Pearson has called ecotheology the greening of theology because it changes perspectives on central theological issues. This study of the biblical motif “the river of the water of life”, which arose from an ecological context, points to the urgent, biblically grounded ecological need for western Christianity to revise our view of God from that of a distant “sky God” to one who is both transcendent and immanent, a gracious, loving Provider who is nonetheless holy and grieved by the insistent efforts of humans to prioritize and provide for ourselves.

The implication of this trinitarian view of God for the role of humans in Creation is profound. As noted, the weakness of the favoured “stewardship model” is anthropocentrism, allowed and encouraged by the belief that God is analogous to an absent landlord. An understanding which affirms that God has always been immanent in creation, has become incarnate in Jesus Christ, and continues through

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134 Gal. 5:25. An analogy might be the IT company Apple’s MobileMe information-sharing program which automatically “pushes” information to be shared to a “cloud” (a huge data-sharing facility) and from there on to all other devices eligible to share the same information.
135 Jn 7:38b
the Holy Spirit to work for Creation’s restoration, and that this God intends to work with and through humans for the good of Creation makes anthropocentrism more difficult to sustain theologically. The further convictions that God owns\textsuperscript{137} and loves\textsuperscript{138} all of creation, not simply humankind, and the model of kenotic servant leadership exhibited by Jesus\textsuperscript{139} all point to the kind of role God intends humans to exercise in creation.

In the final chapter I shall hold in conversation Aboriginal concepts of immanence with the work of two western theologians, and relate the result to how we might live in the Murray-Darling Basin.

\textsuperscript{137} Psalm 24:1
\textsuperscript{138} John 3:16
\textsuperscript{139} Mark 10:35-45; Philippians 2:5-11
Chapter 10
Release the River! An Ecotheological Call
to an Anthropocentric World

Introduction
The previous chapter’s exploration of the biblical motif “the river of the water of life” led to consideration of how God is understood in Christian theology, that is to Christology, Pneumatology and Trinity. This final chapter relates insights from the spirituality of Aborigines in Australia, a context far from the traditional European and North American wellsprings of Christian theological discourse, to that centre of theology. Noting that Jürgen Moltmann moved from Trinity to Spirit, developing a pneumatological doctrine of creation by weaving the three articles of the Apostles’ Creed together in a trinitarian sense,¹ I shall explore how the Spirit might be released to people in the Murray-Darling Basin and beyond. I shall do this by relating and interpreting two personal experiences by drawing upon two concepts from Aboriginal spirituality. These are dadirri,² and the understanding, called intersubjectivity³ by Deborah Bird Rose, that as Spirit infuses all of Creation, so is all Creation linked.

I shall explore how appropriating these gifts might affect the way in which western Christians understand and live out our relationships with God and Creation. Agreeing with Ernst Conradie’s warning of the dangers of an over-emphasis upon God’s immanence, I shall argue that this, ironically, has much the same effect as an overemphasis upon God’s transcendence. In our anthropocentric “will to power” humans exploit inadequate theology to give ourselves permission to rule and exploit creation. I shall conduct a short “mind experiment”, exploring what might result from a more theocentric and biocentric, and less anthropocentric approach to the Murray-

³ Ibid. 102
Darling Basin’s waterways, and conclude this thesis on releasing the river with a consideration of dams as images of the human desire for control.

**The Parable of the Shopping Centre Built on the Creek**

Some years ago my family moved to a new home in Sydney. As was my custom I explored the locality, paying particular attention to where creeks and waterways flowed. One day I followed a creek downstream until it disappeared into a stormwater pipe under a road. Across the road I saw a shopping centre, which I realised had been built over the creek.

The shopping centre is a multi-storied building and carpark so large it is like an artificial universe of which humans are virtually the only visible inhabitants. Under this enclosed universe, more populated than many country towns, the creek flowed on, beneath another road, through a local business park and under a motorway before disappearing into a national park. Following it into thick scrub I discovered a gorgeous waterfall 400 metres from the shopping centre.

It is balm for the soul to sit a while by that waterfall, yet few people know it exists. The shopping centre built over the waterway, with its milling crowds, its artificiality and its constant encouragement to consume, however, is an important influence on the life patterns and experience of thousands of people. There people do business and recreate, buy and sell, look and are seen, build and break relationships, form and affirm their identities, all with other humans. Built on top of the waterway, it is a parable of our Euraustalian way of life. Anthropocentric followers of a transcendent god, we have transcended the rest of creation, but at what cost to it and to ourselves?

**Mitt Smultronställe**

I believe that many Euraustalian “shopping centre livers” are aware at some level of what we are depriving ourselves of. Once, prior to leaving Australia to live overseas, I followed an instinct to re-connect with a place that gives

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4 Swedish for “My Place of Wild Strawberries”.
me life. For me Blue Gum Forest, in the Blue Mountains not far from the Jamison Valley I described in Chapter 4, and on the eastern fringe of the Murray-Darling Basin, is a “smultronställe,” a “place of wild strawberries” to which I gladly return because there I find sweet food for my soul. On this occasion, however, the rain was drenching. I had decided to simply hike through the forest and return home, until I reached Acacia Flat, in the heart of the forest. There, entranced by the stately eucalypts, I had my tent pitched within minutes. The next morning a scene I have never forgotten greeted me as I opened the tent flap. The rain had cleared and a heavy mist was rising from the ground, through the forest and over the creek. A few metres away a possum was foraging, completely at ease. I stood as still as time, watching, absorbing, and in some sense I didn’t understand, at one with all around me.

That occasion constituted my most powerful experience answering Miriam-Rose Ungunmerr’s description of dadirri. It felt healthy and “right” to feel so connected and immersed in my natural surroundings, to not distinguish between “the spiritual” and “the worldly”, “the sacred” and “the profane”, this thing and that concept. In that place I met Creator even as I met Creation. I was not God, nor was I of precisely the same essence as the forest, the possum, the mist and the creek. In that place, at that kairos moment, however, I was aware of how powerfully I am connected with these others. Deborah Bird Rose has called this experience of connectedness “intersubjectivity”, and Sallie McFague has explained it:

“...everything is interrelated and interdependent, everything (maple leaves, stars, deer, dirt -- and not just human beings) is different from everything else. Individuality and interrelatedness are features of the universe; hence, no one voice or single species is the only one that counts.”

*Spirit & Dadirri*

Consideration of the biblical tie-rod called “the river of the water of life” took us in the previous chapter to Jesus’ promise that the Holy Spirit would flow as rivers of living water out of the stomachs of those who drank from Him. The visionary rivers in Ezekiel 47 and Revelation 22 were for the

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5 Swedish.

healing and restoration of Israel’s people and land, and of the nations. John 7 tells us that God intends to heal and restore by God’s Spirit, working in and through God’s people.

The Parable of the Shopping Centre built upon the Creek, and Chapters 5-7 indicate, however, that “walking by the Spirit”, living by the understanding that God’s Spirit is our real, contactable, immanent, indwelling Guide, is a concept foreign for many Euraustralians. Consequently, we, too, see ourselves as living “on” “nature-as-object”, rather than “in” “Creation-as-subject”. To coin a word, the Parable indicates that the worldview that forms us has more to do with “superobjectivity” than intersubjectivity.

This Aboriginal gift of dadirri may help Euraustralian Christians to learn again, deeply, that “imman-uel”, God is with us, and that the ecological necessity to “release the river” is best resourced by the theological call to “release the Holy Spirit”. Dadirri is

“inner deep listening and quiet still awareness…something like contemplation”,

A quiet paying attention to the other and connectedness with the other, it is the opposite of McFague’s “arrogant eye” which seeks to analyse the other, so as to exploit it. Anthropocentric Euraustralian culture finds selfless paying attention difficult, but as Pope John Paul II told the gathering of Aborigines in Alice Springs during his visit in 1986,

“The silence of the bush taught you a quietness of soul that put you in touch with another world, the world of God’s Spirit”

The stillness and silence of dadirri’s intersubjectivity does often mysteriously attract Euraustralian shopping centre livers, even as we are caught up in our superobjective lifestyle.

The gift dadirri and intersubjectivity bring to Christian theology is to stimulate and deepen the understanding that in the Holy Spirit God is immanent beyond our capacity to understand. Even if Christians believe that

7 Galatians 5:25
8 Stockton, The Aboriginal Gift: Spirituality for a Nation. 104
9 Ibid. 101
the Spirit is in and around us, and many effectively do not, this insight comes with much greater force when presented from the point of view of a spirituality that originates from the earth beneath our feet, rather than from the heavens high above. This gift from the aboriginal periphery to Christian spirituality may have the capacity for theological, and through that, ecological and personal healing.

Such a suggestion will set alarm bells ringing for some. Would not the acceptance of ‘gifts’ from ‘pagan’ Aboriginal spirituality be syncretistic, risking the kinds of results I argued in Chapter 8, viz. that western Christianity would again be influenced by a movement ultimately hostile to it? Aware of the dangers of syncretism, I am also convinced that God works outside God’s Old and New Covenants to promote God’s restored rule on earth. I do not propose incorporating non-Christian concepts into Christian theology. Rather, this proffered gift needs to be appraised as to whether it is consonant with Christian theology, lest it proves to be a Trojan horse. Such an appraisal must be done humbly, however, mindful that the spirituality of those who offer the gift has helped to sustain them and country for thousands of years, whereas the spirituality of we who have supplanted them risks not doing this.

I shall explore the Aboriginal gift of dadirri and intersubjectivity by holding these in conversation with the ecological theology of Jürgen Moltmann and the ecological Christian anthropology of Ernst Conradie. Moltmann stands within the great German tradition of theological scholarship perhaps more influential than any other in forming western Christianity during the period under discussion in this thesis. He is also, however, a theological innovator who does theology in a manner open to its changing context. Conradie is a “critical friend” of Moltmann, appreciating his “seminal

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10 There is no space to conduct this discussion, but Jesus’ genealogy, which included non-Israelites and others of less than ideal moral status, provides a starting point.
11 Strange as it may seem, Aborigines commonly do wish to share their knowledge and insights with their supplanters.
work”,

but warning against overemphasizing God’s immanence at the expense of God’s transcendence.

**Moltmann on God as Trinity and as Immanent Spirit**

In *God in Creation* Moltmann argued that if we understand God as Trinitarian, rather than monotheistically,

“we can no longer, either, conceive his relationship to the world he has created as a one-sided relationship of domination...[but]...an intricate relationship of community – many-layered, many-faceted and at many levels.”

Moltmann suggested eight guiding ideas for an ecological doctrine of creation. Arguing that

“knowledge of nature as God’s creation is participating knowledge”,

he anticipated Sallie McFague’s analogies of the “arrogant” and the “loving” eyes and, to some degree, Deborah Bird Rose’s term “intersubjectivity”. Moltmann’s emphasis on eschatological hope led him to propose that creation will be perfected “for glory”. Contrary to the anthropocentric view that sees humans as “the crown of creation”, Moltmann affirmed that

“it is only the Sabbath which completes and crowns creation”.

Yet for Moltmann Creation is contingent, not perfect *per se*. The incarnation of the eternal Logos in Christ is “the Messianic Preparation of Creation to be the Kingdom” which he expressed in Latin, developing a principle of medieval theology:

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15 Ibid. 2-4
18 Swedish term.
20 Ibid. 7
21 *gratia non destruet, sed praesupponit et perfecit naturam*. Ibid. 7
“Gratia non perfecit, sed praeparat naturam ad gloriam aeternam; gratia non est perfectio naturae, sed praeparatio messianica mundi ad regnum Dei.”

Returning to Moltmann’s starting point,

“According to the Christian interpretation, creation is a trinitarian process: the Father creates through the Son in the Holy Spirit. The created world is therefore created ‘by God’, formed ‘through God’ and exists ‘in God’.

As Moltmann moved directly from God the Trinity to the Holy Spirit a discussion with Aboriginal spirituality can take shape. His following statement could have been written at Echo Point, overlooking the Jamison valley with me:

“Everything that is, exists and lives in the unceasing inflow of the energies and potentialities of the cosmic Spirit. This means that we have to understand every created reality in terms of energy, grasping it as the realized potentiality of the divine Spirit. Through the energies and potentialities of the Spirit, the Creator is himself present in his creation. He does not merely confront it in his transcendence; entering into it, he is also immanent in it.”

Moltmann’s biblical justification for this electric statement is Psalm 104:29-30. That God is immanent in Creation through the Spirit is strikingly similar to Norman Habel’s comment about “Spirit emerging from the Land”, and strikingly dissimilar from the European sky god. The European sky god leaves humans to our own devices, and we swing between arrogance and despair, but to experience God the Spirit as immanent, emerging from the land which hums with energy encourages ecological hope and joy. The Spirit who reveals Herself from the Land, pulsating with divine energy, shows us that in reality “In him we live and move and have our being.” Therefore neither ecological arrogance nor ecological

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22 Ibid. 8
23 Ibid. 9
24 Chapter 4, 82
26 I also referred to this text. Chapter 4, 85
27 Chapter 4, 84
28 Moltman argued that for the Hebrews both Spirit (ruach) and Wisdom are depicted as feminine. Moltmann, God in Creation: A New Theology of Creation and the Spirit of God.
29 Acts 17:28
despair are appropriate, for although humans have the power to deface God’s earth, God will renew its face.

From his understanding of God as Trinity and as Spirit it is a short step for Moltmann to suggest a *Principle of Mutual Interpenetration*. At this point, correspondences between Moltmann’s thinking, and *dadirri* and *intersubjectivity*, are evident. In God, Moltmann affirmed along with Karl Barth,

> “there is no one-sided relationship of superiority and subordination, command and obedience, master and servant…In the triune God is the mutuality and reciprocity of love.”\(^{30}\)

As with Barth it was then only another short step for Moltmann to argue that

> “…all relationships which are analogous to God reflect the primal, reciprocal indwelling and mutual interpenetration of the Trinitarian *perichoresis*: God *in* the world and the world *in* God; heaven and earth *in* the kingdom of God, pervaded by his glory…”\(^{31}\)

Moltmann’s theology of the Spirit helps us to appreciate that both God and humans are immanent in Creation. Moltmann described

> “the community of all created things [which] communicate with each other and with God, each in its own way”,\(^{32}\)

created by the Spirit when he is ‘poured out’ on the whole creation.

For Moltmann Acts 17:28 describes why a relational worldview takes priority over a “mechanistic” one:

> “According to the mechanistic theory, things are primary, and their relations to one another are determined secondarily, through ‘natural laws’. But in reality relationships are just as primary as the things themselves. ‘Thing’ and ‘relationship’ are complementary modes of appearance, in the same way as particle and wave in the nuclear sector. For nothing in the world exists, lives and moves *of itself*. Everything exists, lives and moves *in others*, in one another, with one another, for one another, in the cosmic interrelations of the divine Spirit.”\(^{33}\)

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\(^{31}\) Ibid. 17

\(^{32}\) Ibid. 11

\(^{33}\) Ibid. 11
Moltmann has described why Rose’s “intersubjectivity” works, why many shopping centre-living Euraustralians long for dadirri, why when Sue from the Berri focus group’s husband

“comes to the river he becomes more peaceful, more contented, more himself….Being around the river is part of a healthy Tim.”

All of Creation, including humans, is connected in the Spirit. A Christian understanding of reality is relational; a mechanistic understanding that is not undergirded by a relational understanding is not Christian:

“For only the Spirit of God exists ex se; and it is therefore the Spirit who has to be seen as the sustaining foundation of everything else, which does not exist ex se but ab alio et in aliis…”‘In the beginning was relation,’ writes Martin Buber.

The community of Creation is dependent upon the Creator, Who is already Relation, already Community, for the Creator is Trinity. Aboriginal spirituality does not provide that insight, but it does call Christians back to who we are, part of a community of Creation that Christians identify as the Trinitarian God’s, that is being restored and healed by the Spirit who wants, though She does not need, our help. Dadirri does not identify the Colossians’ cosmic Christ, through Whom and for Whom all things were created, but it gives all people, including Euraustralian Christians, help for living in the community of God’s Creation: we belong, and to pay attention.

With his final guiding idea, The Cosmic Spirit and Human Consciousness, Moltmann further described the foregoing and set it in a larger context. This association of humans with the natural environment he called a “spiritual ecosystem”. Human societies are

“part-systems bound up with the ecosystem ‘earth’ (Gaia); for human societies live in and from the recurring cycles of earth and sun, air and water…So human beings are participants and subsystems of the cosmic life system, and of the divine Spirit that lives in it.”

34 Chapter 7, 234
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36 Ibid. 18
And the continued existence of all things depends upon the will of God, the Spirit in Creation.  

Conradie’s Caution

Noting that

“Reflection on the role and place of the Spirit in ecological terms is perhaps one of the most difficult areas of Christian theological reflection…”

and that

“it is important to see the work of the Spirit in Trinitarian perspective”,

Moltmann’s Trinitarian approach to God as Spirit immanent in Creation must be reckoned as a major contribution. Celia Deane-Drummond explained that

“…the traditional restriction of the work of the Spirit, understood as the Holy spirit working exclusively in the human community, has engendered a counter-reaction through attempts at recovery of animist notions of the Spirit as being equally and universally identified with creation itself”,

so that some

“resist any doctrinal claims for the work of the Spirit”,

wishing to speak only of

“those versions of the Spirit that serve to promote such change…[as they see to be] appropriate today.”

Others have developed their understanding of the Spirit with reference to “pre-modern, classical modes of thought.”

Ernst Conradie regards God in Creation as one of

“numerous ecological theologies [in which] the distinction between Creator and creation is…underplayed.”

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37 The Wisdom of Solomon 11:24-12:1
38 Celia E. Deane-Drummond, Eco-Theology (London: Darton, Longman & Todd Ltd, 2008). 130
39 Ibid. 130
While appreciating that
“...This theological emphasis on God’s immanence in creation may be helpful to guard against a deist separation and alienation between God and creation”, 42

Conradie argued that
“...this distinction between Creator and creatures is not necessarily an alienating one.” 43

Conradie also suggested a trinitarian approach in his area of research of Christian anthropology, but followed Karl Rahner’s ‘Rule’, 44 arguing that
“...One can only speak of the triune God on the basis of God’s revelation in the history of salvation. I will therefore refrain from speculation on the immanent trinity and will resist the temptation presented by several Christian anthropologies 45 to ground a relational anthropology on an inner-trinitarian sense of relatedness and community.” 46

I affirm Joseph Sittler’s insistence that
“...God is not identical with but is present in what he creates, is present in the redemption of what he creates, and is present in all restoration, uniting and upholding of his redeemed creation”; 47

Colin Gunton’s that
“...the distance between Creator and creature is not necessarily an alienating one”; 48

and Conradie’s discussion on the nature and function of transcendence and distance between humans, and between humans and God, and his agreement, with Luther, that
“...Our lack of knowledge of God is the result of sin which has alienated us from God.” 49

41 Conradie, An Ecological Christian Anthropology: At Home on Earth? 54
42 Ibid. 54
43 Ibid. 54
45 Conradie’s footnote at this point included God in Creation.
46 Conradie, An Ecological Christian Anthropology: At Home on Earth? 20
48 Ibid. 55
49 Ibid. 56
Conradie’s argument confirms the importance of vigilantly upholding both God’s transcendence and God’s immanence. I have already argued extensively that western Christianity’s neglect of God’s immanence allowed the Deist understanding that God was remote and uninvolved, and eventually the Enlightenment’s humanist agenda, that of taking God’s place in nature. Neglecting God’s transcendence, on the other hand, tends to allow our understanding God to collapse into that of nature so that, as in pantheism, Creator and Creation become one. That neglecting either characteristic of God leads, eventually, to the similar result of humans seeing ourselves in some sense as divine provides a chilling reminder of our anthropocentrism, the human “will to power”.  

Humans will never describe adequately this great, mysterious God. In our anthropocentric “will to power”, however, we will always seek ways to advantage ourselves independently of God. That being the case the task of theology is to keep talking about God, knowing that we will never be quite right, but also that if we go too far wrong calamities can result.

**Releasing the River in the Murray-Darling Basin**

Two hypothetical but nonetheless important questions relate the foregoing to the Murray-Darling Basin’s waterways. Had such a Trinitarian theology emphasizing God’s immanence undergirded the belief systems of Euraustralian settlers, rather than the transcendent, anthropocentric one I have described, how might it have affected the ways in which they affected the Murray-Darling Basin’s waterways? And how might such a theology work today?

No definitive answer to the first question is possible, of course. The question immediately raises a raft of prior questions about the “shape” of European culture had it been formed by a different theology. Would Europeans have developed scientific method and modern science and technology? Would the British have had the means and the will to found colonies in inhospitable, foreign terrain on the other side of the world? Neither would comparing with Aboriginal culture provide much help.

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50 Friedrich Nietzsche’s term.
Despite the points of contact I am proposing, Aboriginal culture does not understand God as Trinity. However, a “mental experiment” that explored how Christians with an understanding of God as immanent in the Holy Spirit as well as transcendent, and of their relationship with the world as biocentric rather than simply anthropocentric might yield interesting results when related to the Basin’s waterways.

Explorers might have displayed attitudes more similar to those of Sturt, who showed compassion towards the Aborigines, than to those of Blaxland, Wentworth and Lawson, who seemed scarcely to acknowledge their constant, unseen presence and prior occupancy of the land. Graziers might have noticed earlier and more sympathetically how their hoofed flocks and herds were compacting the earth and thus degrading both landscape and biota, and taken steps to counteract this. Colonial authorities might have used the proceeds from mining licences towards remediation of gold-bearing waterways and landscapes that bore a variety of extractable minerals. A society less dedicated to humans becoming wealthy at the expense of the environment might have been more careful about allowing recent immigrants (in the nineteenth century) and returned soldiers (in the twentieth) to farm marginal land.

A society less dedicated to the Enlightenment project of humans remaking their surroundings in their own image might have sought harder to understand the Murray-Darling Basin as having its own ecological integrity, rather than trying to remake it into something closer to the European landscapes from which they and their forebears had come. There were, of course, economic reasons for building weirs and dams, desnagging waterways, forming irrigation areas and diverting rivers, but Euraustralian settlers more motivated by caring for ecology than economy might have been less inclined to turn the Basin’s waterways into “working rivers”.

And so to the second question. How might a biocentric Christian theology that understands God as an immanent, incarnationally-active Creation-lover influence how Australians affect the Murray-Darling Basin’s waterways today? With parts of the southern Basin into the seventh year of dry
weather, the Coorong in severe ecological stress and governments now buying properties and water rights to restore ecological flows the thesis’ tag line, “Release the river!” becomes more pertinent with each passing month. Is the time of irrigation coming to an end? Because of the tag line and its history it is appropriate that I conclude this short “thought experiment” and the thesis as a whole by considering what role dams and the other infrastructure of irrigation would play if the Basin’s inhabitants were guided by this theology of rivers and the injunction “Release the river”.

**Release the River – A Conclusion**

Dams are powerful symbolic and physical demonstrations of human mastery over rivers, and hence over nature. Storing water for human use, regulating unruly flows, and since recent times providing hydroelectricity they represent a triumph of the Enlightenment project. At the same time, however, dams massively disrupt riverine ecology. Patrick McCully has demonstrated

> “...that [around the world] dams have had massive negative impacts on nature and society, and that their benefits have been exaggerated and could often have been produced by other less destructive and more equitable means...”

There are now so many dams, weirs and pumps along the Murray-Darling Basin’s waterways that eighty per cent of its water is routinely diverted for human use. Many years no water reaches the sea. Jeremiah’s words are haunting. Will our descendants, impoverished and bitter, say that Australians dug out cisterns for ourselves, cracked cisterns that provided short-term wealth, but that ultimately held no water? Yet blanket condemnations of water use in the Basin are neither accurate nor helpful. Humans need adequate water supplies for ourselves and our enterprises. Clearly, water storage is necessary. There are horror stories of water theft

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51 Giving poignant point to the phrase “The sum of ecological sins in a catchment is found at its mouth.”
53 Jeremiah 2:12-13
and over-allocation, but Australia also has some wonderful farmers, working in difficult terrain.\textsuperscript{54}

How, then, can an ecotheologican help to resolve the question of what is acceptable use of the Basin’s water resources and what is ecological sin, wilfully forsaking God and abusing God’s gifts in creation? A common criterion by which the appropriateness of human use of the environment is gauged today is ‘sustainability’. Basically, that means that human use that allows the natural environment it impacts to sustain itself is deemed acceptable. However, although that is better than recklessly exploiting the environment it is still anthropocentric, prioritising human interests. As long as we treat the Basin’s waterways as being primarily of instrumental value, selfish human nature is likely to tip the balance of perceived benefit in favour of itself. For example, the agreement to restore to the Snowy River the estimated minimum 21\% environmental flow needed to begin repairing its environs allowed the remaining 79\% to continue to supplement the Murray-Darling Basin’s water supply.\textsuperscript{55}

To give practical effect to a theology of rivers’ divine-human partnership for the good of creation we need a motivation stronger and more internal than what science and law can provide. The late Pope John Paul II called for “ecological conversion”\textsuperscript{,\textsuperscript{56}} I call the needed motivation love. John 3:16 teaches us that God loves the world, not simply humans, and as we have seen, humans are given the high calling of cooperating with God in tending the world.

Biblical leadership is servant leadership grounded in the kenotic servant love of Jesus Christ.\textsuperscript{57} In the word of one eucharistic Prayer of Great Thanksgiving:

\textsuperscript{54} For example, the Banrock Station on the banks of the lower Murray River is doing superb work in wetlands restoration as well as producing fine wines!
\textsuperscript{55} Fereidoun Ghasseimi and Ian White, \textit{Inter-Basin Water Transfer: Case Studies from Australia, United States, Canada, China and India} (Cambridge: Cambridge University Press, 2007). 104 According to the Agreement eventually 28\% of environmental flows will be returned to the Snowy River.
\textsuperscript{57} Phil. 2:5-11
“You formed us in Your own image, giving the whole world into our care, so that, in obedience to You, our Creator, we might rule and serve all Your creatures.”

It is in this sense that nature is our neighbour, whom we are to love.

To live in the loving, leading-by-serving relationship with the waterways of their great catchment area the Murray-Darling Basin’s human inhabitants need to know their ecological context intimately. Residents, politicians and others who bear responsibility for the Basin need to “look with a loving eye”. More than that, we all need to undergo an ecological conversion, “be transformed by the renewing of our minds”; so as to learn to love nature as our neighbour. Deeper even than that, dadirri can help us. By paying deep attention to Creation and Creator we can experience a deep, intersubjective sense of oneness with both. Stimulated by the world-wide ecological crisis we need to reread the Bible, re-think our theology and recapture the practical love for God’s creation that for Saint Francis of Assisi and many other Christian saints was part and parcel of being a follower of Christ. And, drinking deeply of the “river of the water of life” that has its source in Christ and is another name for the Holy Spirit we need to allow that Spirit to break those spiritual, psychological and physical dams by which we seek to control everything around us.

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58 *Uniting Church Worship Services*, (Melbourne: The Joint Board of Christian Education for Australia and New Zealand, 1980). 32
59 Romans 12:2
Appendices

Appendix 1

The Historical Roots of Our Ecological Crisis

Lynn White, Jr.

A conversation with Aldous Huxley not infrequently put one at the receiving end of an unforgettable monologue. About a year before his lamented death he was discoursing on a favorite topic: Man's unnatural treatment of nature and its sad results. To illustrate his point he told how, during the previous summer, he had returned to a little valley in England where he had spent many happy months as a child. Once it had been composed of delightful grassy glades; now it was becoming overgrown with unsightly brush because the rabbits that formerly kept such growth under control had largely succumbed to a disease, myxomatosis, that was deliberately introduced by the local farmers to reduce the rabbits' destruction of crops. Being something of a Philistine, I could be silent no longer, even in the interests of great rhetoric. I interrupted to point out that the rabbit itself had been brought as a domestic animal to England in 1176, presumably to improve the protein diet of the peasantry.

All forms of life modify their contexts. The most spectacular and benign instance is doubtless the coral polyp. By serving its own ends, it has created a vast undersea world favorable to thousands of other kinds of animals and plants. Ever since man became a numerous species he has affected his environment notably. The hypothesis that his fire-drive method of hunting created the world's great grasslands and helped to exterminate the monster mammals of the Pleistocene from much of the globe is plausible, if not proved. For 6 millennia at least, the banks of the lower Nile have been a human artifact rather than the swampy African jungle which nature, apart from man, would have made it. The Aswan Dam, flooding 5000 square

White, "The Historical Roots of Our Ecologic Crisis."
miles, is only the latest stage in a long process. In many regions terracing or irrigation, overgrazing, the cutting of forests by Romans to build ships to fight Carthaginians or by Crusaders to solve the logistics problems of their expeditions, have profoundly changed some ecologies. Observation that the French landscape falls into two basic types, the open fields of the north and the bocage of the south and west, inspired Marc Bloch to undertake his classic study of medieval agricultural methods. Quite unintentionally, changes in human ways often affect nonhuman nature. It has been noted, for example, that the advent of the automobile eliminated huge flocks of sparrows that once fed on the horse manure littering every street.

The history of ecologic change is still so rudimentary that we know little about what really happened, or what the results were. The extinction of the European aurochs as late as 1627 would seem to have been a simple case of overenthusiastic hunting. On more intricate matters it often is impossible to find solid information. For a thousand years or more the Frisians and Hollanders have been pushing back the North Sea, and the process is culminating in our own time in the reclamation of the Zuider Zee. What, if any, species of animals, birds, fish, shore life, or plants have died out in the process? In their epic combat with Neptune have the Netherlanders overlooked ecological values in such a way that the quality of human life in the Netherlands has suffered? I cannot discover that the questions have ever been asked, much less answered.

People, then, have often been a dynamic element in their own environment, but in the present state of historical scholarship we usually do not know exactly when, where, or with what effects man-induced changes came. As we enter the last third of the 20th century, however, concern for the problem of ecologic backlash is mounting feverishly. Natural science, conceived as the effort to understand the nature of things, had flourished in several eras and among several peoples. Similarly there had been an age-old accumulation of technological skills, sometimes growing rapidly, sometimes slowly. But it was not until about four generations ago that Western Europe and North America arranged a marriage between science and technology, a union of the theoretical and the empirical approaches to
our natural environment. The emergence in widespread practice of the Baconian creed that scientific knowledge means technological power over nature can scarcely be dated before about 1850, save in the chemical industries, where it is anticipated in the 18th century. Its acceptance as a normal pattern of action may mark the greatest event in human history since the invention of agriculture, and perhaps in nonhuman terrestrial history as well.

Almost at once the new situation forced the crystallization of the novel concept of ecology; indeed, the word ecology first appeared in the English language in 1873. Today, less than a century later, the impact of our race upon the environment has so increased in force that it has changed in essence. When the first cannons were fired, in the early 14th century, they affected ecology by sending workers scrambling to the forests and mountains for more potash, sulphur, iron ore, and charcoal, with some resulting erosion and deforestation. Hydrogen bombs are of a different order: a war fought with them might alter the genetics of all life on this planet. By 1285 London had a smog problem arising from the burning of soft coal, but our present combustion of fossil fuels threatens to change the chemistry of the globe's atmosphere as a whole, with consequences which we are only beginning to guess. With the population explosion, the carcinoma of planless urbanism, the now geological deposits of sewage and garbage, surely no creature other than man has ever managed to foul its nest in such short order.

There are many calls to action, but specific proposals, however worthy as individual items, seem too partial, palliative, negative: ban the bomb, tear down the billboards, give the Hindus contraceptives and tell them to eat their sacred cows. The simplest solution to any suspect change is, of course, to stop it, or better yet, to revert to a romanticized past: make those ugly gasoline stations look like Anne Hathaway's cottage or (in the Far West) like ghost-town saloons. The "wilderness area" mentality invariably advocates deep-freezing an ecology, whether San Gimignano or the High Sierra, as it was before the first Kleenex was dropped. But neither atavism nor prettification will cope with the ecologic crisis of our time.
What shall we do? No one yet knows. Unless we think about fundamentals, our specific measures may produce new backlashes more serious than those they are designed to remedy.

As a beginning we should try to clarify our thinking by looking, in some historical depth, at the presuppositions that underlie modern technology and science. Science was traditionally aristocratic, speculative, intellectual in intent; technology was lower-class, empirical, action-oriented. The quite sudden fusion of these two, towards the middle of the 19th century, is surely related to the slightly prior and contemporary democratic revolutions which, by reducing social barriers, tended to assert a functional unity of brain and hand. Our ecologic crisis is the product of an emerging, entirely novel, democratic culture. The issue is whether a democratized world can survive its own implications. Presumably we cannot unless we rethink our axioms.

The Western Traditions of Technology and Science

One thing is so certain that it seems stupid to verbalize it: both modern technology and modern science are distinctively Occidental. Our technology has absorbed elements from all over the world, notably from China; yet everywhere today, whether in Japan or in Nigeria, successful technology is Western. Our science is the heir to all the sciences of the past, especially perhaps to the work of the great Islamic scientists of the Middle Ages, who so often outdid the ancient Greeks in skill and perspicacity: al-Razi in medicine, for example; or ibn-al-Haytham in optics; or Omar Khayyam in mathematics. Indeed, not a few works of such geniuses seem to have vanished in the original Arabic and to survive only in medieval Latin translations that helped to lay the foundations for later Western developments. Today, around the globe, all significant science is Western in style and method, whatever the pigmentation or language of the scientists.

A second pair of facts is less well recognized because they result from quite recent historical scholarship. The leadership of the West, both in technology and in science, is far older than the so-called Scientific Revolution of the 17th century or the so-called Industrial Revolution of the 18th century. These terms are in fact outmoded and obscure the true nature of what they
try to describe--significant stages in two long and separate developments. By A.D. 1000 at the latest--and perhaps, feebly, as much as 200 years earlier--the West began to apply water power to industrial processes other than milling grain. This was followed in the late 12th century by the harnessing of wind power. From simple beginnings, but with remarkable consistency of style, the West rapidly expanded its skills in the development of power machinery, labor-saving devices, and automation. Those who doubt should contemplate that most monumental achievement in the history of automation: the weight-driven mechanical clock, which appeared in two forms in the early 14th century. Not in craftsmanship but in basic technological capacity, the Latin West of the later Middle Ages far outstripped its elaborate, sophisticated, and esthetically magnificent sister cultures, Byzantium and Islam. In 1444 a great Greek ecclesiastic, Bessarion, who had gone to Italy, wrote a letter to a prince in Greece. He is amazed by the superiority of Western ships, arms, textiles, glass. But above all he is astonished by the spectacle of waterwheels sawing timbers and pumping the bellows of blast furnaces. Clearly, he had seen nothing of the sort in the Near East.

By the end of the 15th century the technological superiority of Europe was such that its small, mutually hostile nations could spill out over all the rest of the world, conquering, looting, and colonizing. The symbol of this technological superiority is the fact that Portugal, one of the weakest states of the Occident, was able to become, and to remain for a century, mistress of the East Indies. And we must remember that the technology of Vasco da Gama and Albuquerque was built by pure empiricism, drawing remarkably little support or inspiration from science.

In the present-day vernacular understanding, modern science is supposed to have begun in 1543, when both Copernicus and Vesalius published their great works. It is no derogation of their accomplishments, however, to point out that such structures as the Fabrica and the De revolutionibus do not appear overnight. The distinctive Western tradition of science, in fact, began in the late 11th century with a massive movement of translation of Arabic and Greek scientific works into Latin. A few notable books--Theophrastus,
for example--escaped the West's avid new appetite for science, but within less than 200 years effectively the entire corpus of Greek and Muslim science was available in Latin, and was being eagerly read and criticized in the new European universities. Out of criticism arose new observation, speculation, and increasing distrust of ancient authorities. By the late 13th century Europe had seized global scientific leadership from the faltering hands of Islam. It would be as absurd to deny the profound originality of Newton, Galileo, or Copernicus as to deny that of the 14th century scholastic scientists like Buridan or Oresme on whose work they built. Before the 11th century, science scarcely existed in the Latin West, even in Roman times. From the 11th century onward, the scientific sector of Occidental culture has increased in a steady crescendo.

Since both our technological and our scientific movements got their start, acquired their character, and achieved world dominance in the Middle Ages, it would seem that we cannot understand their nature or their present impact upon ecology without examining fundamental medieval assumptions and developments.

**Medieval View of Man and Nature**

Until recently, agriculture has been the chief occupation even in "advanced" societies; hence, any change in methods of tillage has much importance. Early plows, drawn by two oxen, did not normally turn the sod but merely scratched it. Thus, cross-plowing was needed and fields tended to be squarish. In the fairly light soils and semiarid climates of the Near East and Mediterranean, this worked well. But such a plow was inappropriate to the wet climate and often sticky soils of northern Europe. By the latter part of the 7th century after Christ, however, following obscure beginnings, certain northern peasants were using an entirely new kind of plow, equipped with a vertical knife to cut the line of the furrow, a horizontal share to slice under the sod, and a moldboard to turn it over. The friction of this plow with the soil was so great that it normally required not two but eight oxen. It attacked the land with such violence that cross-plowing was not needed, and fields tended to be shaped in long strips.
In the days of the scratch-plow, fields were distributed generally in units capable of supporting a single family. Subsistence farming was the presupposition. But no peasant owned eight oxen: to use the new and more efficient plow, peasants pooled their oxen to form large plow-teams, originally receiving (it would appear) plowed strips in proportion to their contribution. Thus, distribution of land was based no longer on the needs of a family but, rather, on the capacity of a power machine to till the earth. Man's relation to the soil was profoundly changed. Formerly man had been part of nature; now he was the exploiter of nature. Nowhere else in the world did farmers develop any analogous agricultural implement. Is it coincidence that modern technology, with its ruthlessness toward nature, has so largely been produced by descendants of these peasants of northern Europe?

This same exploitive attitude appears slightly before A.D. 830 in Western illustrated calendars. In older calendars the months were shown as passive personifications. The new Frankish calendars, which set the style for the Middle Ages, are very different: they show men coercing the world around them—plowing, harvesting, chopping trees, butchering pigs. Man and nature are two things, and man is master.

These novelties seem to be in harmony with larger intellectual patterns. What people do about their ecology depends on what they think about themselves in relation to things around them. Human ecology is deeply conditioned by beliefs about our nature and destiny—that is, by religion. To Western eyes this is very evident in, say, India or Ceylon. It is equally true of ourselves and of our medieval ancestors.

The victory of Christianity over paganism was the greatest psychic revolution in the history of our culture. It has become fashionable today to say that, for better or worse, we live in the "post-Christian age." Certainly the forms of our thinking and language have largely ceased to be Christian, but to my eye the substance often remains amazingly akin to that of the past. Our daily habits of action, for example, are dominated by an implicit faith in perpetual progress which was unknown either to Greco-Roman antiquity or to the Orient. It is rooted in, and is indefensible apart from, Judeo-Christian
theology. The fact that Communists share it merely helps to show what can be demonstrated on many other grounds: that Marxism, like Islam, is a Judeo-Christian heresy. We continue today to live, as we have lived for about 1700 years, very largely in a context of Christian axioms.

What did Christianity tell people about their relations with the environment? While many of the world's mythologies provide stories of creation, Greco-Roman mythology was singularly incoherent in this respect. Like Aristotle, the intellectuals of the ancient West denied that the visible world had a beginning. Indeed, the idea of a beginning was impossible in the framework of their cyclical notion of time. In sharp contrast, Christianity inherited from Judaism not only a concept of time as nonrepetitive and linear but also a striking story of creation. By gradual stages a loving and all-powerful God had created light and darkness, the heavenly bodies, the earth and all its plants, animals, birds, and fishes. Finally, God had created Adam and, as an afterthought, Eve to keep man from being lonely. Man named all the animals, thus establishing his dominance over them. God planned all of this explicitly for man's benefit and rule: no item in the physical creation had any purpose save to serve man's purposes. And, although man's body is made of clay, he is not simply part of nature: he is made in God's image.

Especially in its Western form, Christianity is the most anthropocentric religion the world has seen. As early as the 2nd century both Tertullian and Saint Irenaeus of Lyons were insisting that when God shaped Adam he was foreshadowing the image of the incarnate Christ, the Second Adam. Man shares, in great measure, God's transcendence of nature. Christianity, in absolute contrast to ancient paganism and Asia's religions (except, perhaps, Zoroastrianism), not only established a dualism of man and nature but also insisted that it is God's will that man exploit nature for his proper ends.

At the level of the common people this worked out in an interesting way. In Antiquity every tree, every spring, every stream, every hill had its own genius loci, its guardian spirit. These spirits were accessible to men, but were very unlike men; centaurs, fauns, and mermaids show their ambivalence. Before one cut a tree, mined a mountain, or dammed a brook,
it was important to placate the spirit in charge of that particular situation, and to keep it placated. By destroying pagan animism, Christianity made it possible to exploit nature in a mood of indifference to the feelings of natural objects.

It is often said that for animism the Church substituted the cult of saints. True; but the cult of saints is functionally quite different from animism. The saint is not in natural objects; he may have special shrines, but his citizenship is in heaven. Moreover, a saint is entirely a man; he can be approached in human terms. In addition to saints, Christianity of course also had angels and demons inherited from Judaism and perhaps, at one remove, from Zorastrianism. But these were all as mobile as the saints themselves. The spirits in natural objects, which formerly had protected nature from man, evaporated. Man's effective monopoly on spirit in this world was confirmed, and the old inhibitions to the exploitation of nature crumbled.

When one speaks in such sweeping terms, a note of caution is in order. Christianity is a complex faith, and its consequences differ in differing contexts. What I have said may well apply to the medieval West, where in fact technology made spectacular advances. But the Greek East, a highly civilized realm of equal Christian devotion, seems to have produced no marked technological innovation after the late 7th century, when Greek fire was invented. The key to the contrast may perhaps be found in a difference in the tonality of piety and thought which students of comparative theology find between the Greek and the Latin Churches. The Greeks believed that sin was intellectual blindness, and that salvation was found in illumination, orthodoxy—that is, clear thinking. The Latins, on the other hand, felt that sin was moral evil, and that salvation was to be found in right conduct. Eastern theology has been intellectualist. Western theology has been voluntarist. The Greek saint contemplates; the Western saint acts. The implications of Christianity for the conquest of nature would emerge more easily in the Western atmosphere.

The Christian dogma of creation, which is found in the first clause of all the Creeds, has another meaning for our comprehension of today's ecologic crisis. By revelation, God had given man the Bible, the Book of Scripture.
But since God had made nature, nature also must reveal the divine mentality. The religious study of nature for the better understanding of God was known as natural theology. In the early Church, and always in the Greek East, nature was conceived primarily as a symbolic system through which God speaks to men: the ant is a sermon to sluggards; rising flames are the symbol of the soul's aspiration. The view of nature was essentially artistic rather than scientific. While Byzantium preserved and copied great numbers of ancient Greek scientific texts, science as we conceive it could scarcely flourish in such an ambience.

However, in the Latin West by the early 13th century natural theology was following a very different bent. It was ceasing to be the decoding of the physical symbols of God's communication with man and was becoming the effort to understand God's mind by discovering how his creation operates. The rainbow was no longer simply a symbol of hope first sent to Noah after the Deluge: Robert Grosseteste, Friar Roger Bacon, and Theodoric of Freiberg produced startlingly sophisticated work on the optics of the rainbow, but they did it as a venture in religious understanding. From the 13th century onward, up to and including Leitnitz and Newton, every major scientist, in effect, explained his motivations in religious terms. Indeed, if Galileo had not been so expert an amateur theologian he would have got into far less trouble: the professionals resented his intrusion. And Newton seems to have regarded himself more as a theologian than as a scientist. It was not until the late 18th century that the hypothesis of God became unnecessary to many scientists.

It is often hard for the historian to judge, when men explain why they are doing what they want to do, whether they are offering real reasons or merely culturally acceptable reasons. The consistency with which scientists during the long formative centuries of Western science said that the task and the reward of the scientist was "to think God's thoughts after him" leads one to believe that this was their real motivation. If so, then modern Western science was cast in a matrix of Christian theology. The dynamism of religious devotion shaped by the Judeo-Christian dogma of creation, gave it impetus.
An Alternative Christian View

We would seem to be headed toward conclusions unpalatable to many Christians. Since both science and technology are blessed words in our contemporary vocabulary, some may be happy at the notions, first, that viewed historically, modern science is an extrapolation of natural theology and, second, that modern technology is at least partly to be explained as an Occidental, voluntarist realization of the Christian dogma of man's transcendence of, and rightful master over, nature. But, as we now recognize, somewhat over a century ago science and technology--hitherto quite separate activities--joined to give mankind powers which, to judge by many of the ecologic effects, are out of control. If so, Christianity bears a huge burden of guilt.

I personally doubt that disastrous ecologic backlash can be avoided simply by applying to our problems more science and more technology. Our science and technology have grown out of Christian attitudes toward man's relation to nature which are almost universally held not only by Christians and neo-Christians but also by those who fondly regard themselves as post-Christians. Despite Copernicus, all the cosmos rotates around our little globe. Despite Darwin, we are not, in our hearts, part of the natural process. We are superior to nature, contemptuous of it, willing to use it for our slightest whim. The newly elected Governor of California, like myself a churchman but less troubled than I, spoke for the Christian tradition when he said (as is alleged), "when you've seen one redwood tree, you've seen them all." To a Christian a tree can be no more than a physical fact. The whole concept of the sacred grove is alien to Christianity and to the ethos of the West. For nearly 2 millennia Christian missionaries have been chopping down sacred groves, which are idolatrous because they assume spirit in nature.

What we do about ecology depends on our ideas of the man-nature relationship. More science and more technology are not going to get us out of the present ecologic crisis until we find a new religion, or rethink our old one. The beatniks, who are the basic revolutionaries of our time, show a sound instinct in their affinity for Zen Buddhism, which conceives of the
man-nature relationship as very nearly the mirror image of the Christian view. Zen, however, is as deeply conditioned by Asian history as Christianity is by the experience of the West, and I am dubious of its viability among us.

Possibly we should ponder the greatest radical in Christian history since Christ: Saint Francis of Assisi. The prime miracle of Saint Francis is the fact that he did not end at the stake, as many of his left-wing followers did. He was so clearly heretical that a General of the Franciscan Order, Saint Bonaventura, a great and perceptive Christian, tried to suppress the early accounts of Franciscanism. The key to an understanding of Francis is his belief in the virtue of humility--not merely for the individual but for man as a species. Francis tried to depose man from his monarchy over creation and set up a democracy of all God's creatures. With him the ant is no longer simply a homily for the lazy, flames a sign of the thrust of the soul toward union with God; now they are Brother Ant and Sister Fire, praising the Creator in their own ways as Brother Man does in his.

Later commentators have said that Francis preached to the birds as a rebuke to men who would not listen. The records do not read so: he urged the little birds to praise God, and in spiritual ecstasy they flapped their wings and chirped rejoicing. Legends of saints, especially the Irish saints, had long told of their dealings with animals but always, I believe, to show their human dominance over creatures. With Francis it is different. The land around Gubbio in the Apennines was ravaged by a fierce wolf. Saint Francis, says the legend, talked to the wolf and persuaded him of the error of his ways. The wolf repented, died in the odor of sanctity, and was buried in consecrated ground.

What Sir Steven Ruciman calls "the Franciscan doctrine of the animal soul" was quickly stamped out. Quite possibly it was in part inspired, consciously or unconsciously, by the belief in reincarnation held by the Cathar heretics who at that time teemed in Italy and southern France, and who presumably had got it originally from India. It is significant that at just the same moment, about 1200, traces of metempsychosis are found also in western Judaism, in the Provencal Cabbala. But Francis held neither to
transmigration of souls nor to pantheism. His view of nature and of man rested on a unique sort of pan-psychism of all things animate and inanimate, designed for the glorification of their transcendent Creator, who, in the ultimate gesture of cosmic humility, assumed flesh, lay helpless in a manger, and hung dying on a scaffold.

I am not suggesting that many contemporary Americans who are concerned about our ecologic crisis will be either able or willing to counsel with wolves or exhort birds. However, the present increasing disruption of the global environment is the product of a dynamic technology and science which were originating in the Western medieval world against which Saint Francis was rebelling in so original a way. Their growth cannot be understood historically apart from distinctive attitudes toward nature which are deeply grounded in Christian dogma. The fact that most people do not think of these attitudes as Christian is irrelevant. No new set of basic values has been accepted in our society to displace those of Christianity. Hence we shall continue to have a worsening ecologic crisis until we reject the Christian axiom that nature has no reason for existence save to serve man.

The greatest spiritual revolutionary in Western history, Saint Francis, proposed what he thought was an alternative Christian view of nature and man's relation to it; he tried to substitute the idea of the equality of all creatures, including man, for the idea of man's limitless rule of creation. He failed. Both our present science and our present technology are so tinctured with orthodox Christian arrogance toward nature that no solution for our ecologic crisis can be expected from them alone. Since the roots of our trouble are so largely religious, the remedy must also be essentially religious, whether we call it that or not. We must rethink and refeel our nature and destiny. The profoundly religious, but heretical, sense of the primitive Franciscans for the spiritual autonomy of all parts of nature may point a direction. I propose Francis as a patron saint for ecologists.
Appendix 2

“The Pioneers” by Frank Masters

Undaunted and brave, stoutly daring risk
In this tribal-tenanted unknown land,
Testing its qualities, peopling its spaces,
Planning development with determinate hand,
Came pioneer squatters, on reconnaissance bent
Bringing powers of brain and muscles to bear
On difficulties of settlement, strange and unusual
Deserving posterity’s plaudits as merited share.

To bewildered natives, ‘twas as the mist of a fog-laden day
Clouding their vista in the darkness of gloom
In fantastic shadows o’er their simple way of life
With ominous portents of impending weird doom,
In this coveted land of both black and white,
Rival faction soon ran strong, rapine and strife
Inevitable, in the conflict of unchanging ages-old law
With progressive and civilized notions of life.

Though handled with ripe judgment and tact
In the new order of things, the original tribe
Failing to assimilate the white man’s way,
Were supplanted, and in decadence brushed aside,
Soon stations were stocked with flocks and herds,
Fences erected over this whole countryside,
Of undeniable beauty, utility and richness,
Sylvan and urban – Dame nature’s pride.

Though the seasons proved various, the wisdom was proved
Of these pastoralists, though lacking local experience,
By ordered control of this fertile region,
Many bales of wool from their sheep gave clearance.
For nigh forty years these sheep roved at will
On pastures deplete, as these results had shown,
Till, just estimate of this Wangaraleednie station
Demanded, where now growing wool, wheat should be sown.

It was death-blow to squatters and natives alike,
Both vanished before the farmers’ intrusion
Or, squatter became farmer, fresh pioneering to face,
Both being ousted from their prior seclusion.
It was over-flow Westward of the mainland expansion
That surged first to the plains of this goodly land,
Then tackled scrub (clearing) with roller and axe,
An exodus obedient to great Biblical command.

‘Be fruitful and multiply and replenish the earth
and subdue it!’, with its accompanied blessing,
noblest of stimulant to brace women and men
to dare and risk, never danger and risk assessing,
inexorably rigid in the truth doth stand,
the law of talent abjectly unused,
‘tis lost by the owner as high trust betrayed,
should by possession fail to be enthused.

Conversely this parable teaches, that diligent employ
Brings increasing possession in larger degree,
Adequately consistent with energised power,
Recompensing faith in this benevolent decree.
This definite law doth not cease to exist,
Whether in tribe, community, person or nation,
But gathers momentum in proportion to unite
Contributing their quota to the equation.

Use is the term to which all things subscribe.
In its nature defined by the infinite Thought,
Man’s highest course imbued with much wisdom.
Justified his action, though with much danger fraught.
In consonance with this indubitable law,
Franklin Harbour blacks and others Australian,
Failing through ages their country to develop,
Pay forfeit in place to a white race alien.

Out-pointed and out-muted by the incoming race,
Who used their talents while the natives had failed
Launched the unused penalty, swift and cogent
Of the buried napkin, now by the natives bewailed.
With many arrivals soon this land became studded,
With settlers homes – varied inhabitants of every breed,
Some teachers and tradesmen of experience nil
People of British and many other breed.

Yet amongst such admixture of those early pioneers,
Camaraderie and neighbourliness made its appearance,
With good fellowship too, and willingness to help,
Good principles all and given general adherence.

Men working on stations and knowing the place,
Invested all savings taking the land for a home.
Where family joys would concurrently flow,
Eschewing their swag and seeking work on the roam.

Around the Gulf with all goods and chattels,
Two new brides with their husbands did travel,
In stages slow, making camp every night,
To the howling of dingoes, seeking prey without cavil.
Nor thought themselves heroines though undoubtedly were,
Courageous and loyal, full of vim and zest.
Determinedly supporting husbands adored,
In wrestling home from nature out West.

Many found the task hard, labour oft ill-paid,
But so determinedly dogged the vein of such men.
Though some were beaten in the effort unequal,
They’d move further out and seek conquest again.
With sickness, diseases or accident was the battle waged,
Without hope or aid of a Doctor’s skill,
The women in childbirth anguished alone,
Save for some friendly neighbour’s goodwill.

How hardly were pressed these settlers for water,
Carted mostly from springs far and nearby,
For though tanks and dams were built and sunk,
All were dependent on rain from the sky,
Terror and fear came from fire ferocious
Released from near Cleve by the resentful black,
With strong hot wind speeding its sweep,
Over timber and clearing, naught staying its track.

Onward it swept with such terrific action
That brave men were forced to flee for their life. Among them McCarthy who had gone to defeat, The fiend that deprived him of children and wife. It swept over Carpa faster than race horse speed, Over his home, where five daughters, wife and son Sought protection and shelter from demonic threat, The Father to find the demon had won.

Seven lifeless bodies the fire beaters discovered, Horrible fate at the fire demon’s hands, Dread penalty paid by this courageous pioneer, Settling and proving these far Western lands, Nearly tragic was a brave woman’s fate, Speared on the threshold of home by a black, Who decamped at the sight of an empty gun, Leaving the woman free the spear to extract.

Communications were slow, the mails intermittent, Brought with occasional boats with supplies Schools non-existent, church held in homes, All concomitants disheartening in their emprise. With wonderful courage their battles they fought, With unwavering faith their troubles they bore, Laying foundations for those later on, To live peaceful lives on this further-most shore.

Naught would dismay their indomitable wills, They wrought bigger than ever they knew, These same humble folk, for as the years rolled on, From their labours in good time there grew, Towns and ports, roads and communications, Amenities enjoyed by the present generation, Fitting monuments for self-sacrificing labours, Filling our hearts with highest admiration.

All now is changed and the district proved Contributing her quota to the nation’s good, Descendants reaping where their parents had sown Virile seed, now harvested where they had bravely stood. Happy those to whom long life was given To view in perspective the fruit of the years, Gracious lot of few heroic souls at the most, Scant survivors of the pioneers.

May posterity never forget the homage which is theirs The deeds they performed of ineffaceable merit, Their highest traditions, greatness of life, The great persistence of their unquenchable spirit. The glorious heritage these pioneers have bequeathed Should challenge and quicken our vigorous emulation. To build on the foundations so worthily laid, Right superstructure that exalteth the nation.
Appendix 3

The Earth Bible’s 6 Aims
and 6 Ecojustice Principles

The aims are to:

· “acknowledge before reading the biblical text, that as Western interpreters we are heirs to a long anthropocentric, patriarchal and androcentric approach to reading the text that has devalued Earth and that continues to influence the way we read the text;
· declare before reading the text, that we are members of a human community that has exploited, oppressed and endangered the existence of the Earth community;
· become progressively more conscious that we are also members of the endangered Earth community in dialogue with ancient texts;
· recognize Earth as a subject in the text with which we seek to relate empathetically rather than as a topic to be analysed rationally;
· take up the cause of justice for earth to ascertain whether Earth and the Earth community are oppressed, silenced or liberated in the biblical text;
· develop techniques of reading the text to discern and retrieve alternative traditions where the voice of the earth community has been suppressed.”

The six ecojustice principles are:

1. The Principle of Intrinsic Worth. The universe/Earth and all its components have intrinsic worth/value.
2. The Principle of Interconnectedness. Earth is a community of interconnected living things that are mutually dependent on each other for life and survival.
3. The Principle of Voice. Earth is a subject capable of raising its voice in celebration and against injustice.
4. The Principle of Purpose. The universe, Earth and all its components, are a part of a dynamic cosmic design within which each piece has a place in the overall goal of that design.
5. The Principle of Mutual Custodianship. Earth is a balanced and diverse domain where responsible custodians can function as partners, rather than rulers, to sustain a balanced and diverse Earth community.

6. The Principle of Resistance. Earth and its components not only differ from injustices at the hands of humans, but actively resist them in the struggle for justice.”
This Information Sheet invites you to be part of a research project entitled “Release the river! An ecotheological reading of how the waterways and the human inhabitants of the Murray-Darling Basin affect each other”, and explains that invitation. The project is being conducted by Rev David Reichardt, an Uniting Church minister and a PhD student in Charles Sturt University’s Faculty of Arts and School of Theology. Charles Sturt University is a multi-campus tertiary institution which draws students mainly from rural New South Wales. Its School of Theology comprises three denominational Theological Colleges: St Mark’s Anglican College, Canberra; Morpeth Anglican College near Newcastle; and United Theological College, which is the Uniting Church’s training facility in New South Wales, and is located at North Parramatta.

In recent years Australians have become very aware of how we are affecting our natural environment. In particular a national debate rages over how we can best reconcile seemingly conflicting interests in the Murray-Darling Basin. Among many disciplines and professions that have brought their skills to bear on this situation the still-quite-new discipline of ecotheology means approaching ecology from a theological perspective. Theology can contribute to ecology by asking and seeking to answer fundamental questions regarding: the identity of humans in relation to their natural environments; why humans relate in the ways we do to our natural environments; and the ways in which natural environments affect human individuals, culture and society, and vice versa. I shall explore these questions in relation to the Murray-Darling Basin, using what the Bible and Christian theology have to say on rivers, and other great river systems, as points of reference.

Sociological research techniques such as interviews and questionnaires are not commonly used in theology. However, since this thesis explores the relationship between people and the environment in which they live, it would seem foolish not to ask for information and stories from the people themselves. Because the research is theological in character I have decided to approach people from my own denomination in various congregations around the Murray-Darling Basin.

Although I am inviting you to participate in this project, and will be most grateful if you do so, you are of course free to decline this invitation, or to withdraw at any time even if you have accepted the invitation. If you decide to participate in this project I shall meet you in your home town for a face-to-face interview of about one hour’s duration &/or ask you to fill in a questionnaire, seeking to find out from you:

1. What your attitudes to the environment are
2. How you live out those attitudes in your everyday life
3. how you relate 1. and 2. to your Christian faith.

I shall tape audiotape interviews to help my own analysis.
The attitudes, beliefs and actions of children and youth are of great importance to this study. Recently I attended an excellent “River Health” Conference in Mildura which featured ‘Kids teaching Kids’, in which students from schools around the Murray-Darling Basin and beyond presented to each other their local projects to improve their local environment. If you are under the age of 14, or have a disability that may prevent you from fully understanding of what I am asking you to consent to, the university requires that one of your parents, guardians or caregivers gives consent on your behalf to your participating in this project.

Please do not think that I approach this important and complex topic with pre-conceived ideas about what is right or wrong. I simply want to know what you think and do. It will be very important for me that you respond openly and honestly. However, if the interview &/or questionnaire does upset you, please discuss the matter with your minister or chairperson of Elders Committee with whom I have already discussed possible pastoral consequences and what to do about them. They will take appropriate pastoral care of you and help you to take appropriate action.

The information that you give me will help me to understand better how practising Christians

- affect the various parts of the Murray-Darling Basin in which they live
- are affected by it
- relate their faith to this important aspect of their lives

The recent federal privacy legislation has impressed on us all how important confidentiality is. Certainly keeping confidence is vital in my own pastoral work. However, the material I am researching is not necessarily of a sensitive nature. Indeed, Paul Sinclair’s recently published doctoral thesis, a slightly altered monograph entitled ‘The Murray: A River and its People’, is based largely upon interviews and material from people, much of which is reproduced and attributed. Sinclair found that many people did want to tell their stories, and were willing to be identified. If you wish your contribution to be acknowledged and for you to be identified, I am more than happy to comply. If, on the other hand, you do not wish to be identified I shall take steps to prevent your contribution from being associated with you. It is the University’s practice to store raw data for 5 years. Information stored on paper, audiotape, electronically and any photographs will be kept under lock and key during this time.

NOTE: Charles Sturt University’s Ethics in Human Research Committee has approved this project. If you have any complaints or reservations about the ethical conduct of this project, you may contact the Committee through the Executive Officer:

The Executive Officer
Ethics in Human Research Committee
The Grange
Charles Sturt University
Bathurst NSW 2795

Tel: (02) 6338 4628
Fax: (02) 6338 4194

Any issues you raise will be treated in confidence and investigated fully and you will be informed of the outcome.

Other Contact details:
Principal investigator & PhD
Rev David Reichardt
Student
16 Vera St Eastwood NSW 2122
t – h & o 02 8819 6549
f 02 9858 5495
<table>
<thead>
<tr>
<th>Principal supervisor</th>
<th>Rev Dr Dean Drayton</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>United Theological College</td>
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<td></td>
<td>16 Masons Dr. North Parramatta NSW 2151</td>
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<td></td>
<td>t – o 02 9683 3655</td>
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<table>
<thead>
<tr>
<th>Co-Supervisor</th>
<th>Rev Dr Clive Pearson</th>
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<td></td>
<td>t – o 02 9683 3655</td>
</tr>
</tbody>
</table>

Having given you this information I now invite you to participate in this important study. While I cannot promise any substantial rewards for doing so you will have my gratitude and the satisfaction of contributing to a project that I think is very important. If you have any questions or suggestions please contact me using one of the above methods. Please inform me within 2 weeks of your decision.

Yours sincerely,

David Reichardt
Appendix 5

Ethics in Human Research
PhD Research Participant Consent Form

Contact details:
Principal investigator
Rev David Reichardt
16 Vera St Eastwood NSW 2122
t – h & o 02 8819 6549
f 02 9858 5495
m 0415 740 317
e dreich02@postoffice.csu.edu.au

Principal supervisor
Rev Dr Dean Drayton
United Theological College
16 Masons Dr. North Parramatta NSW 2151
t – o 02 9683 3655

Co-Supervisor
Rev Dr Clive Pearson
United Theological College
16 Masons Dr. North Parramatta NSW 2151
t – o 02 9683 3655

I, ________________________________________(Name),

Hereby consent to being interviewed &/or to answer the questionnaire designed by
the Rev. David Reichardt in connection with his PhD research project entitled
“Release the river! An ecotheological reading of how the waterways and the
human inhabitants of the Murray-Darling Basin affect each other”.

The purpose of the research has been explained to me, including the (potential)
risks/discomforts associated with the research.

I have been given the opportunity to ask questions about the research and received
satisfactory answers.

I understand that I am free to withdraw my participation in the research at any
time, and that if I do I will not be subjected to any penalty or discriminatory
treatment.

I understand that any information or personal details gathered in the course of this
research about me are confidential and that neither my name nor any other
identifying information will be used or published without my written permission.

Charles Sturt University’s Ethics in Human Research Committee has approved this
study. I understand that if I have any complaints or concerns about this research I
can contact:

Executive Officer
Ethics in Human Research Committee
The Grange
Charles Sturt University
Bathurst NSW 2795
Phone: (02) 6338 4628
Fax: (02) 6338 4194
Participant’s signature
signature (it required)

Date
name (CAPITALS)

Parent’s/Guardian’s/Caregiver’s
name (CAPITALS)
Appendix 6

Focus Group Framework
For Use in Focus Groups from Uniting Church Congregations
in the Murray-Darling Basin, July, August & September, 2005
Developed together with Rev Dr Clive Pearson

Housekeeping
As participants arrive I hand them the pack containing
- the 2 page “PhD Research Project Information Sheet”
- the “PhD Research Participant Consent Form”
- and the response sheets entitled “Your Environment and Your
  Christian Faith”
I ask them to read the Information Sheet.

When everyone has arrived I introduce myself, and explain my PhD thesis,
its genesis and the place and function of this focus group.
I explain my intention and proposed process for this focus group, viz.
- to hold a discussion over the next 1½-2 hours
- I request participants to fill in the response sheets by themselves and in
  their own time, and to return them to me in the stamped, self-addressed
  envelope provided.
- I ask participants to sign the PhD Research Participant Consent Forms,
  and to return them to me before we go further.
- I request permission of the group to record the ensuing discussion.

Discussion
Note: The following is a ‘guide only’. It is anticipated that discussion will
vary widely within this framework. It is important to be sensitive to the flow
of discussion, particularly if participants feel strongly about some issues.

Introduction
I raise the subjects of the so-called global environmental crisis, and
ecological problems in the Murray-Darling Basin, then ask:
- What are your perspectives on these issues?
- Are there ecological issues facing your town/district?
- If ‘yes’, has this taken you by surprise?
- Do you have concerns for the future in respect of the environment?

The Churches’ Response
Suggest that some Christians are environmentally concerned and engaged,
and tend to express their responses outside of their church involvement. Ask
for response to this statement.
Ask if participants feel that the Church (both internationally, nationally
locally) has been slow in responding to the environmental crisis.
Ask how participants feel that their Church (the UCA and their local
congregation) has been responding to ecological issues in terms of:
- practical responses to practical issues
- in worship
- in preaching
- in bible and other studies
- in other ways.
Ask if participants feel that their churches have been committed, explicit and thorough-going in these responses or ‘once-off’.
Ask the group if the term ‘eco-congregation’ means anything to them.
Ask if there are records of ecologically-related discussion and action in the Church Council’s Minutes Book.

**Biblical & Theological Issues**

**Bridging from Practice to theology**
Explain the terms ‘ecology’ and ‘ecotheology’.
Suggest that both ecology and ecotheology are both global and local in their reach and application.
Ask if participants feel that it is possible to do theology based upon people’s experiences of
- the Murray-Darling Basin
- its waterways
- their local ecological situation
- their Congregation’s local situation.

**Biblical Issues**
Ask how participants feel that the Bible resources
- ecotheology
- an ecotheology of the Murray-Darling Basin

**Theological Issues**
Ask how participants feel:
- that anthropocentrism relates to ecology
- that Christ relates to nature
  o what is meant by ‘the Cosmic Christ’
- what it means to be human
  o in relation to God
  o in relation to nature
- about the possibility that ecotheology might lead to
  o a fresh understanding of the Gospel
  o a new conversion (an ecological conversion – Pope John Paul II)
- about the possibility that some human activity might be called ‘uncreation’.

**Conclusion**
Thank participants for their cooperation.
Ask them to fill in the responses and send them to me in the stamped, self-addressed envelopes.
If it feels appropriate finish with someone praying, or with the Grace.
Appendix 7

Inventory

Your Environment and Your Christian Faith

Thankyou for participating in this study of how Uniting Church people living in the Murray-Darling Basin relate their Christian faith to their environment. This study is confidential – your responses will be de-identified by using number codes for both individual response sheets and the Uniting Church congregations from which they come. Some basic background information about you will help David Reichardt to analyse more closely patterns of relating faith with environment. Your assistance in filling out the Background Information sheet will therefore be greatly appreciated.

The study itself tests your attitudes by asking you to respond to each of a series of statements on a 1 – 5 basis as follows:


Please read each item carefully but fairly quickly. Do not spend too much time responding to each statement. Then circle the number that best approximates your response beside each statement.

Check to see that you have a response to each statement. (Choose only one response per statement.)

After you have finished responding to all the items, return your response sheet to David Reichardt.

Once again, thank you very much for your help.

Yours sincerely,

David Reichardt
Background information

Please circle the letter which best matches your situation for each of the determinants below.

1. Gender
   M = Male
   F = Female

2. Age
   a. Less than 20
   b. 21-30
   c. 31-49
   d. 50-64
   e. 65 and over

3. Education completed
   a. Graduate (University/College/TAFE/Institute)
   b. Some University/College/TAFE/Institute
   c. Finished Secondary School
   d. Some Secondary School
   e. Primary School

4. Where do you live?
   a. Rural area
   b. Village or small town
   c. Large town
   d. City

5. Employment (paid)
   a. Full-time
   b. Part-time
   c. Full-time and Part-time
   d. Unemployed.
   e. Retired

6. Occupation
   a. Clerical, Sales, Technician
   b. Executive, Doctor, Lawyer
   c. Unskilled
   d. Homemaker
   e. Manager, Teacher, Nurse
   f. Self-employed
   g. Skilled and building trades, Farmer
   h. Student
   i. Unemployed
   j. Other

7. Individual Yearly Income (in $A)
   a. 0-9,999
   b. 10,000-19,999
   c. 20,000-29,999
   d. 30,000-39,999
   e. 40,000-49,999
   f. 50,000-74,999
   g. 75,000-99,999
   h. 100,000 or more

8. Where born
   a. Australia
   b. Overseas
Statements to Respond to

Please circle the number beside each statement which most accurately reflects or attitude to that statement according to the following:

|----------------------|-------------|-------------|---------|------------------|

1. The Uniting Church is at the forefront of addressing environmental concerns. 1 2 3 4 5
2. The preaching at services of worship in my church congregation has frequently expressed interest in and concern for the environment. 1 2 3 4 5
3. The environmental health of the world’s waterways has declined markedly over my lifetime. 1 2 3 4 5
4. The Murray-Darling Basin’s environmental health has declined during my lifetime. 1 2 3 4 5
5. The environmental health of the world’s waterways concerns me. 1 2 3 4 5
6. The environmental health of the waterways in my locality has declined markedly over my lifetime. 1 2 3 4 5
7. Australia’s environmental health concerns me. 1 2 3 4 5
8. I am generally satisfied with the Murray-Darling Basin’s environmental health. 1 2 3 4 5
9. The environmental health of the Murray-Darling Basin’s waterways has declined markedly over my lifetime. 1 2 3 4 5
10. The environmental health of Australia’s waterways concerns me. 1 2 3 4 5
11. The health of the Murray-Darling Basin’s environment concerns me. 1 2 3 4 5
12. Practical Christian living has little to do with helping the non-human environment. 1 2 3 4 5
13. Few if any Christians are prominent in addressing environmental concerns. 1 2 3 4 5
14. The health of the environment in my locality concerns me.  

15. Australia’s waterways enjoy generally good environmental health.  

16. My church congregation, together and through individual members, has frequently expressed interest in and concern for the environment in worship.  

17. Australia’s environmental health has declined during my lifetime.  

18. An emphasis on environmental concerns draws Christians away from the central matters of the Christian message.  

19. My Church congregation has an explicit, thorough-going commitment to the environment.  

20. The environmental health of Australia’s waterways has declined markedly over my lifetime.  

21. The world’s waterways enjoy generally good environmental health.  

22. I am familiar with the term “eco-congregation”.  

23. It is difficult for me to raise and discuss environmental concerns in my church congregation.  

24. The world’s environmental health has declined during my lifetime.  

25. I am generally satisfied with the environmental health of my locality.  

26. The environmental health of the world concerns me.  

27. The waterways in my locality enjoy generally good environmental health.  

28. I am generally satisfied with the world’s environmental health.
29. The environmental health of waterways in my locality concerns me. 1 2 3 4 5
30. The Christian Church is not interested or involved in addressing environmental concerns. 1 2 3 4 5
31. I feel that people in my Church congregation accept me and listen to me when I express concerns about the environment. 1 2 3 4 5
32. The environmental health of the Murray-Darling Basin’s waterways concerns me. 1 2 3 4 5
33. Environmental concerns are of little relevance to the Christian faith. 1 2 3 4 5
34. Practical Christian living strongly involves caring for the environment. 1 2 3 4 5
35. The waterways of the Murray-Darling Basin enjoy generally good environmental health. 1 2 3 4 5
36. An emphasis on the environment is central to the Christian message. 1 2 3 4 5
37. The environmental health of waterways in my locality concerns me. 1 2 3 4 5
38. Christian theology has little to contribute to matters concerning the environment. 1 2 3 4 5
39. The Uniting Church is not very concerned about addressing environmental concerns. 1 2 3 4 5
40. I am concerned and fearful about the future of the environment. 1 2 3 4 5


41. The Christian Church is prominent in addressing environmental concerns. 1 2 3 4 5
42. My church congregation, together and through individual members, has frequently expressed interest in and concern for the environment in Bible and theological study groups. 1 2 3 4 5
43. The environment is an important subject for Christian theologians to address. 1 2 3 4 5
44. Environmental matters figure prominently in the Bible. 1 2 3 4 5
45. I am generally satisfied with Australia’s environmental health. 1 2 3 4 5
46. I feel that people within my Church congregation are disinterested or even hostile to expressions of concerns about the environment. 1 2 3 4 5
47. I feel confident about the future of the environment. 1 2 3 4 5
48. I feel comfortable about raising and discussing matters pertaining to the environment with my church congregation. 1 2 3 4 5
49. The environmental health of the locality in which I live has declined during my lifetime. 1 2 3 4 5
50. The environmental health of the locality in which I live has declined during my lifetime. 1 2 3 4 5
51. Individual Christians are at the forefront of addressing environmental concerns. 1 2 3 4 5
52. Expression of their environmental commitment by members of my Church congregation is on an individual basis more than part of the Congregation does together. 1 2 3 4 5
53. The Christian faith is deeply concerned with environmental matters. 1 2 3 4 5
54. Environmental activities engaged in by my Church congregation tend to be “once-off” rather than part of an on-going. 1 2 3 4 5
55. The Bible has little to say about environmental matters. 1 2 3 4 5
56. My church congregation, together and through individual members, has frequently expressed interest in and concern for the environment in practical ways. 1 2 3 4 5

Thank you for responding to these statements. Please send this response sheet to David Reichardt in the addressed, stamped envelope.

Yours sincerely,

David Reichardt

Supplementary Statements

These statements are more “in-depth” than the others, and may require some writing to do your response justice. Remember, you are under no obligation
to make any response, all responses will be treated as confidential unless the respondent gives me permission to acknowledge them, and I am very grateful for your participation. If you need more paper on which to write more will be provided.

1. Do you think that the natural environment in the particular locality of the locality you live in now has had an effect on your character? That is, would you have been a different person had you not lived here?

2. If your answer to 1. is “yes”, in what ways has this environment affected you?

3. If your answer to 1. is “no”, please write a little about how you feel towards the natural environment in which you live.

4. Describe what the waterways of your locality mean to you.

5. How have you affected the natural environment, including its waterways, in which you live?

6. From where do you think your attitudes to the natural environment in which you live come?
7. How do you live out those attitudes in your everyday life?

8. What, to you, does the Christian faith have to say to the concerns in our society about environmental degradation?
Appendix 8

Statement Summary of Inventory Results

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<tr>
<th>Statements</th>
<th>Averages</th>
<th>Standard Deviation</th>
</tr>
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<tr>
<td>The Uniting Church is at the forefront of addressing environmental concerns.</td>
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<tr>
<td>The political environment of Australia has declined markedly over my lifetime.</td>
<td>3.66</td>
<td>1.09</td>
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<tr>
<td>The environmental health of the world's waterways has declined markedly over my lifetime.</td>
<td>3.81</td>
<td>1.07</td>
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<tr>
<td>The environmental health of the world's waterways concerns me.</td>
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<td>The environmental health of Australia's waterways concerns me.</td>
<td>4.17</td>
<td>0.64</td>
</tr>
<tr>
<td>The Murray-Darling Basin's environmental health concerns me.</td>
<td>2.98</td>
<td>1.07</td>
</tr>
<tr>
<td>Practical Christian living has little to do with the non-human environment.</td>
<td>2.48</td>
<td>1.21</td>
</tr>
<tr>
<td>The environment of my locality concerns me.</td>
<td>4.00</td>
<td>0.98</td>
</tr>
<tr>
<td>Australia's waterways enjoy generally good environmental health.</td>
<td>2.36</td>
<td>1.13</td>
</tr>
<tr>
<td>My church congregation, together and through individual members, has frequently expressed interest in and concern for the environment.</td>
<td>2.81</td>
<td>1.04</td>
</tr>
<tr>
<td>The environmental health of Australia's waterways has declined markedly over my lifetime.</td>
<td>3.81</td>
<td>1.07</td>
</tr>
<tr>
<td>An emphasis on the environment concerns draws Christians away from the central matters of the Christian message.</td>
<td>2.26</td>
<td>1.11</td>
</tr>
<tr>
<td>My Church congregation has an explicit, thorough-going commitment to the environment.</td>
<td>2.40</td>
<td>1.00</td>
</tr>
<tr>
<td>The environmental health of Australia's waterways has declined markedly over my lifetime.</td>
<td>3.81</td>
<td>1.07</td>
</tr>
<tr>
<td>The world's waterways enjoy generally good environmental health</td>
<td>2.15</td>
<td>0.82</td>
</tr>
<tr>
<td>I feel comfortable about raising and discussing matters pertaining to the environment with my church congregation.</td>
<td>3.45</td>
<td>0.81</td>
</tr>
<tr>
<td>The environmental health of the Murray-Darling Basin's waterways concerns me.</td>
<td>4.13</td>
<td>0.79</td>
</tr>
<tr>
<td>Environmental concerns are of little relevance to the Christian faith.</td>
<td>1.79</td>
<td>0.82</td>
</tr>
<tr>
<td>Practical Christian living strongly involves caring for the environment.</td>
<td>4.19</td>
<td>0.88</td>
</tr>
<tr>
<td>The waterways of the Murray-Darling Basin enjoy generally good environmental health.</td>
<td>2.28</td>
<td>0.97</td>
</tr>
<tr>
<td>An emphasis on the environment is central to the Christian message.</td>
<td>3.38</td>
<td>1.11</td>
</tr>
<tr>
<td>The environmental health of waterways in my locality concerns me.</td>
<td>4.00</td>
<td>0.66</td>
</tr>
<tr>
<td>Christian theology has little to contribute to matters concerning the environment.</td>
<td>2.17</td>
<td>0.89</td>
</tr>
<tr>
<td>The Uniting Church is not very concerned about addressing environmental concerns.</td>
<td>2.94</td>
<td>0.82</td>
</tr>
<tr>
<td>I am concerned and fearful about the future of the environment.</td>
<td>3.55</td>
<td>1.15</td>
</tr>
<tr>
<td>The Christian Church is prominent in addressing environmental concerns.</td>
<td>2.42</td>
<td>0.89</td>
</tr>
<tr>
<td>My church congregation, together and through individual members, has frequently expressed interest in and concern for the environment.</td>
<td>2.79</td>
<td>1.03</td>
</tr>
<tr>
<td>The environment is an important subject for Christian theologians to address.</td>
<td>3.85</td>
<td>0.89</td>
</tr>
<tr>
<td>Environmental matters figure prominently in the Bible.</td>
<td>3.35</td>
<td>0.96</td>
</tr>
<tr>
<td>I am generally satisfied with Australia's environmental health.</td>
<td>2.35</td>
<td>1.03</td>
</tr>
<tr>
<td>I feel that people within my Church congregation are disinterested or even hostile to expressions of concerns about the environment.</td>
<td>2.11</td>
<td>0.85</td>
</tr>
<tr>
<td>I feel confident about the future of the environment.</td>
<td>2.66</td>
<td>1.18</td>
</tr>
<tr>
<td>I feel comfortable about raising and discussing matters pertaining to the environment with my church congregation.</td>
<td>3.66</td>
<td>0.90</td>
</tr>
<tr>
<td>The environmental health of the locality in which I live has declined during my lifetime.</td>
<td>3.58</td>
<td>1.11</td>
</tr>
<tr>
<td>The environmental health of the locality in which I live has declined during my lifetime.</td>
<td>3.54</td>
<td>1.09</td>
</tr>
<tr>
<td>Individual Christians are at the forefront of addressing environmental concerns.</td>
<td>3.30</td>
<td>1.01</td>
</tr>
<tr>
<td>Expression of their environmental commitment by members of my Church congregation is on an individual basis more than part of the Congregation does together.</td>
<td>4.15</td>
<td>0.66</td>
</tr>
<tr>
<td>The Christian faith is deeply concerned with environmental matters.</td>
<td>3.46</td>
<td>0.92</td>
</tr>
<tr>
<td>Environmental activities engaged in by my Church congregation tend to be fjeonce-offO rather than part of an on-going.</td>
<td>3.59</td>
<td>0.90</td>
</tr>
<tr>
<td>The Bible has little to say about environmental matters.</td>
<td>2.34</td>
<td>0.94</td>
</tr>
<tr>
<td>My church congregation, together and through individual members, has frequently expressed interest in and concern for the environment in practical ways.</td>
<td>2.66</td>
<td>1.12</td>
</tr>
</tbody>
</table>


"‘Striking the Rock’ Alfred Deakin as Moses, the Deliverer." Melbourne Melbourne Punch, 1886.


"History of the Church at Coleambally in Order of Service at the Dedication of Extensions & Renovations to Coleambally Church." Coleambally, 1980.


Two Men in a Tinnie. Australian Broadcasting Corporation, 2006. DVD.


Beresford, Quentin et al. The Salinity Crisis: Landscapes, Communities and Politics. Crawley, WA: University of Western Australia Press, 2001.


Cant, Garth, ed. *The Quality of Life of Rural Clergy in New Zealand*. Christchurch: Rural Ministry Unit, 1981.


Charlesworth, Max et al., ed. *Religion in Aboriginal Australia: An Anthology*. St
———. "History of the Australian Rural Landscape." In Man and Landscape in Australia: Towards an Ecological Vision, edited by George Seddon & Mari


Freud, Sigmund. *Totem and Taboo: Resemblances between the Psychic Lives of Savages and Neurotics*. Translated by A.A. Brill, 1912.


———. *What Are They Saying About Environmental Theology?* New York:
Kähler, Martin. Der Sogenannte Historische Jesus Und Der Geschichtliche,
Biblische Christus. 2nd ed, 1896.


Leybourne, Marnie et al., ed. Water: Histories, Cultures, Ecologies, Contemporary
Macleod, M. "Soul and Soil." 1948
———. Super, Natural Christians: How We Should Love Nature. 1 ed.


Pearse, Guy. *High and Dry: John Howard, Climate Change and the Selling of
———. February 1999.
Plato. Phaedo.
Robinson, Ian D T. "If Anyone Thirsts - a Christian Spirituality of Australia's


Sheldon, Joseph K. "Twenty-One Years after the Historical Roots of Our Ecologic Crisis: How Has the Church Responded?" *Perspectives on Science and Christian Faith* 41, no. 3 (1989).


