

CRITICAL COMMENTARY

Judeo-Christian theology and the environment: moving beyond scepticism to new sources for environmental education in the United States

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In the USA, many environmental educators have paid little attention to Western Christian and Jewish ecotheology, in spite of its being a potentially rich resource for environmental education. In part, this neglect can be attributed to popular misconceptions about the influence of religious beliefs on environmental values. This essay reviews the results of relevant empirical studies within the environmental sociology literature since 1977 to clarify common misconceptions. Conclusions from these empirical studies and other sources may make it easier for environmentalists to reconsider the resources of ecotheology. Reconsidering ecotheology is also practical in that it provides environmental education a means of better connecting with the primary values of many citizens, offers new partnership possibilities for building environmental education infrastructure, and broadens the pluralistic base for environmental ethics. Several basic tenets of ecotheology offer starting points for educators by providing common ground between theology and environmental education.

Introduction

For decades, environmental advocates and educators have made use of normative Buddhist, Native American, and Taoist teachings to inform American sensibilities regarding the relation of humans to the world of nature. However, the potential of Christian and Jewish teachings to become a significant ally for environmental education and advocacy in the USA continues to be under-appreciated, especially given the cultural and political influence of these traditions. In recent years, secular environmentalists have become increasingly open to building alliances with Christian and Jewish religious organizations to further a variety of practical environmental causes (Pope, 1997, 1998; Gardner, 2002; Palmer, 2003), and some environmental

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thinkers have examined promising developments in ecotheology¹ (Nash, 1989, pp. 87–120; Oelschlaeger, 1994; Tucker & Grim, 1997–2004; Haluza-Delay, 2000; Kellert & Farnham, 2002). However, despite longstanding and growing contributions to environmental ethics by Christian and Jewish theologians, ecotheology remains poorly understood within the environmental education community (Jacobus, 2004), and the role of theology and religious beliefs is commonly ignored in larger discussions of environmental values and environmental education (e.g. Ramsey & Hungerford, 2002; Schultz & Zelezny, 2003; Free-choice learning and the environment, 2005).

Obviously, a major factor in the exclusion of Christian and Jewish ethics and theology from environmental education is the secularization of public education in the USA over the past 125 years (an issue that will not be discussed in this paper). Two specific factors that have justified resistance to biblical ecotheology seem no longer salient, and environmental educators can better assess the potential of ecotheology for environmental education by examining these factors. The first is the argument—initially given widespread publicity by Lynn White’s (1967) classic article in *Science*, ‘The Historical Roots of Our Ecologic Crisis’—that Judeo-Christian² doctrines have been responsible for the West’s culture of environmental exploitation. The second is the claim made by social scientists, based on studies conducted in the 1970s and 1980s that church affiliation and/or biblical belief correlated with low levels of environmental concern and behaviour of a sort consistent with White’s historical claims. These factors have contributed to what environmental historian Max Oelschlaeger bemoaned more than a decade ago as the tendency of ‘environmentalists, despite the evidence to the contrary, to continue to think of religion as the enemy’ (1994, p. 22). Most environmental educators are probably familiar with the general scepticism surrounding Judeo-Christian environmental influence, even if they are not familiar with White and his empirical supporters. However, many are not aware of the results of later studies that shed serious doubt on the validity of White’s thesis and contradict the claim that biblical beliefs have a negative impact on environmental citizenship behaviour.

Lynn White

Examining the roots of the modern ecological crisis, Lynn White argued that Christianity’s anthropocentric Western form, contrary to Eastern Orthodox Christianity and other Eastern religious traditions sanctioned and gave rise to a destructive marriage of science and technology. This Western trend was a ‘realization of the Christian dogma of man’s transcendence of and rightful mastery over nature’ derived in part from the Hebrew Scriptures. As such, White claimed Christianity bore a ‘huge burden of guilt’ for our ecological woes, and that ‘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’ (White, 1967). Many environmental educators and advocates, echoing White’s academic critique, continue to suspect that Judeo-Christian principles are problematic for environmental ethics. For example, environmental journalist Bill Moyers recently recapitulated this theme to popular acclaim by alleging

that the anti-environmental predilections of the current Bush administration are rooted in a literal and exploitative interpretation of the references in the book of Genesis to 'dominion' (Griscom, 2003), and that widespread complacency regarding environmental protection is fostered by evangelical and fundamentalist Christian beliefs about the end times (Moyers, 2005; cf. Scherer, 2004).³

Nevertheless, claims such as Moyers' and White's share a common overestimation and misinterpretation of the influence of religious beliefs and biblical doctrine. To be sure, as White was expertly aware, the desacralization of nature that took place in Judaism and Christianity—seeing nature as God's creation rather than divine in itself—contributed to the development of science and technology in the West, ennobling and thus encouraging the scientific quest to understand the workings of God's creation (White, 1968). However, despite the great benefits of science and technology, the desacralization of nature entailed its own dangers. Within the context of biblical religion and morality, humans always lived under the authority of God, indeed a God who viewed his creation as 'very good' (Gen 1:31). With the advent of Enlightenment rationality, a utilitarian attitude of domination found little to constrain its profitability within the sphere of modern economic developments (Barr, 1972; Hayes & Marangudakis, 2001; McGrath, 2002). Unprecedented resource utilization, population growth, life expectancy, and standard of living increases would follow, yielding an increasingly complex global situation. In contrast to White, who focused on the role of religious doctrine in shaping attitudes toward nature, scholars such as Lewis Moncrief (1970; cf. Foley, 1977; Whitney, 1993; Marangudakis, 2001) detail other cultural factors whose influence on modern environmental attitudes, they argue, overshadows the role of Judeo-Christian dogma. These include democratization, materialism, secularization, individualism, and the proliferation of individual wealth. Their accounts concur with Glacken's (1967) that the emergence of the environmentally precarious modern situation was guided by many causes, and religion was not a dominant one (cf. Derr, 1975; Nash, 1991).

Furthermore, cultural geographer Yi-Fu Tuan (1968, 1970) argues that particular blame should not be placed on western religion. He points out that environmental destruction has been just as evident in Eastern and non-Judeo-Christian lands (e.g. China) as in the West (cf. Hughes, 1994). Other critics have also pointed out the theological inadequacies of setting up biblical dominion as the environmental 'fall guy.' For instance, essayist Wendell Berry (1990) sums up much of the theological response to White when he points out that such an 'extremely unintelligent' reading of Genesis 'is contradicted by virtually all the rest of the Bible.' The notable rise of Jewish and Christian environmental literatures, organizations, and doctrines over the past 35 years also weighs against the suggestion that Biblical beliefs are antithetical to environmental progress, though these examples are not widely known among environmentalists.⁴

Empirical sociological evidence

Critiques of White's historical interpretation, however, have not eliminated the persistent suspicion of many environmentalists that biblical beliefs stand as a barrier

between many Americans and caring for the environment. This may be in part because environmental sociologists of the 1980s claimed to confirm that Judeo-Christian adherents care less about the environment than others do. The general notion that biblical doctrine encourages environmental disregard, and that biblical belief (especially Christian fundamentalism) thus reduces environmental concern, became known as the 'White Thesis.' The first study designed specifically to test the White Thesis found that Judeo-Christian respondents were more likely to accept the notion of rightful human use of and 'mastery over' nature, and the authors assumed that such attitudes indicated low environmental concern and would motivate negative environmental behaviour (Hand & Van Liere, 1984; cf. Weigel, 1977; Kellert & Berry, 1980). Such conclusions were not without debate. Although Shaiko's 1987 study echoed Hand and Van Liere's correlation between Judeo-Christian affiliation and an increased likelihood of adopting mastery language (versus non-Judeo-Christians), he none the less found that his Judeo-Christian respondents on the whole disagreed with a mastery orientation. Shaiko thus questioned the validity of the White Thesis (and Hand and Van Liere's conclusions supporting it), highlighting its 'flaws of generalization and misinterpretation.' Eckberg and Blocker (1989) challenged Shaiko's conclusions, and claimed that his results in fact confirmed White's Thesis. They declared that their own results also confirmed the White Thesis, concluding that 'belief in Bible' correlates (weakly) with low environmental concern. However, this 1989 study represents the 'last stand' in favour of White in the literature. In a 1996 study, Eckberg and Blocker were unable to replicate their 1989 findings, and Shaiko's doubts were confirmed and expanded upon by subsequent research.

There are two main reasons why the early endorsements by sociologists of White's thesis did not hold up under scrutiny. The first was a flawed metric, which was exposed by Shaiko (1987) when he factored political ideologies into his analysis of environmental and religious variables. Whereas Hand and Van Liere (1984) and Eckberg and Blocker (1989) measured religious, environmental, and other demographic variables, Shaiko also measured political ideology, and discovered that when political views were factored in, the influence of religious variables on environmental attitudes declined in significance. Subsequent studies corroborated this finding, concluding that it was political factors, not religious beliefs that were responsible for variations in respondents' environmental concern as measured in survey studies (Greeley, 1993; Guth *et al.* 1993, 1995; Eckberg & Blocker, 1996; Woodrum & Wolkomir, 1997; Wolkomir *et al.* 1997b).

That mastery attitudes were not grounded in religious teachings was further underscored by subsequent studies that attended particularly to the relation between mastery attitudes and substantive religious beliefs. Contra White, these more specific studies found that dominion as such is not a belief that is reinforced by religious affiliation or doctrine (Woodrum & Hoban, 1994; Eckberg & Blocker, 1996; Wolkomir *et al.*, 1997a, 1997b). Results showed that even respondents who believe in a literal interpretation of the creation account in Genesis, and those who favour teaching creationism in schools, do not agree that 'according to the Bible humans are supposed to use nature to their own advantage' (Woodrum & Hoban,

1994).⁵ Moreover, by further teasing out multiple theological influences, Guth *et al.* (1993, 1995) were able to show that dominion as set forth in Genesis (regardless of interpretation) functions as a very minor part of even fundamentalists' belief systems in the USA.

The metric that misdiagnosed the cause of mastery attitudes was not the only flaw in early studies. More fundamentally, the diagnosis of the environmental crisis that called mastery the problem (and opposition to mastery the solution) was too simplistic. White had asserted that an attitude of 'mastery' was environmentally problematic, and White's early supporters accepted White's claim as diagnostic. This encouraged social scientists to apply a crude measure of 'mastery attitudes' as an indicator of low environmental concern; but the empirical relation between such attitudes and environmental behaviours remained unexamined. Kanagy and Willits (1993) were the first to address this shortcoming, by measuring both environmental concern (in terms of mastery attitudes) and a suite of environmental behaviours. They discovered that although Judeo-Christian respondents per usual showed greater acceptance of mastery, they did not demonstrate significantly poorer environmental behaviours. In some cases, in fact, religiously affiliated respondents rated higher on measures of environmental behaviour, a finding that replicated contraindications evident but largely disregarded in Hand and Van Liere and Eckberg and Blockers' White-confirming studies in the 1980s. These findings led to several improvements in research approaches, and a reassessment of assumptions inherent in earlier hypotheses.

Later studies exchanged the mastery diagnostic for alternative measures of environmental concern, and concluded that respondents with biblical beliefs do not in fact demonstrate low environmental concern (Kanagy & Nelson, 1995; Kempton *et al.*, 1995; Schulz *et al.*, 2000). Various studies concluded that an ethic different from the *anti*-dominion-mastery-anthropocentrism view adopted by researchers, perhaps an ethic of 'stewardship,' probably accounted for the equally virtuous environmental behaviours of Judeo-Christian adherents (Shaiko, 1987; Kanagy & Willits, 1993; Kanagy & Nelson, 1995; Wolkomir *et al.*, 1997a, 1997b; Woodrum & Wolkomir, 1997). Although no subsequent studies supported the White Thesis, a host of studies detailed a variety of positive correlations between religious affiliation and various environmental variables: cultural greenness (Eckberg & Blocker, 1996; Tarakeshwar *et al.*, 2001), environmental behaviour (Kanagy & Willits, 1993; Eckberg & Blocker, 1996; Wolkomir *et al.*, 1997a, 1997b; Tarakeshwar *et al.*, 2001), and unwillingness to relax environmental controls (Kanagy & Nelson, 1995).⁶

Moreover, outside the USA, several cross-national studies explicitly rejected the White Thesis, finding no consistent pattern of difference between Judeo-Christian and non-Judeo-Christian respondents' environmental concern and behaviour (Ester & Seuren, 1992; Black, 1997; Dekker *et al.*, 1997; Kim, 1999; Hayes & Marangudakis, 2000, 2001). With the benefit of hindsight, some recent analyses have concluded that a lack of theologically or anthropocentrically-based environmental attitude and behaviour options in the wording of questionnaires may have kept

religious respondents from expressing their environmental support in early studies (Kempton *et al.*, 1995; Nooney *et al.*, 2003).

Problematic assumptions in environmental theory

Despite the evidence noted above, the idea that religious mastery doctrines or other beliefs 'are the problem' persists. Beyond simple ignorance of the facts, this may be in part because by the time these new findings and approaches emerged, the New Environmental Paradigm (NEP) (Dunlap & Van Liere, 1978) had gained currency within environmental sociology. However, the NEP was based on the same flawed mastery diagnostic that had misled early empirical religion-environment studies (interestingly, Hand and Van Liere used the same data set to 'confirm' White in 1984 that Dunlap and Van Liere used to propose the NEP in 1978). Though various dimensions of the NEP continue to be questioned (e.g. Edgell & Nowell, 1989; Scott & Willits, 1994; Shanahan *et al.*, 1999; Geno, 2000; Watson, 2001; Cordano *et al.*, 2003), it became the dominant analytic paradigm for measuring environmental attitudes and continues to influence the prescription of educational goals. Yet obviously some of the foundational value assumptions of the NEP (now the New Ecological Paradigm of Dunlap *et al.*, 2000) have not been reconciled to the results of religion-environment studies, which show that mastery and dominion attitudes do not necessarily equate with poor environmental behaviour, and that anthropocentric perspectives can function as an effective basis for environmental concern (Lowry, 1998; see also Sober, 1986). Thus, it is fair to say that the NEP's anti-mastery and anti-anthropocentric tenets implicitly oppose and downplay important sources of environmental values, and that adherence to the NEP may contribute to the marginalization of ecotheology. This is unfortunate given the fact that there is no good evidence that the biblical emphasis on dominion results in environmental neglect.

Theological contributions are further marginalised in environmental education by a lack of substantive reference to religious or spiritual influences in much environmental theory. For instance, discussions of the bases of environmental concern often either ignore or discount western theological perspectives (e.g. Merchant, 1992; Stern & Dietz, 1994; Schultz & Zelezny, 2003). Hungerford and Volk's (1990; cf. Ramsey & Hungerford, 2002) classic environmental citizenship behaviour flow chart also unsurprisingly excludes any significant attention to religious or spiritual factors (this is to be expected of a model derived from an analysis of outcomes in secular environmental education). This stands in sharp contrast to Hawthorne and Alabaster's (1999) more recent but little referenced study from the United Kingdom that ranks religious affiliation as a highly influential factor in environmental citizenship behaviour, or Kempton and colleagues' (1995) findings that indicate that in the USA the most common sources of environmental values are spiritual and religious. The tendency to overlook religious influences, or subsume them into other categories, may leave the unfortunate and erroneous impression that they have little to offer, thus unduly narrowing environmental theory.

Sticking points

Even if White's dominion thesis has been thrown into question by social science research—as well as by many successful historical, philosophical, and theological critiques—is it not reasonable to fault Christian 'end times' beliefs for their negative effects on the treatment of nature? As exemplified by Moyers, popular suspicion blames such religious (and assumedly irrational) beliefs for inspiring environmental neglect, but it usually does so by appealing to unsubstantiated claims. Recalling the evidence noted above, sociological surveys do not indicate that conservative Christians demonstrate worse environmental behaviour than others do, and recent polls find evangelical Christian views comparable to those of the American public in desiring stronger action to protect the environment (Meyer, 2006). As a result, the evidence for significant anti-environmental end times views is usually established by reference to anecdotal claims, particularly concerning James Watt, President Reagan's first Secretary of the Interior (e.g. Scherer, 2004; Moyers, 2005; cf. Wolf, 1981). However, anecdotal accounts make poor evidence, especially when they are false. To the great surprise of many environmentalists (including the author), the evidence regarding Watt turns out to counter the idea of religiously inspired anti-environmentalism. Watt has long been derided for exemplifying a position of Christian anti-environmentalism, on the basis of statements attributed to him such as 'When the last tree is felled, Christ will return.' It turns out that these supposedly anti-environmental religious sentiments were products of media spin. The only related thing Watt is actually on record as having said, is 'I do not know how many future generations we can count on before the Lord returns, whatever it is we have to manage with a skill to leave the resources needed for future generations' (Stoll, 1997; Hinderacker, 2005; J.G. Watt, personal communication, 25 February 2005). Watt may have favoured policies unpopular with many environmentalists, but he did not publicly ascribe what many perceive to be his anti-environmental motivation to his religious beliefs (cf. Bratton, 1983).

The same might be said in regard to Lynn White's treatment of Ronald Reagan, which seems to stand as the progenitor of all this misguided finger pointing. White used an alleged—but false—quote from then California Governor Ronald Reagan to exemplify his theory of Christian disregard for nature, saying that Reagan spoke for the Christian tradition in promoting a disregard for redwood trees (1967, p. 1206). It was in fact White's only specific example, beyond a generic reference to Christian missionaries and sacred groves, of the effect of Christian anti-nature dogma. Even if such a dogma existed, Reagan's actual sentiments regarding redwood preservation probably had nothing to do with biblical beliefs (Schrepfer, 1983). Reagan was much less a churchman than White himself. In any event, as with Reagan, in Watt's case it is probably fair to say that conservative political priorities, not theological beliefs, drove his environmental policies (Bratton, 1983). Furthermore, New Testament teachings on the end times typically advocate vigilance and fidelity in the face of Christ's imminent return, while never suggesting that expectation of the end times sanctions irresponsibility, environmental or otherwise. Irresponsible stewardship, in

fact, is said to lead to punishment (e.g. Matthew 24:45–51; Siemer & Hitzhusen, in press). This is not to deny that some Christians hold anti-environmental views; but the claim that Christians do so in significant numbers and primarily *because* of their religious beliefs is baseless. Simply put, the spectre of biblical anti-environmentalism is largely a myth.

Faced with the fact that there is no good evidence establishing the existence of significant fundamentalist or other Christian-inspired environmental disregard, it is tempting for remaining sceptics to fall back on highlighting the differences between conservative versus liberal environmental platforms. The typical sort of claim is that liberals care about environmental protections, while conservatives—many of whom identify themselves as Christians—want to overturn environmental protections in favour of business and development interests. However, this merely serves to make clear that the environment is indeed a prominent issue in the American liberal-conservative culture war (Lindaman & Haider-Markel, 2002). Talk of religion and the environment too easily mixes and confuses the political and religious overtones that mark the rhetorical liberal-conservative divide (cf. Van Putten, 2005). As already noted, this is what sociological studies have confirmed when showing that it is actually political views (e.g. conservatism itself) that play the main role in shaping respondents' environmental attitudes, even though such attitude measures may be largely irrelevant to environmental behaviour.

This is not to say that there are not important differences between many environmentalists and some evangelical Christians. Richard Cizik of the National Association of Evangelicals (NAE) has recently explained some of the issues that tend to discourage conservative Christians from some varieties of environmentalism. Cizik says that many evangelicals have not been comfortable with what they perceive to be environmentalists' support for government regulation, population control, pantheistic or new-age approaches to religion, and a gloomy approach that tends toward 'prophecies of doom that don't happen' (Solomon, 2005; Goodstein, 2005). However, these differences do not necessarily amount to a difference in *potential* for environmental concern,⁷ and in fact, biblical religious beliefs have been a prominent element in the growth of evangelical Christian environmental advocacy. For instance, the recent work of the NAE and the Evangelical Environmental Network demonstrate that evangelical Christian beliefs are compatible with environmental concern and advocacy (cf. Haag, 2006), and make a welcome addition to the broad base of belief systems that environmental educators can acknowledge as supporting sound environmental citizenship behaviour (cf. Norton, 1991). When evangelical and other Christian and Jewish environmental initiatives have become as common as they are today, these religious models of environmental action constitute part of a larger infrastructure for environmental education and advocacy that offers environmental educators a wider range of avenues by which to empower their students.

A final point of contention deserves attention. Religion and theology have a potentially important role to play in environmental education and environmental policy and advocacy. Owing to current separationist views on church–state issues, it seems unlikely that theology will have much effect on how environmental ethics is actually

taught in public education. This should not discourage educators from taking account of ecotheology. In the USA, the study of religion—in an objective, descriptive sense—is constitutionally allowable in public education, as is the examination of theological arguments and foundations for environmental ethics (Baer *et al.*, 2004, describe one long-standing example of such an approach, and others have emerged from the collaboration of Religious Studies in Secondary Schools with the Forum on Religion and Ecology, as described at www.rsiss.net/rsissfore.html). Furthermore, private schools can pursue ecotheology more substantively, and this is significant for environmental education given that 25% of US colleges and universities and nearly 20% of primary and secondary schools are private (and many are religiously sponsored) (United States Department of Education, n.d.; United States Information Agency, 1997). In addition, religious environmentalism can serve as an important source of what has been called free-choice learning about the environment (Free-choice learning and the environment, 2005), especially in the USA where churches are the most common voluntary organizations (Wolkomir *et al.* 1997a). Thus, ecotheology can contribute to environmental education in public, private, and religious educational contexts, and through informal free-choice learning venues, with each setting offering unique opportunities for incorporation.

Extending the reach of environmental education with ecotheology

Important questions remain for those who wish to incorporate theological elements into environmental education. A broad range of concerns and possible points of integration have recently been discussed elsewhere (Jickling & Russell, 2006; Hitzhusen, 2006), and although that discussion need not be repeated, some basic starting points can be summarized here. To begin with, religious educators have different opportunities than secular educators, as well as different concerns. For instance, particular environmental education materials have been created for specific religious communities, such as mainline Protestants, Roman Catholics, evangelical Christians, and Jews (Bhagat, 1994; COEJL, 1994; EEN, 1994; USCC, 1994), in acknowledgement of basic differences between these groups. Individual denominations have their own creedal and social policy statements about environmental concerns, as noted above. Yet it is common for adult environmental study groups in churches to draw from a range of materials beyond those developed by their own denomination or community. In addition, at least one study has confirmed that churches are more environmentally active when materials beyond their denominational statements (including secular materials) are employed (Holland & Carter, 2005). Therefore, while religious environmental educators' theological or denominational affiliations may determine which approach to ecotheology is most appropriate, they can still benefit from a broad spectrum of theological and secular resources in their teaching. Religious environmental educators can also benefit directly from examining common themes that have characterized the curricula of long-standing Christian and Jewish environmental education programs, such as those I have described elsewhere (Hitzhusen, 2005).

Secular educators may be limited to a more descriptive approach, exploring ecotheologies comparatively rather than confessionally, but the same materials that religious adherents might use confessionally can provide valuable resources for comparative study of environmental values and beliefs. In a secular setting such as a public school, where particular ultimate belief systems are not to be preferentially established or favoured over others, studies of biocentric (e.g. animal rights), ecocentric (e.g. deep ecology), anthropocentric (e.g. conservation and wildlife management), and theocentric (e.g. ecotheological) views each have their place. Exposure to different worldviews also helps students become more tolerant of views different from their own, and attention to ecotheological doctrines alongside other environmental value theories can broaden the prospects for students to explore their own ecological autobiographies (Jurin & Hutchinson, 2005).

A good starting point for examining ecotheology is to note some basic approaches and tenets that have come to characterize religious environmental views. For instance, Laurel Kearns (1996) identifies the three primary traditions of Christian ecotheology in the USA as stewardship, eco-justice, and creation spirituality, and describes representative examples of each type. These categories in part explain why there is no single ‘canon’ of ecotheology to which educators might appeal, a situation not unlike what is found in the case of secular environmental philosophies. Indeed some theological debate has attended to the rise of these approaches, particularly regarding whether some creation spirituality approaches are heretical (of which, some *intend* to be). However, significant elements from all three traditions, especially stewardship and eco-justice, have become standard tenets within various denominational environmental statements. These tenets tend to reinforce a range of familiar environmental values. Denominational and confessional diversity probably assure that no single doctrine of ecology will emerge, even if it is desired. Just as four different gospel accounts recount the story of Jesus, multiple ecotheological treatises must be examined to tell the story of ecotheology. Potentially, the basic contours of a rough ‘working canon’ of ecotheology could be deduced by undertaking a content analysis of the requisite ecotheology statements in each religious denomination. As of 1998, I had catalogued 287 such statements, and their publication has continued apace since then. The sheer breadth of these and other ecotheology works, coupled with the fact that ecotheology is still evolving, suggests that a general summary from the literature may be most helpful at this point.

Some of the most commonly expounded tenets of Christian and Jewish ecotheology (and corresponding Scriptural references) include:

- God’s proclamation of the intrinsic value of all creation, which is designated *very good* (Genesis 1:31).
- The human call to serve and protect creation (Genesis 2:15), exercising the power of dominion (Genesis 1:26–28; see also footnote 5) responsibly, as stewards of the earth which is the Lord’s (Psalm 24:1); observing *ba’al tashit*, God’s prohibition against wasteful destruction (Deuteronomy 20:19).
- God’s protective covenant with all life (not just with human life) at the new beginning of the human story after the Flood (Genesis 9).

- God's intention that human productivity be restrained through Sabbath rest for the sake of humans, wildlife, and land (Leviticus 25–26; Exodus 23:10), and the fact that Sabbath rest is part of the very order of creation (Genesis 2:2–3).
- God's displeasure with violent, unjust, greedy people, whose disobedience and unfaithfulness, warn the prophets, leads to devastation of the land (Hosea 4:1–3; Jeremiah 12:4; Zechariah 7:8–14). These warnings presage John's prophecy of the time to come for rewarding the faithful and 'for destroying those who destroy the earth' (Revelation 11:18).
- God's humbling comparison of humans to other creatures and the natural world (Job 38–41); God's exhortation to forsake vanity and materialism by appeal to non-human exemplars (Luke 12:24–48), especially in light of God's abundant provision (e.g. Psalm 104).
- The revelatory value of the 'Book of Nature,' whereby knowledge of God is gained by observing creation (Romans 1:20; Job 12:7–9; cf. Psalm 19:1–4).
- The doxological celebration of the creator by all creation (e.g. Psalms 65, 96, 98 and 148).
- The identification of the cosmic relevance of Christ, through whom all things were made (John 1:3; Colossians 1:15–17; Hebrews 1:2), in whom all things hold together and are sustained (Hebrews 1:3; Colossians 1:17), and through whom all things are reconciled to God (Colossians 1:20); God's salvific intentions for all creation (John 3:16–'For God so loved the *cosmos*...'; see also Mark 16:15) and the link between human redemption and the redemption of all creation (Romans 8:19–25).
- The Kabbalist notion of *tikkun olam*, the repairing of the world (e.g. Feldman, 2003), which is sometimes connected with the environmentally prescient celebration of Tu B'Shvat, the Jewish New Year for Trees (Elon *et al.*, 1999).
- Eschatological (end times) visions of cosmic harmony, where the 'wolf shall live with the lamb,' and where 'they will not hurt or destroy on all my holy mountain' (Isaiah 11:6–9; 65:25), and when creation will enjoy the freedom of the children of God (Romans 8:19–21).

In addition, many ecotheologians have attempted to summarize some of the prime resources of biblical traditions for environmental ethics. Bratton (2004) lists: stewardship, the principle of *ba'al tashit* ('do not destroy'), divine joy, neighbourliness, Sabbatical, respecting the disadvantaged, and prudence. DeWitt (1994) names: earthkeeping, Sabbath rest, seeing Christ as creator-sustainer-reconciler, and following calls to: enjoy but do not destroy creation's fruitfulness, seek first the kingdom of God, seek true contentment and sufficiency (not satiety), and practice what you believe. Nash (1991) provides an extended treatment of Christian love of nature (cf. Bratton, 1992) and emphasizes virtues such as frugality and humility (p. 63–67), and Schut (1999) is one of many authors who examine theological resources for simplicity. Bouma-Prediger (2001) highlights similar concepts, including imitating Christ's rule in human dominion, and caring for creation 'for the beauty of the earth,' with a grateful heart. Together these themes reflect the content

of a great deal of ecotheology, though by no means do they exhaust the possibilities. Elsewhere I have suggested in detail how such ecotheological resources might inform and enhance various elements of environmental education (Hitzhusen, 2006). Undoubtedly, a broader engagement with these sources by environmental educators will contribute to a clearer discernment of which elements are most fruitful for environmental education.

Ecotheology is complex, but many resources exist to help educators become familiar with some common starting points. In many cases, the value of ecotheology can be realized not just by teaching ecotheology, but also simply by acknowledging its value to environmental ethics and citizenship. Students who have traditionally been told (implicitly if not directly) that their religious views are environmentally problematic might thereby be empowered to pursue their own search for further points of connection. At the same time, examining the structure of successful religious environmental education programmes can provide models for integrating ecotheology into environmental education (Hitzhusen, 2005). Ecotheology represents a valuable potential partner for environmental educators within the larger environmental education infrastructure. Other countries may have a different religious make-up than the United States, but insofar as religion plays a more or less significant role in every society, ecotheology can enhance and broaden the cultural and ideological bases for environmental ethics (see, for instance, the partnerships highlighted at www.arcworld.org). Religious teachings can broaden the base of values active in supporting environmental citizenship, not by attempting to convert students to a new belief system, but by empowering them to develop their environmental values within whatever pre-existing value system they already occupy (Hitzhusen, 2006).

Conclusion

Judeo-Christian theology, like other religious perspectives, offers welcome resources for environmental education. Religious environmental initiatives are already a significant force within environmental advocacy, and a substantial literature and cast of supporting organizations make ecotheology a ready ally for environmental educators. Ecotheology is no panacea, but various studies show that in the USA, a country whose value systems are significantly influenced by biblical theological traditions, religious affiliations tend to promote positive environmental behaviours and attitudes rather than discourage them. In some cases, ecotheology even serves as an ideological resource for non-believers. For instance, by combining survey results with open-ended interviews, Kempton and colleagues uncovered an openness to religiously motivated environmental concern that had escaped the notice of earlier survey studies (Kempton *et al.*, 1995). More than any other question assessing environmental concern, respondents across categories agreed strongly that ‘because God created the natural world, it is wrong to abuse it.’ Even 68% of the non-religious respondents agreed with this statement, and more surprisingly, 47% of atheists and those who did not believe there is a spiritual force in the universe agreed with the statement. The authors concluded that even

for those who do not believe, reference to divine creation is the best language Americans have to express their deepest value for the natural world. Americans resonate with valuing nature because God created it, as described by the book of Genesis and reinforced by other tenets of Judeo-Christian ecotheology, and even non-religious citizens tend to appreciate this fact.

Especially among conservative religious citizens in the United States, ecotheology is better suited to inspire and support an environmental ethic than secular environmental belief systems such as the NEP. Ecotheology can thus extend the reach of environmental education, and help educators provide a more genuinely plural perspective. Failure to appreciate the perspectives of ecotheology risks further entrenching the battle lines of environmental rhetoric and discouraging the evolution and diversification of environmental ethics. In the past, some environmentalists may have been hesitant to imagine Judeo-Christian theology as an ally for environmental education, but by addressing lingering misconceptions and exploring a range of possible integration points, sceptics may begin to view ecotheology as an important partner that environmental educators should not fear to embrace.

Acknowledgements

This article is dedicated to the memory of John F. Disinger (1930–2005), a lifelong member of the church in which the author was raised, and an early advisor to this work. Richard Baer, Jim Tantillo, Jamie Skillen, and Karl Johnson provided patient feedback on early drafts, and the suggestions of the editors and two anonymous reviewers substantially improved the final manuscript.

Notes on contributor

The author received a BS in ecology from Cornell University, an MDiv from Yale University, and recently completed a Ph.D. in religion-environment studies in the Cornell Department of Natural Resources. He previously co-created and directed the National Wildlife Federation's NatureLink programme, and worked for the National Religious Partnership for the Environment. He currently serves as the Land Stewardship Specialist for the National Council of Churches of Christ in the USA.

Notes

1. 'Ecotheology' is used as a general term to refer to theologies or religious teachings that address environmental concerns. This definition is imprecise in at least two ways—not all spiritual and religious insights that bear on the environment are considered theology, and theological insights have varying degrees of environmental applicability. Yet ecotheology has developed along several characteristic lines, such as the stewardship, eco-justice, and creation spirituality traditions within Christianity noted by Kearns (1996). Denominational environmental policy statements (see Ellingsen, 1993; Harvard Forum on Religion and Ecology, n.d.; and NRPE, n.d.) are also representative of the substance and scope of ecotheology.

2. The term Judeo-Christian is problematic, and it should not be taken to suggest a generalized or common Jewish-Christian religious tradition. It is retained here to indicate Jewish and Christian traditions respectively, which, although they do share ecotheological tenets in common—particularly from Hebrew Bible/Old Testament sources—also have distinctive theologies, traditions, and approaches to ethics.
3. Disappointingly, Moyers (Griscom, 2003) does not cite an actual example of Genesis or ‘dominion’ being used to justify environmental exploitation or disregard. The only direct example Moyers gives of an anti-environmental end time belief is a misquote of James Watt from the early 1980s which Moyers has subsequently retracted because of its gross inaccuracy—in fact Watt’s actual words suggest the opposite of Moyers’ claim (see below and Hinderacker, 2005; Moyers, 2005; cf. Stoll, 1997, pp. 188–192). Moyers revisits this debate, however, in an October 2006 television program titled: ‘Is God Green?’ which examines recent developments in the environmental views of conservative and evangelical Christians (visit www.pbs.org/moyers for more information).
4. Theological literature on the environment is vast (see Cobb, 1996; Sheldon, 1992; or Wildman, 2006, which lists more than 2000 citations), and includes many works predating and contemporary with Earth Day (e.g. Baer, 1966, 1969, 1971; Heschel, 1951, 1955; Santmire, 1970, 1975; Schaeffer, 1970; Sittler, 1954, 1964, 1970). The activities of the National Religious Partnership for the Environment can be browsed at www.nrpe.org as an introduction to further religious environmental activity.
5. Opponents of religion may be reticent to give up as popular an argument as White’s Thesis, which plays nicely alongside secular arguments asserting the inferiority of religious views in the face of allegedly more rational alternatives (Smith, 2003). However, even if critics persist in believing that an appreciable anti-environmental influence has come from improper church teachings regarding ‘dominion’ in Genesis, there remains little debate over whether biblical theology itself offers support for environmentally irresponsible ‘mastery over nature’ views. The Bible clearly acknowledges human power and its destructive capacity, especially when sin takes humanity askew of God’s intentions, yet the Bible never grants exploitative license in the use of creation. Nevertheless, environmental criticisms of the Genesis texts have tended to rely on narrowly literal studies of just a few sentences in Genesis, which ignore the majority of the biblical corpus and seem ignorant of the context of even the Genesis stories. Despite Lynn White’s (mis)interpretation of orthodoxy, theologians overwhelmingly affirm that the biblical concept of ‘dominion’ does not imply domination and exploitation, but rather is a charge to responsible care taking, stewardship, or shepherding (Lohfink, 1982, pp. 178–179; Rogerson, 1991), of the sort that leads to *shalom* (Limburg, 1991; Steffen, 1992). The moral issue concerns *how* humans exercise their power over nature, not *whether* they possess it (cf. Baer *et al.* 2004), since neither degradation nor ‘earthkeeping’ would be possible without it. As Steffen (1992) has made clear, the biblical stories of dominion in Genesis provide a *critique* of domination rather than its sanction. Note in this regard that humans are not specifically re-charged with having dominion when human origins are re-calibrated after the Flood (Bouma-Prediger, 2001, p. 98), and that God then covenants with Noah and with *all life on earth* (Genesis 9:1–17). Note also that unlike other themes from the first chapter of Genesis, human dominion over the earth and its creatures is never again re-emphasized in the entire biblical corpus, except in the context of the Psalmist’s incredulous wonderment over God (Psalm 8), and perhaps in king Solomon’s unprecedented wise reign that was characterized by *shalom* (I Kings 4:24–25; Psalm 72). Virtually all other references are to God (e.g. Psalm 22:28) or Christ (Ephesians 1:10, 12; cf. Daniel 7:13–14; Zechariah 9:10) having such dominion, ostensibly in the form of servant leadership (Matthew 20:25; I Peter 5:2–3). It is simply theologically incoherent to claim that dominion as put forth in Genesis is intended to sanction despoliation of the environment (Hiers, 1984; Lohfink, 1994).
6. Negative correlations remained within some studies, too, but none sufficient to add favour to White’s Thesis. Some researchers thus conclude that both positive and negative influences can

be noted amid the complex influence of religious variables (Tarakeshwar *et al.*, 2001; Wolkomir *et al.*, 1997a, b), or that regional or political differences may explain these variations (Kanagy & Nelsen, 1995). Others point out that negative correlations are insignificant compared to political and other demographic factors (Black, 1997), concluding ultimately that religion does not strongly or uniquely influence empirical indicators of environmental attitudes and behaviours (Dekker *et al.*, 1997; Ester & Seuren, 1992), a conclusion reminiscent of the geographer Tuan. Social science data of this type will likely remain inconclusive in pronouncing any ultimate judgment, both because of methodological limitations and because of the fact that religious influence is neither monolithic nor static.

7. Guth and colleagues (1993, 1995) identified conservative eschatology, that is, views on the end times and relating to social pessimism, as correlating negatively with attitudes toward environmental policies and priorities among evangelical Christians. No behaviour measures were included in this study, but these findings underscore the political differences indicated by Cizik, and perhaps reflect conservative opposition to government regulation. For instance, one study found liberal religious northerners to be least likely to favour relaxing environmental controls, and conservative religious southerners most likely to oppose governmental environmental controls (Kanagy & Nelsen, 1995). This example points to a difference in political philosophy regarding the proper role of government, rather than to a difference in religious beliefs. Alternatively, Cizik's other points do relate more directly to theological concerns, suggesting that attention to these beliefs (rather than to dominion or end time beliefs) may be more fruitful for religious-environmental dialogue.

References

- Baer, R. A. (1966) Land misuse: a theological concern, *The Christian Century*, 83(41), 1239–1241.
- Baer, R. A. (1969) Conservation: an arena for the church's action, *The Christian Century*, 86(2), 40–43.
- Baer, R. A. (1971) Ecology, religion, and the American dream, *American Ecclesiastical Review*, 165(1), 43–59.
- Baer, R. A., Tantillo, J. A., Hitzhusen, G. E., Johnson, K. E. & Skillen, J. R. (2004) From delight to wisdom: 30 years of teaching environmental ethics at Cornell, *Worldviews*, 8(2–3), 298–322.
- Barr, J. (1972) Man and nature: the ecological controversy of the Old Testament, *Bulletin of the John Rylands University Library of Manchester*, 55(1), 9–32.
- Berry, W. (1990) God and country, in: *What are people for? Essays by Wendell Berry* (New York, North Point Press).
- Bhagat, S. P. (Ed.) (1994) *God's earth our home: a resource for congregational study and action on environmental and economic justice* (New York, National Council of Churches of Christ in the USA).
- Black, A. W. (1997) Religion and environmentally protective behavior in Australia, *Social Compass*, 44(3), 401–412.
- Bouma-Prediger, S. (2001) *For the beauty of the earth: a Christian vision for creation care* (Grand Rapids, Baker Academic).
- Bratton, S. P. (1983) The ecotheology of James Watt, *Environmental Ethics*, 5(3), 225–236.
- Bratton, S. P. (1992) Loving nature: Eros or agape? *Environmental Ethics*, 14(1), 3–25.
- Bratton, S. P. (2004) Rockfish, redfish, stockfish, foodfish: seven biblical principles for the care of creation, *Sojourners*, 33(3), 22–25.
- Coalition on the Environment and Jewish Life (COEJL) (1994) *To till and to tend: a guide to Jewish environmental study and action* (New York, Coalition on the Environment and Jewish Life).
- Cobb, J. (1996) *Ecotheology book list*. Available online at: <http://www.cep.unt.edu/ecotheo.html> (accessed 14 September 2006).

- Cordano, M., Welcomer, S. A. & Scherer, R. F. (2003) An analysis of the predictive validity of the New Ecological Paradigm scale, *The Journal of Environmental Education*, 34(3), 22–28.
- Dekker, P., Ester, P. & Nas, M. (1997) Religion, culture and environmental concern: an empirical cross-national analysis, *Social Compass*, 44(3), 443–458.
- Derr, T. S. (1975) Religion's responsibility for the ecological crisis: an argument run amok, *World-view*, 18(1), 39–45.
- DeWitt, C. B. (1994) *Earth-Wise: A biblical response to environmental issues* (Grand Rapids, CRC Publications).
- Dunlap, R. E. & Van Liere, K. D. (1978) The 'New Environmental Paradigm': a proposed measuring instrument and preliminary results, *Journal of Environmental Education*, 9(4), 10–19.
- Dunlap, R. E., Van Liere, K. D., Mertig, A. G. & Jones, R. E. (2000) Measuring endorsement of the new ecological paradigm: a revised NEP scale, *Journal of Social Issues*, 56(3), 425–442.
- Eckberg, D. L. & Blocker, T. J. (1989) Varieties of religious involvement and environmental concerns: testing the Lynn White thesis, *Journal for the Scientific Study of Religion*, 28(4), 509–517.
- Eckberg, D. L. & Blocker, T. J. (1996) Christianity, environmentalism, and the theoretical problem of fundamentalism, *Journal for the Scientific Study of Religion*, 35(4), 343–355.
- Edgell, M. C. R. & Nowell, D. E. (1989) The new environmental paradigm scale: wildlife and environmental beliefs in British Columbia, *Society and Natural Resources*, 2(4), 285–296.
- Ellingsen, M. (1993) *The cutting edge: how churches speak on social issues* (Geneva, WCC Publications).
- Elon, A., Hyman, N. M. & Waskow, A. (Eds) (1999) *Trees, earth, and Torah: a Tu B'Shvat anthology* (Philadelphia, Jewish Publication Society).
- Ester, P. & Seuren, B. (1992) Religious beliefs and environmental attitudes: an empirical test of the Lynn White hypothesis in fourteen nations, *Sociale Wetenschappen*, 35(1), 20–39.
- Evangelical Environmental Network (EEN) (1994) *Let the earth be glad: a starter kit for evangelical churches to care for God's creation* (Monrovia, CA, World Vision Office of Advocacy and Education).
- Feldman, L. R. (2003) *Small steps toward environmental tikkun for home and synagog*. Available online at: <http://www.coejl.org/programbank/displayprog.php?id=151> (accessed 25 June 2006).
- Foley, M. W. (1977) Who cut down the sacred tree? Replying to Lynn White, Jr's popular thesis that Christianity is the root of all environmental evil, *The CoEvolution Quarterly*, 15, 60–67.
- Gardner, G. (2002) *Invoking the spirit: religion and spirituality in the quest for a sustainable world* (Worldwatch Paper 164) (Washington, DC, Worldwatch Institute).
- Geno, B. (2000) Replacing the new environmental paradigm (NEP) with an ecologically sustainable development paradigm (ESDP): testing scale items on rural and regional Australian occupational groups. *Sociological Sites/Sights*, TASA 2000 Conference, Adelaide: Flinders University. 6–8 December.
- Glacken, C. J. (1967) *Traces on the Rhodian shore: nature and culture in western thought from ancient times to the end of the eighteenth century* (Berkeley, University of California Press).
- Goodstein, L. (2005, March 10) Evangelical leaders swing influence behind effort to combat global warming, *The New York Times*, p. A16.
- Greeley, A. (1993) Religion and attitudes toward the environment, *Journal for the Scientific Study of Religion*, 32(1), 19–28.
- Griscom, A. (2003, August 26) Now hear this: Bill Moyers speaks his mind on Bush-brand environmental destruction and more, *Grist Magazine*. Available online at: www.grist.org/news/maindish/2003/08/26/griscom-moyers (accessed 24 October 2004).
- Guth, J. L., Kellstedt, L. A., Smidt, C. E. & Green, J. C. (1993) Theological perspectives and environmentalism among religious activists, *Journal for the Scientific Study of Religion*, 32(4), 373–382.

- Guth, J. L., Kellstedt, L. A., Smidt, C. E. & Green, J. C. (1995) Faith and the environment: religious beliefs and attitudes on environmental policy, *American Journal of Political Science*, 39(2), 364–382.
- Haag, A. (2006) Church joins crusade over climate change, *Nature*, 440(7081), 136–137.
- Haluza-Delay, R. (2000) Green fire and religious spirit, *The Journal of Experiential Education*, 23(3), 143–149.
- Hand, C. M. & Van Liere, K. D. (1984) Religion, mastery-over-nature, and environmental concern, *Social Forces*, 63(2), 555–570.
- Harvard Forum on Religion and Ecology (FORE) (n.d.) *Statements*. Available online at: <http://environment.harvard.edu/religion/publications/statements/index.html> (accessed 6 June 2006).
- Hawthorne, M. & Alabaster, T. (1999) Citizen 2000: Development of a model of environmental citizenship, *Global Environmental Change*, 9(1), 25–43.
- Hayes, B. C. & Marangudakis, M. (2000) Religion and environmental issues within Anglo-American democracies, *Review of Religious Research*, 42(2), 159–174.
- Hayes, B. C. & Marangudakis, M. (2001) Religion and attitudes towards nature in Britain, *British Journal of Sociology*, 52(1), 139–155.
- Heimlich, J. E. (Ed.) (2005) Free-choice learning and the environment [Special issue], *Environmental Education Research*, 11(3), 261–387.
- Heschel, A. J. (1951) *The Sabbath: its meaning for modern man* (New York, Farrar, Straus, & Giroux).
- Heschel, A. J. (1955) *God in search of man* (New York, Farrar, Straus, & Giroux).
- Hiers, R. H. (1984) Ecology, biblical theology, and methodology: biblical perspectives on the environment, *Zygon*, 19(1), 43–59.
- Hinderacker, J. (2005) *Bill Moyers smears a better man than himself*. Available online at: <http://powerlineblog.com/archives/009475.php> (accessed 22 February 2005).
- Hitzhusen, G. E. (2005) Understanding the role of spirituality and theology in outdoor environmental education: a mixed-method characterization of 12 Christian and Jewish outdoor programs, *Research in Outdoor Education*, 7, 39–56.
- Hitzhusen, G. E. (2006) Religion and environmental education: building on common ground, *Canadian Journal of Environmental Education*, 11, 9–25.
- Holland, L. & Carter, J. S. (2005) Words v. deeds: a comparison of religious belief and environmental action, *Sociological Spectrum*, 25(6), 739–753.
- Hughes, J. D. (1994) *Pan's travail: environmental problems of the ancient Greeks and Romans* (Baltimore, MD, The Johns Hopkins University Press).
- Hungerford, H. R. & Volk, T. L. (1990) Changing learner behavior through environmental education, *Journal of Environmental Education*, 21(3), 8–21.
- Jacobus, R. J. (2004) Understanding environmental theology: a summary for environmental educators, *Journal of Environmental Education*, 35(3), 35–42.
- Jickling, B. & Russell, C. (2006) Religion and environmental education [Special issue], *Canadian Journal of Environmental Education*, 11, 5–111.
- Jurin, R. R. & Hutchinson, S. (2005) Worldviews in transition: using ecological autobiographies to explore students' worldviews, *Environmental Education Research*, 11(5), 485–501.
- Kanagy, C. & Nelsen, H. M. (1995) Religion and environmental concern: challenging the dominant assumptions, *Review of Religious Research*, 37(1), 33–45.
- Kanagy, C. L. & Willits, F. K. (1993) A 'greening' of religion? Some evidence from a Pennsylvania sample, *Social Science Quarterly*, 74(3), 674–683.
- Kearns, L. (1996) Saving the creation: Christian environmentalism in the United States, *Sociology of Religion*, 57(1), 55–70.
- Kellert, S. & Berry, J. (1980) *Phase III: knowledge, affection and basic attitudes toward animals in American society* (Washington, DC, US Department of Interior, Fish and Wildlife Service).
- Kellert, S. R. & Farnham, T. J. (Eds) (2002) *The good in nature and humanity: connecting science, religion, and spirituality with the natural world* (Washington, DC, Island Press).

- Kempton, W., Boster, J. S. & Hartley, J. A. (1995) *Environmental values in American culture* (Cambridge, MA, Massachusetts Institute of Technology).
- Kim, D. S. (1999) Environmentalism in developing countries and the case of a large Korean city, *Social Science Quarterly*, 80(4), 810–829.
- Limburg, J. (1991) The responsibility of royalty: Genesis 1–11 and the care of the earth, *Word & World*, 11(2), 124–130.
- Lindaman, K. & Haider-Markel, D. P. (2002) Issue evolution, political parties, and the culture wars, *Political Research Quarterly*, 55(1), 91–110.
- Lohfink, N. (1982) *Great themes from the old testament* (R. Walls, Trans.) (Chicago, Franciscan Herald Press; Edinburgh, T&T Clark Ltd).
- Lohfink, N. (1994) 'Subdue the earth?' (Genesis 1:28), in: *Theology of the Pentateuch: themes of the priestly narrative and Deuteronomy* (Minneapolis, Fortress Press).
- Lowry, R. C. (1998) Religion and the demand for membership in environmental citizen groups, *Public Choice*, 94, 223–240.
- Marangudakis, M. (2001) The medieval roots of our ecological crisis, *Environmental Ethics*, 23(2), 243–260.
- McGrath, A. (2002) *The reenchantment of nature: the denial of religion and the ecological crisis* (New York, Doubleday).
- Merchant, C. (1992) *Radical ecology* (New York, Routledge).
- Meyer, S. E. (2006) *Christians and climate change*. Available online at: [www.cpjustice.org/stories/StoryReader\\$1361](http://www.cpjustice.org/stories/StoryReader$1361) (accessed 10 June 2006).
- Moncrief, L. (1970) The cultural basis for our environmental crisis: Judeo-Christian tradition is only one of many cultural factors contributing to the environmental crisis, *Science*, 170(3957), 508–512.
- Moyers, B. (2005, January 30) There is no tomorrow, *Minneapolis Star Tribune*, Op Ed.
- Nash, J. A. (1991) *Loving nature: ecological integrity and Christian responsibility* (Nashville, Abingdon).
- Nash, R. F. (1989) *The rights of nature: a history of environmental ethics* (Madison, WI, The University of Wisconsin Press).
- National Religious Partnership for the Environment (NRPE) (n.d.) *Statements and activities*. Available online at: www.nrpe.org/statements/index.html (accessed 6 June 2006).
- Nooney, J. G., Woodrum, E., Hoban, T. J. & Clifford, W. B. (2003) Environmental worldview and behavior: consequences of dimensionality in a survey of North Carolinians, *Environment and Behavior*, 35(6), 763–783.
- Norton, B. (1991) *Toward unity among environmentalists* (New York, Oxford University Press).
- Oelschlaeger, M. (1994) *Caring for Creation: an ecumenical approach to the environmental crisis* (New Haven, CT, Yale University Press).
- Palmer, M. with Finlay, V. (2003) *Faith in conservation: new approaches to religions and the environment* (Washington, DC, The World Bank).
- Pope, C. (1997) *Religion and the environment: remarks of Carl Pope, Sierra Club Executive Director, Symposium on Religion, Science and the Environment under the auspices of His All Holiness Bartholomew I, Ecumenical Patriarch, Santa Barbara California, November 6–8, 1997*. Available online at: <http://www.christianecology.org/CarlPope.html> (accessed 25 January 2005).
- Pope, C. (1998) Reaching beyond ourselves: it's time to recognize our allies in the faith community, *Sierra*, 83(6), 14–15.
- Ramsey, J. & Hungerford, H. R. (2002) Perspectives on environmental education in the United States, in: T. Dietz & P. Stern (Eds) *New tools for environmental protection: education, information, and voluntary measures* (Washington, DC, National Academy Press), 147–160.
- Rogerson, J. W. (1991) *Genesis 1–11* (Sheffield, England, JSOT Press for the Society for Old Testament Study).
- Santmire, H. P. (1970) *Brother earth: nature, God, and ecology in time of crisis* (New York, Nelson).
- Santmire, H. P. (1975) Reflections on the alleged bankruptcy of western theology, *Anglican Theological Review*, 57(2), 131–152.

- Schaeffer, F. A. (1970) *Pollution and the death of man: the Christian view of ecology* (London, Hodder & Stoughton).
- Scherer, G. (2004, October 27) The godly must be crazy, *Grist Magazine*. Available online at: <http://www.grist.org/news/maindish/2004/10/27/scherer-christian/> (accessed 11 November 2004).
- Schrepfer, S. R. (1983) *The fight to save the redwoods: a history of environmental reform, 1917–1978* (Madison, WI, University of Wisconsin Press).
- Schultz, P. W. & Zelezny, L. (2003) Reframing environmental messages to be congruent with American values, *Human Ecology Review*, 10(2), 126–136.
- Schultz, P. W., Zelezny, L. & Dalrymple, N. J. (2000) A multinational perspective on the relation between Judeo-Christian religious beliefs and attitudes of environmental concern, *Environment and Behavior*, 32(4), 576–591.
- Schut, M. (Ed.) (1999) *Simpler living, compassionate life: a Christian perspective* (Denver, CO, Living the Good News).
- Scott, D. & Willits, F. K. (1994) Environmental attitudes and behavior: a Pennsylvania survey, *Environmental Behavior*, 26(2), 239–260.
- Shaiko, R. G. (1987) Religion, politics, and environmental concern: a powerful mix of passions, *Social Science Quarterly*, 68(1–2), 244–262.
- Shanahan, J., Pelstring, L. & McComas, K. (1999) Using narratives to think about environmental attitude and behavior: an exploratory study, *Society & Natural Resources*, 12(5), 405–419.
- Sheldon, J. (1992) *Rediscovery of creation: a bibliographical study of the church's response to the environmental crisis* (ATLA Bibliography Series, 29) (Metuchen, NJ, The American Theological Library Association).
- Siemer, W. F. & Hitzhusen, G. E. (in press) Revisiting the stewardship concept: faith-based opportunities to bridge from principles to practice, in: B. Knuth & W. F. Siemer (Eds) *Aquatic stewardship education: theory and practice* (Bethesda, MD, American Fisheries Society Books).
- Sittler, J. (1954) A theology for earth, *The Christian Scholar*, 37(3), 367–374.
- Sittler, J. (1964) *The care of the earth and other university sermons* (Philadelphia, Fortress).
- Sittler, J. (1970) Ecological commitment as theological responsibility, *Zygon*, 5, 172–181.
- Smith, C. (Ed.) (2003) *The secular revolution: power, interests, and conflict in the secularization of American public life* (Berkeley, CA, University of California Press).
- Sober, E. (1986) Philosophical problems for environmentalism, in: B. Norton (Ed.) *The preservation of species* (Princeton, NJ, Princeton University Press).
- Solomon, D. (2005, April 3) Earthy evangelist, *The New York Times Magazine*, p. 17.
- Steffen, L. H. (1992) In defense of dominion, *Environmental Ethics*, 14(1), 63–80.
- Stern, P. C. & Dietz, T. (1994) The value basis of environmental concern, *Journal of Social Issues*, 50(3), 65–84.
- Stoll, M. (1997) *Protestantism, capitalism, and nature in America* (Albuquerque, University of New Mexico Press).
- Tarakeshwar, N., Swank, A. B., Pargament, K. I. & Mahoney, A. (2001) The sanctification of nature and theological conservatism: a study of opposing religious correlates of environmentalism, *Review of Religious Research*, 42(4), 387–404.
- Tuan, Y. F. (1968) Discrepancies between environmental attitude and behavior: examples from Europe and China, *The Canadian Geographer*, 12(3), 176–191.
- Tuan, Y. F. (1970) Our treatment of the environment in ideal and actuality, *American Scientist*, 58(3), 244, 247–249.
- Tucker, M. E. & Grim, J. (Eds) (1997–2004) *World religions and ecology series* (Cambridge, MA, Harvard University Press).
- United States Catholic Conference (USCC) (1994) *Renewing the face of the earth: a resource for parishes* [Publication No. 766-9] (Washington, DC, United States Catholic Conference).

- United States Department of Education. (n.d.) *Public and private institutions*. Available online at: <http://www.ed.gov/about/offices/list/ous/international/usnei/us/edlite-inst-pubpriv.html> (accessed 19 July 2005).
- United States Information Agency. (1997) *Portrait of the USA (Chapter Six: A diverse educational system: structure, standards, and challenges)*. Available online at: <http://usinfo.state.gov/usa/infousa/facts/factover/ch6.htm> (accessed 19 July 2005).
- Van Putten, M. (2005) Mainstream consensus for environmentalism, *Bioscience*, 55(6), 468–469.
- Watson, K. (2001) Environmental attitudes: what a difference the culture makes, *Social Ecology and Lifelong Learning: Occasional Papers*, 1, 57–70. Available online at: <http://www.URLIN-SERT.com> (accessed 15 April 2004).
- Weigel, R.H. (1977) Ideological and demographic correlates of proecology behavior, *The Journal of Social Psychology*, 103(1), 39–47.
- White, L. (1967) The historical roots of our ecologic crisis, *Science*, 155(3767), 1203–1207.
- White, L. (1968) *Dynamo and virgin reconsidered: essays in the dynamism of western culture* (Cambridge, MIT).
- Whitney, E. (1993) Lynn White, ecotheology, and history, *Environmental Ethics*, 15(2), 151–169.
- Wildman, W. (2006) *Bibliography in ecological ethics and eco-theology*. Available online at: http://people.bu.edu/wwildman/WeirdWildWeb/proj_bibs_ecoethics_00.htm (accessed 13 August 2005).
- Wolf, R. (1981) God, James Watt, and the public's land: our new Secretary of the Interior gets his guidance from a higher authority, and it isn't always President Reagan, *Audubon*, 83(3), 58–65.
- Wolkomir, M., Futreal, M., Woodrum, E. & Hoban, T. (1997a) Substantive religious belief and environmentalism, *Social Science Quarterly*, 78(1), 96–108.
- Wolkomir, M., Futreal, M., Woodrum, E. & Hoban, T. (1997b) Denominational subcultures of environmentalism, *Review of Religious Research*, 38(4), 325–343.
- Woodrum, E. & Hoban, T. (1994) Theology and religiosity effects on environmentalism, *Review of Religious Research*, 35(3), 193–206.
- Woodrum, E. & Wolkomir, M. J. (1997) Religious effects on environmentalism, *Sociological Spectrum*, 17(2), 223–234.