

## Religion and the Environment

Edited by Ronald A. Simkins

### Religion and Environmentalism

Charles L. Harper, Creighton University

#### Introduction

[1] Empirical research by social scientists about the relationship between religious affiliation/belief and action and attitudes toward the environment is abundant, but given the multidimensional nature of both religiosity and environmental protection, the results of different studies – a virtual “briarpatch” of multivariate statistical analyses – seem to defy coherent summary and often contradictory. Some find religious Americans behave in more pro-environmental ways than secular people (Kanaby and Willits; Shibley and Wiggins). Others find a negative relationship between religious affiliation and environmental concern or behavior (Eckberg and Blocker; Guth et al.), and still others find no relationship between religious affiliation and environmental concern or behavior (Greeley; Boyd). To me perhaps the most compelling recent summary of empirical attempts to account for the complexity of both religion and pro-environmental attitudes and behavior finds that religious people on sum do not behave in more environmentally benign ways that do secular people, nor are “liberal” religious people necessarily more pro-environmental than are conservative religious people. Sherkat and Ellison, the authors of that study, suggest that the reason that scholars have found such complex and contradictory findings is that they have failed to distinguish between private acts to preserve nature and politicized forms of environmentalism, and that while religious affiliation may well incline one toward positive environmental stewardship, the increasingly conservative nature of American religion also impels apolitical behavior, which is seen as lack of willingness to act in defense of the environment. Conservative

religious groups, they argue, may not provide a strong ideological foundation for mobilization to protect the environment, but they may play a role in legitimizing environmental protection in private and natural settings.

[2] However important these relationships are, there is more to the religion-environment relationship than demography and distribution of individual attitudes and behaviors. Another level is the relationship between religious leaders (or organizations) and efforts to protect the environment, and the discourses that emerge from such efforts – in other words, the relationship between *religion* and *environmentalism*. This is somewhat analogous to common observations that America’s “culture wars” about religion are largely rancorous conversations and discourses between mobilized elites, rather than the underlying distribution of individual attitudes and religiosity, which often exhibit a bell shaped distributions and complex diversity between religious “modernists” and “traditionalists” (Wuthnow). Yet relationships between mobilized elites are important, in that they are a factor in shaping national dialogues (witness the political influence of conservative evangelicals, or the influence of Islamists in the Middle East, neither of which, we are told, represents the true complexity of attitudes of people in the societies in which they are manifest.). Organized elites have a capacity in mobilizing for action, even when individual attitudes are more nebulous and diverse.

### Historical Context

[3] The relationship between religion and environmentalism surely emerged as a subset of the relationship between religion and science. It is not news that Western scientific ideas were likely to produce conflict with religious thinking and authority, particularly when they challenged the ontologies derived from historic religious teachings. Although vastly oversimplified and not monolithic, secular hostility to religious worldviews and particularly to the creative agency of God continues to be voiced by contemporaries. Richard Dawkins, for example, declares, “All appearance to the contrary, the only watchmaker in nature is the blind forces of physics, albeit deployed in a very special way” (1987: 5; a similar argument is made in his 2006 book). Similar views hostile to a traditional Western religious worldview were voiced by astronomer Carl Sagan, who said, “the Cosmos is all that is or will ever be” (4), and noted biologist E. O. Wilson. In fairness, Wilson has been in public dialogue with the proponents of religious worldviews and his views are considerably more nuanced than those of Dawkins or Sagan. Regarding the environment, the scholarly benchmark of a view hostile to religion is surely historian Lynn White, an expert in neither religion nor the environment, who asserted that the book of Genesis, which mandates humans to “subdue the earth” and to “be fruitful and multiply,” created the theological foundations of environmentally destructive development in the West.

[4] The antipathy between science and religion is historic and established, but it is also complex, multidimensional, and increasingly challenged and contested (see Barbour: 322-28). A common development is a growing rapprochement between organized religion and environmentalism – if not of science in the larger sense. In that relationship, spokespersons for both science and religion recognized the limitations of the positivistic, reductionistic methods and epistemologies deriving from the Enlightenment. Those found truth only by empirical observations about phenomena after being reduced to the most elementary

components. In this sense, ecology has been called the “subversive science,” starting from the premise that all things are connected to, interdependent with, and ultimately a part of all other things (Carroll: 8). While marvelously productive to understand “what is” in a particular way, such Western scientific methods could not provide the distinctive contribution of religion: a sense of holism and the transcendent integration and interdependence of all things at different levels, and meaning that addresses “why” questions giving direction to human action. Religion posits an integrated cosmos and is imbued with an ethic of caring – at once interpersonal, social, and ecological. These attributes are lacking in science that emphasizes the separateness and independence of all things, and is imbued with an ethic of “value neutrality” about the phenomena it seeks to understand. Max Oelschlaeger has argued that religion is being more important in the effort to conserve life on earth than all the politicians and experts put together. His conjecture is that there are no solutions for the system causes of ecocrisis, at least in democratic societies, apart from religious narrative. Increasingly, scientists recognize the unique role of religion to address the serious problems facing human existence. “The power of religion to tackle great moral issues is clear, and clearly applicable to the environmental and social crises of the 21<sup>st</sup> century” (Gardner: 21). Before examining relationships between organized religion and environmentalism, let me briefly depict American environmental movements.

### The Varieties of American Environmentalism

[5] American environmentalism bloomed and developed in the 1960s in the context of widespread publicity about pollution and other environmental issues, but it was a product of over 100 years of collective action and organization that existed in particular historical circumstances. Environmental sociologists have identified different waves of environmentalism that appealed to different constituencies and articulated different environmental discourses. Following the classification devised by Robert Brulle, I note them here summarily in the approximate chronological order of their emergence, beginning in the 1880s: (1) preservation and conservation of nature, (2) wildlife management, (3) “reform environmentalism,” or using scientific methods and law to develop standards for a clean and healthy environment, (4) environmental justice, related to race and class, (5) “deep ecology,” which recognizes human life as embedded in the grand cosmos of nature, and urges a reduction of human impacts to optimize natural resources and biodiversity, and (6) “ecofeminism,” that emphasizes a relationship between the androcentric domination of women and the natural world (see Harper: chap. 8).

[6] Another human-environment ideological frame, known as *manifest destiny*, was virtually unchallenged in its domination of American environmental discourse from 1620 until the middle of the nineteenth century. It is a moral and economic rationale for exploiting natural resources, assuming that nature has no intrinsic value, that human welfare depends on the exploitation and development of nature, and that human inventiveness and technology can transcend any resource problem. In effect, manifest destiny assumes that the resources of nature are infinitely abundant for human use. It provided a rationale for the European conquest and development of the North American continent, and it continues to serve as the argument and discourse for several waves of countermovements opposed to the goals of

environmental movements (Brulle: 115; see also McCright and Dunlap; Meyer and Staggenborg).

### **Ecotheology: Emergence and Varieties**

[7] Notwithstanding the complex nature of beliefs about pro-environment behavior, sixty-seven percent of all Americans (active religionists and others) believe that “nature is God’s creation and humans should respect God’s work” (Biodiversity Project). Given such beliefs, thought and action about the supportive relationship between religion and environment came to be termed ecotheology (or sometimes ecospiritualism). These cultural movements had key elements connected with several variations. The basic ecotheological discourse of Western religions assumed that (1) nature is endowed with spiritual values and has a sacramental meaning, (2) humanity, as a part of nature, has a moral obligation to preserve nature, (3) religious groups that embody this ethic should be developed, along with a sacramental view of nature, and (4) these beliefs can inform action to create an ecologically sustainable society (Brulle: 229). The development of ecotheology is based on the premise that Christianity (along with Judaism) forms a “Great Code,” or master narrative within Western culture (Oelschlaeger: 9-11). There are similar religiously based narratives about nature in non-Western religions, and particularly in the religion of indigenous people around the world.

[8] Like other environmental discourses, ecotheology has various emphases and dimensions. One stems from the African-American churches in the United States, which linked a spiritual view of the environment with environmental justice movements. For instance, the first protest against a toxic landfill in North Carolina was led and organized in 1982 by a local African-American church, and the United Church of Christ sponsored an early influential empirical study of environmental racism (Bullard 1999, 1993). Another dimension, termed *creation spirituality* articulated a need for a broader and more encompassing and contemporary creation narrative. Its chief articulator, theologian Matthew Fox, advocated the need for a broader creation narrative consistent with scientific evidence, that would “overcome the dualisms of the Western worldview so that we can see creation as a whole” (cited in Oelschlaeger: 169). His writings are influential, though the controversy over them led him to leave the Roman Catholic Church.

[9] Probably the most dominant strand of ecotheology, known as *environmental stewardship* focuses on a Jewish and Christian interpretation of the biblical mandate to care for God’s creation. It still sees God as a transcendent being, and, according to an early statement “Christians who should understand the creation principle, have reasons for respecting nature, and when they do, it results in benefits to man. But let us be clear: It is not just a pragmatic attitude; there is a basis for it. We treat it with respect because God made it.” (Brulle: 232, citing Schaeffer: 76). Having become pervasive among Christian evangelicals, mainline Protestants, Roman Catholicism, and the Orthodox Churches, as well as in Jewish congregations, environmental stewardship is surely the dominant voice in American ecotheology and “faith-based” environmentalism. Many major environmental movements have welcomed such religious-based environmental advocates. For instance, reflecting on generations of environmentalists who shunned religion in environmental work, Sierra Club Executive Director Carl Pope sees this as a great mistake: “Environmentalists have made no

more profound error than to misunderstand the mission of religion and the churches in preserving the Creation” (cited in Gardner: 21). He notes that Lynn White himself looked to religion for help with environmental problems.

[10] By the 1950s and 60s ecotheology was not just a minor voice in the larger cultural discourse; Religious communities articulated the environmental/ecological implications of their fundamental doctrines and mission through a flood of visible ways. Consider some of the ways in which organized religions have expressed ecotheological:

1. The National Council of Churches (representing the mainline Protestant and Orthodox churches in the U.S.) has since the 1950s issued 133 declarations on everything from toxics to climate change, with 75% of these issued since 1985.
2. The World Council of Churches’ (WCC) longstanding concern for the “vulnerable and suffering” now extends to a suffering environment in the WCCs climate change program. In 1964, the WCC formed a FAITH-MAN-NATURE group to “stimulate . . . a better developed theology of nature and of man in relation to nature” (11).
3. In 2001, a resolution presented to the convention of the Union of American Hebrew Congregations representing Reform Judaism in North America noted that “*degraded environment*, human rights abuses and lowered labor standards, internationally and domestically” result from globalization, and that “fundamental values of equity, democracy, and *environmental protection* are at stake in the way international trade is organized and governed” (Rifkin: 86; emphasis added).
4. The Coalition on the Environment and Jewish Life (COEJL) coordinates over 150 environmental programs from Jewish groups in the U.S.; more than 90% are educational (<http://www.coejl.org>).
5. The Ecumenical Patriarch Bartholomew, symbolic leader of the 250-million-member Christian Orthodox Church (dubbed the “Green Patriarch) organized sailing seminars emphasizing water-related environmental problems of the Danube River and the Aegean, Black, Adriatic, and Baltic seas, and planned a trip on the Amazon River in 2006 (<http://www.rsesymposia.org>).<sup>1</sup>
6. The Islamic Foundation for Ecology and Environmental Sciences provides resources for use at mosques and Islamic education centers on

---

<sup>1</sup> For about a week aboard a chartered ship, scientists, theologians, policymakers, and journalists heard dozens of lectures on the aquatic region under study. The 2002 Adriatic Sea symposium included a special consultant to the U.N. Secretary General, the former head of the U.N. Environment Program, the head of the U.N. Development Programme, two Roman Catholic cardinals, the Primate of the Church of Sweden, Imams from Egypt and Syria, several ambassadors and head of non-governmental organizations, and over 40 journalists. It ended in Venice where the Ecumenical Patriarch and Pope John Paul II signed a joint declaration on environmental Protection.

environmental issues, including a newsletter called *Eco-Islam* (<http://www.ifees.org>).

7. In the U.S. the National Religious Partnership on the Environment exists as a coalition of COEJL, Evangelical Environmental Network (EEN), the National Council of Churches, and the U.S. Conference of Catholic Bishops to promote care of the environment.
8. In 1993, a professor of environmental studies at the University of Wisconsin founded the EEN which released “An Evangelical Declaration on the Care of Creation,” signed by more than 100 evangelical leaders. The EEN worked to protect and renew the Endangered Species Act, and in 2006 a virtual Who’s who of evangelical leaders signed “An Evangelical Call to Action about Climate Change,” which states: “millions of people could die in the century because of climate change, most of them are our poorest global neighbors” (<http://www.christiansandclimate.org/statement>). Also in 2006, Richard Cizek, public policy director for the National Association of Evangelicals urged change in values, life-styles, and public policies to avert disastrous change in climate. Among the project’s supporters were biologist E. O. Wilson and NASA climatologist James Hansen (Associated Press). In the past, conservative Christians who embraced that cause have met significant resistance.
9. Finally, in 2006, E. O. Wilson’s latest book, *The Creation: A Meeting of Science and Religion*, explicitly issued an invitation for religious coalitions and scientists to work together to address environmental problems in spite of their differences.

Collectively, these illustrations of care for the environment among diverse American and world religious organizations signal a new kind of environmentalism among environmental movements in the U.S. and elsewhere. It is particularly significant that many conservative and evangelical Christians are involved in this new dimension of environmentalism (through the EEN) since many were (and remain) among the most ardent opponents of environmental concern and activism.

### **The Assets of Religion for Environmental Change<sup>2</sup>**

[11] The notion that religions might be influential enough to help shift whole societies in more environmentally benign and sustainable directions might seem fanciful. But, religions can bring considerable resources to such an effort.

[12] Providing people with a sense of *meaning and purpose* is arguably one of the most powerful but least appreciated assets of religion. A sense of purpose can unify entire societies around national goals. Ritual communication has a special place in the movement to create sustainable societies because it has long had the effect of protecting the natural environment. Cultural ecologist E. N. Anderson observed that among indigenous societies

---

<sup>2</sup> This section relies heavily on Gardner: 43-53.

that have managed resources well for sustained periods, the credit often goes to “religious or ritual representation of resource management” (166). The link between ritual and environmental protection, perhaps surprising to Westerners, is understandable in view of the fundamental importance – indeed the inseparability – of spirit and nature in many indigenous traditions. Among the growing number of religious communities worldwide that are finding room within traditional religious practices for valuing the natural world is the eco-Kosher movement in American Judaism. The tradition of Kashrut not to waste could be invoked to turn Jewish consumers away from food packaging that is excessive or unrecyclable; the injunctions against animal cruelty might have special resonance in an age of livestock production where animals are raised inhumanely in confined animal feeding operations; and the injunction to take care of the body could be extended to the environment (Milgram).

[13] Beyond the capacity to provide meaning, religions carry *moral capital* in their ability to project moral authority. While not omnipotent in imposing their views, religious leader often have the ear of their congregations, and major leaders such as the Dalai Lama, the Archbishop of Canterbury, the Ecumenical Patriarch, or the Pope get broad media coverage – no small advantage in the modern cacophonous media environment. Nevertheless, the power of religious moral authority alone often falls far short of its potential. In the preparations for the War in Iraq in 2002, for example, the massive entreaties of Protestant and Orthodox denominations, religious orders, Pope John Paul II and the National Council of Churches strongly urging President Bush not to go to war. But, opinion surveys found that solid majorities of Catholics and Protestants supported the war, and that 78% of local religious leaders (ministers, rabbis, priests) had not mentioned the war to their congregations, or had done so without taking a position (Churches for Middle East Peace; Feuerherd; Pew Research Center). Even when the theological and moral consensus is much more coherently supportive of environmental protection than it was with the Iraqi war, the pronouncements of religious leaders on environmental issues is often met with silence or seeming indifference by their governments.

[14] Noting the limitations of the moral authority of religious leaders on some issues should not be taken as an argument for its general irrelevance, as the effectiveness of religious authority on issues such as the death penalty or gay marriage attests. Consistent religious leadership, particularly when combined with broader factors that reinforce its direction, can move public opinion.

[15] Finally, there is the potential impact of the sheer *number of religious adherents* in the world population. Around the world in 2005, according to the U.S. Census Bureau, Christians, Muslims, Hindus, Confucians, Buddhists, and nine other religious groups, such as Judaism, Baha’i, the Jains, and Sikhs (including indigenous religionists) comprised about 85% of the world population. In 120 countries Christians are the majority of the population, Muslims in 45 countries, and Buddhists in 10 countries. Although counting of religious adherents is problematic, what these numbers of mean is that religious organizations include large populations that can *potentially* be mobilized by “causes” of all sorts, including environmental ones. These assets (the capacity to provide meaning and purpose, moral capital, and numbers) mean that religions are often targets for partnership with secular organizations, and these work best when partner groups appreciate the unique attributes that religions can

bring to the process of change. This is increasingly the case with environmental movement organizations.

### **Religion and Environmental Work: Some Concrete Cases**

[16] In 1995, the EEN used the political power of evangelicals to save the Endangered Species Act (ESA) from being significantly weakened. In a brilliant media strategy they framed the issue as preserving the “Noah’s Ark of our day,” and charged that Congress and special interests were trying to sink it. The ESA was saved, and many give credit to the EEN for convincing conservatives that a significant religious constituency wanted to preserve species, or “God’s Creation” (Barcott). EEN is working again with an interfaith group called the Noah Alliance to protect the ESA from renewed attempts to weaken it.

[17] Interfaith Power and Light (IPL) is a successful faith-driven sustainability initiative promoting clean energy. It coordinated congregation-based programs that encourage energy conservation, the use of renewable energy, and advocacy for green energy and combating climate change. Founded in 1997 in San Francisco as Episcopal Power and Light, it was re-launched as IPL in 2001. It now has 19 state chapters (plus one in Washington DC) with more than 30 denominations and religions represented. IPL is a superb illustration of the potential for religious groups to promote change. It frames energy and climate as legitimate issues of faith, and taps into a network of congregations across the country to multiply its influence (Gardner: 78). Another organization, the Interfaith Coalition on Energy has existed in the Philadelphia area since 1982, and advises some 4,200 congregations on ways to reduce energy use. Participants in the program reduced their energy usage by an average of 10%. The Environmental Protection Agency estimates that congregations serious about reducing energy consumption could save 25-30%. A 25% energy use reduction by half of the nation’s congregations would have the same effect as removing a million cars from the roads. It would make available 13.5 billion kilowatt hours of electricity for other uses, without the construction of new power plants.

[18] The World Council of Churches (WCC) has pushed for a response to climate change since 1988, early in the scientific debate and before global warming was a public issue. It has been an uphill battle, because greenhouse gas emissions continue to rise, as does the number of people who suffer from extreme weather events, and the largest carbon-emitting nation (the U.S.) seemed largely oblivious to the problem until recently. Yet, there has been “exponential growth” of faith communities engaged with the issue. To illustrate, more than 80 people who were accredited under the auspices of the WCC attended the 11<sup>th</sup> Conference of Parties (COP) of signatories to the Kyoto protocol, which convened in Montreal, Canada in late 2005. Another 10-15 faith community representatives, accredited by environmental organizations, attended from the U.S. The attendees adopted “A Spiritual Declaration on Climate Change,” intended as input to the deliberations of political leaders and to the leaders of the world’s religious leaders to encourage them to support local congregations in efforts to address climate change. Along with several other non-governmental organizations (NGOs), the WCC was asked to make a statement during the Ministerial High-Level Segment of the COP. The organizers regularly ask the WCC to address negotiators because they count on an ethical, respectful, and strong message about the urgency of climate change from a justice perspective. The WCC’s “moral imperative” to engage the climate issue is



threefold: siding with suffering people, protecting the environment, and addressing a fundamental question of global fairness (Gardner: 88-89, 91).

[19] Religious communities and agencies have also been active for a long time in what can be broadly called “socially responsible investment” (SRI), or investing in ways that address social justice issues (for which they are well known) and also environmental protection issues. For example, in the 1970s, Muhammad Yunus, a Bangladeshi economist/banker concocted the notion of *microcredit* programs to make small loans available to poor persons, who lack credit, supplies, and other resources to start small enterprises and become economically self-sufficient. Such persons found it almost impossible to get credit from large banks and development agencies. Microcredit programs have spread rapidly to more than 58 countries and were so widely acclaimed that the originator received a Nobel Peace Prize in 2007 (Miller: 601). Such programs do not only promote social justice, but do so by encouraging small, traditional producers – by now not exclusively in third world nations – whose enterprises are typically more environmentally sustainable than the larger-scale, and more technology intensive ones typically sponsored by large banks and international development agencies. The concept received a huge boost in the late 1990s when a Microcredit Summit Campaign set a goal of serving 100 million borrowers by 2005, up from just 7 million in 1997. The campaign was largely successful, and religious agencies were a part of it. Oikocredit, founded by the WCC some three decades ago, is now the largest international private provider of microfinance services in the world, and it supplies more than \$325 million annually to hundreds of enterprises in 32 developing nations (Gardner: 139).

[20] SRI programs have a long and complex history involving religion. As early as the 17<sup>th</sup> century, Quakers banned weapon manufacturers from the investments, and, along with Methodists, avoided investments that could benefit the slave trade. SRI programs proliferated as stock markets emerged: by the 1920s, Methodists in the U.K. avoided investing in “sin stocks” involving alcohol, tobacco, gambling, and other “sin” businesses, and in 1928 a religiously-led Pioneer Fund was established to avoid such investments (Glickman and Kelly; Social Investment Forum: 1-3). By the 1970s religious leaders began to coordinate SRI investments, which made them leaders in a movement. But, it was really the Pax World Fund, an SRI mutual fund that launched the modern SRI movement. SRI typically involves three kinds of activity: screening investments for their environmental and social impact, pressuring change in corporate practice by shareholder resolutions, and investing in communities underserved by financial institutions. Until recently, religious groups dominated the movement. In 1997 in the U.K., for example, religious holdings accounted for over 50% of all ethical investments, but by 2001 religion’s shares had dropped to just 5% as secular SRI investment exploded (Gardner: 133-34). By 1984, the U.S. had \$63 billion in SRIs and that grew buoyantly in the 1990s, so that by 2003, SRIs accounted for \$2.16 trillion (Social Investment Forum: n. 1, 3). Today, faith-based investors have combined portfolios worth an estimated \$110 billion (Gardner: 134). Since it involves investing in equities and other financial instruments, SRI is largely absent from the developing world. Of the estimated \$2.7 billion in the developing nations, \$1.5 billion comes from investors in the industrial nations and most of the remainder is invested in South Africa (International Finance Corporation).

[21] The International Interfaith Investment Group in the U.K. (formally known by its playful nickname – 3iG) is one of the most hopeful agencies for leveraging religious funds to environmental and social justice causes. As it works with religious leaders and organizations around the world, the 3iG plans to offer ways for them to avoid the same morally controversial investments as other SRIs, but also to steer investors toward companies and activities in line with sustainable development, which negative screens do not do. The Anglican Bishop of London, Richard Chartres, called this a “*via positiva*” approach to religious investing that asks institutions to apply their wealth proactively in ways that help create the better world they envision.

[22] To illustrate the 3iG’s approach, consider a reforestation program in Mozambique. Spearheaded by a diocese of the Church of Sweden, it will lead groups of investors including the Church of Norway, the Anglican Church, Harvard University, and some commercial banks to provide \$32 million over 10 years to reforest an area and produce income and jobs from it (Gardner: 137). The 3iG estimates that the central institutions of religious organizations control more than \$7 trillion in assets. Committing some of these monies to SRI could create a powerful shareholder advocacy force. The 3iG is optimistic that it will be able to leverage \$1 trillion of these assets, and that involvement by religious leaders, along with regional and local groups could create a “cascade effect that would multiply the total benefit and trigger significant growth in SRI” (3iG, cited in Assadourian: 99).

[23] In 2007, when the issue of global warming may have finally reached a point of public traction and its evidences and consequences become obvious, many of the efforts of religiously-connected agencies attempted, in coordination with environmental movement organizations, to mobilize around the passage of a new American “farm bill,” to get a bill that embodies fair trade, assistance for smaller more ecofriendly farms, and nutritional education. Yet the prospects for that look politically dim indeed, and the greater likelihood is that the new farm bill will continue mainly to contain huge commodity subsidies to the largest producers. It will be wrapped in window dressing that camouflages the real function of U.S. farm bills – to subsidize large agribusiness production. In fact, as interesting as I find the above illustrations, it is important to note that they merely scratch the surface of the depth and seriousness of the accumulated human assault on nature, as well as the powerful forces that drive exponential growth or rapacious and unsustainable consumption.

### **Parallel Discourses: Sacred and Secular Eschatology**

[24] It should be clear that secular scientists and environmentalists can join forces with religious people and agencies about overarching common interests, however derived and legitimated. Nevertheless, I will argue that there are some ironic and curious parallels between the discourses and thought forms of secular environmental scientists/activists and traditional theological (or biblical) narratives about the present, with all its problems and corruptions and long term futures – in other words, with how the human experience on the earth will turn out (or end): eschatology.

#### *Sacred Eschatology*

[25] To Christians the book of Revelation is the most familiar biblical writing about prophecy, the apocalypse, and “end times,” though one could illustrate the parallel with

Jewish prophetic writings (e.g., Jeremiah, Ezekiel, Daniel). Analogous prophetic writings exist in the Quran, but I am not aware of applicable parallels in Hinduism or Buddhism.

[26] Let me begin by setting aside a popular but highly misleading understanding of the book of Revelation, which takes the language of the book quite literally. According to this understanding, problems and corruptions of the natural world and human behavior will result in amplified natural disasters (floods, earthquakes, tornados), destructive human wars (Armageddon), and rule by a worldwide but demonic empire of the anti-Christ. A small number of the faithful will miraculously be transported to reside with God in the rapture (“beamed up,” one supposes) to be with God. Just before mutual destruction seems immanent, Christ will return and institute a Jerusalem-based millennium, and a glorious Kingdom of God on earth. Influenced by this scenario, a popular activity is viewing contemporary environmental and escalating human problems as “signs” of the approaching “end-times” (Rossing). While there is no agreement about the details for those who take this as a reasonable hermeneutic of the book of Revelation, there is enough “raw material” in the intensifying problems in contemporary natural and socio/political events to make it plausible! But to do so, one needs to believe that God is so disgusted with the corruptions of the earth and humans that God would instigate World War III and natural cataclysms to destroy everything.

[27] *The problem is that all this is wrong.* The book of Revelation was written about the perceived utter corruption of the Roman Empire, using symbolic language readily understood by first century Christian communities. It has absolutely nothing to do with contemporary events. This end-times theology was popularized by English evangelist John Nelson Darby in the 1830s, and written into the Schofield Reference Bible in 1909. The Bible, in fact, includes little about the rapture, the anti-Christ, or Jesus setting up an earthly throne in Jerusalem, and nothing that supports the literal end-times scenario of this theology (Rossing). One could dismiss all this, as quirky invented theology, but in the U.S. it has become quite popular (with a profitable series of books and videos to match; see LaHay and Jenkins; Lindsey; Bakker; Hagee, among others). More seriously, it has a growing and dangerous influence on public policy, particularly in the Middle East (Marty: 6). But that is another story.

[28] Most Biblical scholars argue that the book of Revelation is not written to be taken literally by its original readers as predicting future events. It uses symbolism borrowed extensively from Israelite prophetic writings. Today we use the term “apocalypse” to mean an actual disaster, but then, apocalypse meant “unveiling,” or pulling back the curtain to see some truth about the world (Collins). Apocalypses were easy for ancient readers to understand because they were familiar with the symbolism, just as we are familiar with science fiction, Dracula, and horror movies today. Revelation takes the readers on a sacred visionary journey, just as one hundred years ago Charles Dickens wrote about an apocalyptic symbolic journey in which the miserly Scrooge is taken on a visionary tour of his life. In the final frame of that narrative, a reformed Scrooge celebrates Yuletide in the warmth and love of the Cratchit household. The book of Revelation was about avoiding the corruptions of Rome and living by a new vision of the “city of God,” or the New Jerusalem. It was a counter-message to the Roman Empire’s theology of Victory (or Nike). The book of Revelation, along with the books of Jeremiah, Ezekiel, and Daniel, were intended as timely

warnings that articulated the need for transformation and change with a new vision of life, not as empirical predictions of future disaster (Rossing: 81-84, 108). There were three elements: (1) The world, people, and the dominant institutions have been on the wrong paths, (2) a warning of troubles and disasters ahead, and (3) the need for a positive vision and change to avoid disasters.

*Environmental Eschatology*

[29] The depictions of the state of the global environment are generally grim whether they focus on energy problems associated with the growing global scarcity of fossil fuels, the global diffusion of unsustainable natural resources associated with the spread of Western style consumerism, particularly on basic resources like fertile soil and water, the largest wave of species extinction since the Cenozoic era, the impact of the human ecological footprint as population increases, progressively increasing human hunger, poverty, and disease, or on the master problem of our times: global warming that alters the geophysical support system of the planet. Indeed, that the dimensions of the earth's problems are uniformly severe and challenging represents the dominant view of the world's official scientific bodies, including prestigious ones such as the Royal Society of London, the U.S. National Academy of Sciences, the World Meteorological Organization, and international bodies of physical scientists, all of which have issued official statements about the gravity of human threats to the global environment. As an illustration, consider the 2007 report released by the United Nations Environment Programme, which concludes that the "human population is now so large that the amount of resources needed to sustain it exceeds what is available at current consumption patterns" and that population growth and excessive consumption have stressed the planet (*New York Times*). But such reports are mainly descriptive empirical catalogues of problems and devote little attention to ways of avoiding environmental "troubles." I would, therefore, not call them eschatologies. There is, however, a significant body of contemporary secular reports about the environment that largely envision a dismal future for the world and contain much more emphasis on ways of avoiding "worst case" outcomes and salvaging brighter futures. I call these *secular environmental eschatologies* and they are comparable to sacred eschatologies.

[30] In 1972, *The Limits to Growth* concluded that within the next century exponential growth in population, production, and consumption would virtually exhaust the world's critical resources, and with parallel growth in pollution would lead to a general collapse in human civilizations. Conducted by a group of scholars and computer modelers known as the Club of Rome, the report was widely read and criticized from many directions. Marxists, for example, charged that the limiting economic growth would betray the needs of the world's poor for better lives and camouflaged the real problem (class conflict). From another direction, capitalists noted that limiting growth would sharply reduce profits and work contrary to widely accepted (neoliberal) policies for trade and development. In true prophetic tradition, *The Limits to Growth* was pessimistic but not an exercise in complete fatalism. A durable work that was updated frequently, its most recent update (2004) ends with two chapters entitled, "Transitions to a Sustainable System" and "Tools for the Transition to Sustainability" (Meadows, et al.). Though insightful, the authors approach their suggestions for avoiding worst case outcomes with caution. Why? Because "they require the

use of words that do not come easily from the mouths or word processors of scientists . . . (and are) . . . considered too ‘unscientific’ to be taken seriously in the *cynical* public arena” (emphasis added). What are the tools they approach so cautiously? They are: visioning, networking, truth-telling, learning, and loving; and the authors elaborate on the relevant meaning of each in avoiding environmental catastrophe (Meadows, et al. 2004: 271).

[31] Cornell University scientist David Pimentel and colleagues collected data about the human future from various sources and paint an equally gloomy picture, with population growth as a critical underlying driver of other problems. At its current growth rate, a world population of more than 6.3 billion will double in the next 50 years. As it does so, all vital resources must be divided among increasing numbers of people, and per capita availability will decline to unacceptably low levels. Maintaining prosperity and a quality life and personal freedoms will be imperiled (Pimentel and Pimentel: 145-46; Pimentel et al.). World hunger and malnutrition will grow from their present 3 billion people (in terms of both caloric and micronutrient deficiencies), the highest number and proportion ever reported (World Health Organization). Increasing production will reduce soil fertility and water resources will be in shorter supply and more polluted. At current rates of usage, world fossil fuel resources of oil and gas will last 50 years or so, and coal for 100 years, and foreseeable technologies that produce renewable energy can only produce a small fraction of current world energy consumption (Campbell; Pimentel and Pimentel: 154-56; Roberts). Biodiversity is declining at unprecedented rates as species become extinct. Causes include climate change and habitat degradation as human systems (transportation, communities, agriculture, including aquaculture) expand into “wild” areas. Declining biodiversity is diminishing the biological (and genetic) heritage of the planet, which is significant not only for aesthetic (and spiritual!) reasons, but for practical ones as well. Humans have no technologies that can substitute for the food, medicines, and diverse ecological or economic services that plant, animal, and microbe species provide. For example, one third of the human food supply depends either directly or indirectly on effective insect pollination. Including pollination, the broader economic benefits of global biodiversity were estimated at nearly \$3 trillion O’Toole; Pimentel and Pimentel: 157). In 1994, the U.S. National Academy of Science, along with 57 other national academies of science, stated, “Humanity is approaching a crisis point with respect to the interlocking issues of population, natural resources, and sustainability” (13).

[32] How do Pimentel and his colleagues recommend that we avoid such a global calamity? They recommend that the current 6.3 billion and growing world population be reduced to an *optimum* 2 billion. If the world agreed on and adopted a 2 child per couple policy it would take about 70 years before the world population *stabilized* at 12 billion. But a population policy ensuring that each couple produced an average 1.5 children would achieve the goal of reducing the world’s population to approximately 2 billion in about 100 years. Their suggestion of 2 billion is not arbitrary; it is based on a European standard of living for everyone coupled with sustainable use of natural resources. They emphasize that this transformation should take about a century: more rapid population reduction would result in intense social, economic, and political problems, but continued growth to 10 or 12 billion people would result in more dire world-wide catastrophic health and environmental problems, with accompanying economic and political tensions (Pimentel and Pimentel: 159-60). According to Pimenta and Pimentel:

With a democratically determined population control policy that respects basic individual rights, coupled with sound resource conservation policies, plus the support of science and technology to enhance energy supplies and protect the integrity of the environment, an optimum population of 2 billion for the earth can be achieved. With a concerted effort by everyone, the well-being of future generations can be secured within the 21<sup>st</sup> century. Then most individuals will be free from poverty and starvation and able to live in an environment capable of sustaining their lives with dignity. If the human population continues to increase and exhaust the earth's natural resources, nature will control our numbers by disease, hunger, malnutrition, and violent conflicts over resources. The difficult decisions are ours to be made to prevent the imbalance between human numbers and food security from further escalating (161-62).

[33] More popularly known, Jared Diamond utilized a broad historical and cross cultural perspective to chronicle a number of cases of the *collapse* of communities and civilizations for demographic, ecological, and resource depletion reasons. He notes that after establishment and growth, the eventual collapse of human societies is the most frequent but not inevitable outcome. People often ask Diamond whether he is optimistic or pessimistic about the future of the contemporary social world. He answers:

. . . I'm cautiously optimistic. We face big problems that will do us in if we don't solve them. But we are capable of solving them. The risk we face isn't that of an asteroid collision beyond our ability to avoid. Instead our problems are of our own making, and so we can stop making them. The only thing lacking is the necessary will power. We can learn from understanding the problems of remote places and times. [Past societies] didn't have that option. Knowing history, we are not doomed to repeat it (2002: A55).

[34] Sing C. Chew, less well known outside of academia, assembled more systematic research demonstrating cyclical patterns in the growth and decline of connections between human communities, empires, and civilizations since the Bronze Age, such as Egypt, Mesopotamia, and Harappa (in the Indus river valley), and Rome. Such collapses can alter the socio-economic developmental trajectories of regional and world transformations. He argues that the facts of history suggest that after a period of growth and development, such downturns are virtually inevitable, though the periodicity in terms of years is quite variable. Historians and archaeologists term these downturns "dark ages," and while aptly describing the collapse of complex civilizations, that term is no longer in favor because it does not do justice to the actual vitality and creativity manifest in the long struggles to rebuild, as amply illustrated by the European Medieval period.

[35] Canadian political scientist Thomas Homer-Dixon, renown for sophisticated analyses of regional and global problems, produced another work about the present and future of the emerging global order. He assembled persuasive analyses and data that depict the "synergistic" impact of seemingly separate large forces at work today, such as energy shortages, population growth and growing expectations for affluent lifestyles, stressed food-production resources (both terrestrial and oceanic), global environmental change (such as

global warming, the unprecedented decline in biodiversity, and changes in oceanic nutrient and thermal currents), as well as political instability and terrorism and the persistently widening gap between the rich and poor around the world. The joint (synergistic) effects of such pervasive trends indicate likelihood of dramatic negative changes in the future for human and human-environment relationships, whether gradual or more sudden. Yet like other analysts, he writes about ways of surviving and minimizing catastrophes that seem inevitable, indicated by the very title of his work: *The Upside of Down: Catastrophe, Creativity and the Renewal of Civilization*.

[36] Homer-Dixon noted that some things and systems can survive and be renewed through breakdown, a phenomena that he labeled “catagenesis.” Simple, rigid, and inflexible systems – regardless of size – do not deal well with change, challenges, or stress, but *complex adaptive systems* can, and illustrations include tropical forests, some private corporations, human societies, and even individual people. Complex adaptive systems not only have more “parts” but a wider range of potential behaviors than simple or rigid systems (22). Moreover, when an uncontrollable process of breakdown is beginning, there are “moments of contingency,” or choice, when small things matter a lot. They can nudge us down one path rather than another, when the past is vanishing and the way ahead is “foggy” (as in Robert Frost’s poem, “The Road Not Taken”). In moments of contingency, actions and futures that were once unthinkable – because they were too wonderful or horrible – are suddenly possible. Such moments may be exploited for ill, but there may be times when chaos can be converted into renewal and renaissance (277-78). But, though we have the ability to choose our future, we dare not just wait and hope for the best outcome:

. . . we have to recognize what kinds of forces we’re up against. . . [If we’re going to have the best chance of following a positive path,] we must take four actions. First, we must reduce as much as we can the force of the underlying tectonic stresses in order to lower the risk of synchronous failure. . . Second, we need to cultivate a prospective mind so we can cope better with surprise. Third, we must boost the overall resilience of critical systems like our energy and food supply networks. And fourth, we need to prepare to turn breakdown to our advantage when it happens – because it will (281).

[37] To summarize, these cases of secular/scientific analyses of world problems and futures are quite similar to the classic pattern of Jewish and Christian eschatological thought: Most of their analyses explain how people and dominant institutions have been on the wrong paths, and they give warnings of great disasters and troubles ahead. They all warn that a collapse of today’s world system and integrated world economy would be on a vastly larger scale than the collapse of earlier civilizations, but they end by envisioning ways to avoid disasters. Their views about avoiding disaster are demanding and difficult “bitter pills” that violate the established ways of living, belief, and authority. Those of Pimental are especially so, but only, I argue, because his recommendations are more explicitly described than the others. Consider what the reactions of North Americans would be to concrete ways of dealing with the end of the fossil fuel era, such as consuming fewer goods and services, buying more local products (rather than from a global marketplace), limiting the use of private cars, reinvesting in – and using – mass transit systems, reversing diffuse suburban community patterns and moving closer to work, eating less meat, and using air conditioners

less in hot weather. But such suggestions are perhaps not more difficult and outrageous for the “comfortable classes” and dominant powers than were the religious reforms urged by ancient prophets like Jeremiah, Ezekiel, or John of Patmos. But the suggestions of contemporary environmental thinkers would not only offend the dominant culture as did biblical prophetic writing, but would also oppose the efforts of powerful and well funded organizations whose purpose it is to spread Western style consumerism around the world – the marketing and advertising industries, for example. Others have perceived similar patterns in Western thought and discourses. Social theorists Max Horkheimer and Theodore Adorno described a “dialectic of enlightenment,” envisioning a passage “through purgatory ending in glimpses of radiant futures,” even though they intended a critique of the consequences of Enlightenment era “reason.” (see Hardt and Negri: 47).

### The “Sacralized Nature” of Scientists and Secular Thinkers

[38] I have described in some depth how religious people and leaders have been shaped by their encounter with environmental issues and the emergence of ecotheology and explored some parallels between biblical and secular eschatological discourses. Let me end by briefly turning the coin to note in the exchange how scientists and other secular spokespersons have been shaped by religion. First, some non-scientists: Maurice Strong, the Canadian General Secretary for the 1992 U.N. sponsored “World Summit on Environment and Development” said: “protecting nature is a sacred trust, inseparable from the quest for Justice and Peace” (quoted in Bron: 998). More surprising, the former Soviet leader Mikhail Gorbachev articulated his own pantheistic form of earthen spirituality: “I believe in the cosmos . . . *nature is my God. To me Nature is Sacred*” (quoted in Bron: 998).

[39] Equally surprising is that some scientists, particularly some having no belief in traditional theistic religion, rely on sacred metaphors to express their awe at the wonders of the universe and respect for life. In the early 1990s, a statement issued a group of prominent scientists that included Stephen Jay Gould, Hans Bethe, Stephen Schneider, and Carl Sagan captured the sentiment.

As scientists, many of us have had profound personal experiences of awe and reverence before the universe. We understand that what is regarded as sacred is more likely to be treated with care and respect. Our planetary home should be so regarded. Efforts to safeguard and cherish the environment should be infused with a vision of the sacred (quoted in Bron: 998).

[40] Do such views qualify as religious? Perhaps not, in the theistic sense, even though they exhibit a sacralized view of nature. But what practical difference does make? I have demonstrated that religious people and institutions and “secular” environmentalism, along with the science that legitimates it, can fruitfully cooperate in common projects and exhibit some deep similarities in thought patterns. Deliberately emphasizing conflict between religion, environmentalism, and environmental science could magnify some counterproductive rigidities and inflexibilities discussed by Homer-Dixon that would make positive futures less likely.



## Bibliography

Achtemeir, Paul, general editor

- 1985 *Harper's Bible Dictionary*. New York: Society of Biblical Literature, HarperCollins.

Adherents

- 2005 "Major Religions of the World Ranked by Number of Adherents." [http://www.adherents.com/Religions\\_by\\_Adherents.html](http://www.adherents.com/Religions_by_Adherents.html).

Anderson, E. N.

- 1996 *Ecologies of the Heart: Emotion, Belief, and Environment*. New York: Oxford University Press.

Assadourian, Erik

- 2005 "Socially Responsible Investing Spreads." *Vital Signs 2005*, A publication of the Worldwatch Institute. New York: W. W. Norton.

Associated Press

- 2007 "Faith, Science Groups Team Up on Warming." *Omaha World Herald* (January 18): 9A.

Bakker, Jim

- 1998 *Prosperity and the Coming Apocalypse*. Nashville: Thomas Nelson.

Barbour, Ian G.

- 1997 *Religion and Science: Historical and Contemporary Issues*. San Francisco: Harper San Francisco.

Barcott, Bruce

- 2001 "For God So Loved the World." *Outside* 26, 3: 84-96.

Biodiversity Project

- 2001 *Building Partnerships with the Faith Community: A Resource Guide for Environmental*. Madison: Biodiversity Project. <http://www.biodiversityproject.org/spiritguide.pdf>.

Boyd, H.

- 1999 "Christianity and the Environment in the American Public." *Journal for the Scientific Study of Religion* 38: 36-44.

Bron, Taylor

- 2004 "A Green Future for Religion?" *Futures* 36: 991-1008.

Brulle, Robert

- 2000 *Agency, Democracy, and Nature*. Cambridge: MIT Press.

Bullard, Robert D.

1990 *Dumping in Dixie: Race, Class, and Environmental Quality*. Boulder: Westview

Bullard, Robert D., editor

1993 *Confronting Environmental Racism: Voices from the Crossroads*. Boston: South End.

Campbell, Colin

1997 *The Coming Oil Crisis*. New York: Multi-Science Publishing Company & Petroconsultants S. A.

Carroll, John E.

1988 "Limitations of Western Science." In *Ecology and Religion: Scientists Speak*. Edited by John Carroll and Keith Warner. Quincy: Franciscan.

Chartres, Richard

2005 Address to 3iG Inaugural Conference (April 11-13). <http://www.arcworld.org/news.asp?pageIDD=73>.

Chew, Sing

2001 *World Ecological Degradation: Accumulation, Urbanization, and Deforestation*. Lanham: AltaMira /Roman & Littlefield.

2002 "Globalisation, Ecological Crisis, and Dark Ages." *Global Society: Journal of Interdisciplinary Relations* 16: 334-56.

Churches for Middle East Peace

2002 "U. S. Church Leaders Urge U.S. to Avoid military Action Against Iraq." Press release (September 12).

Coalition on the Environment and Jewish Life

n.d. "Seeds." <http://www.coejj.org/programbank/viewprog.php>.

Collins, John J.

1985 "Apocalyptic Literature." Pp. 35-36 in *Harper's Bible Dictionary*. Edited by Paul Achtemeir. New York: Society of Biblical Literature, HarperCollins.

Dawkins, Richard

1987 *The Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe Without Design*. New York: W. W. Norton.

2006 *The God Delusion*. New York: Houghton Mifflin.

Diamond, Jared

2002 "Lessons from Lost Worlds." *Time Magazine* 160 (August 26): A54-55.

2003 "The Last Americans." *Harper's Magazine* (June 2003): 34-51.

2004 *Collapse: How Societies Choose to Fail or Succeed*. New York: Viking.

Eckberg, D., and T. Blocker

- 1989 "Varieties of Religious Involvement and Environmental Concerns: Testing the Lynn White Thesis." *Journal for the Scientific Study of Religion* 28: 507-17.

Feuerherd, Joe

- 2003 "Papal Envoy, President Dialogue and Disagree." *National Catholic Reporter* (March 14).

Gardner, Gary T.

- 2006 *Inspiring Progress: Religions' Contributions to Sustainable Development*. New York: W. W. Norton & Company.

Glickman, Marshall, and Marjorie Kelly

- 2004 "Working Capital: Can Socially Responsible Investing make a Great Leap Forward?" *E Magazine* (March/April): 26-38.

Greeley, Andrew

- 1993 "Religion and Attitudes Toward the Environment." *Journal for the Scientific Study of Religion* 32: 19-28.

Guth, James, et al.

- 1993 "Faith and the Environment: Religious Beliefs and Attitudes on Environmental Policy." *Journal for the Scientific Study of Religion* 32: 373-82.

Hagee, John

- 1999 *From Daniel to Doomsday: The Countdown Has Begun*. Nashville: Thomas Nelson.

Hardt, Michael, and Antonio Negri

- 2000 *Empire*. Cambridge: University of Massachusetts Press.

Harper, Charles L.

- 2007 *Environment and Society: Human Perspectives on Environmental Issues*. Fourth Edition. Upper Saddle River: Pearson Prentice Hall.

Harper's

- 2003 "The Last Americans." *Harper's Magazine* (June): 34-51.

Homer-Dixon, Thomas

- 2006 *The Upside of Down: Catastrophe, Creativity, and the Renewal of Civilization*. Washington, DC: Island.

Horkheimer, Max, and Theodore Adorno

- 1972 *The Dialectic of Enlightenment*. New York: Herder and Herder.

Interfaith Center on Corporate Responsibility

- n.d. <http://www.iccr.org>.

International Interfaith Investment Group (3iG)

n.d. *The Definition of a Good Investment* (Brochure). Manchester, U.K.

International Finance Corporation

2003 *Towards Sustainable and Responsible Investment in Emerging Markets*. Washington, DC.

Kanaby, C., and F. Willits

1993 "A Greening Religion? Some Evidence from a Pennsylvania Sample." *Social Science Quarterly* 74: 674-83

LaHay, Tim, and Jerry Jenkins

1986 *Left Behind: A Novel of Earth's Last Day*. Wheaton: Tyndale House.

Lindsey, Hal

1970 *The Late Great Planet Earth*. Grand Rapids: Zondervan.

Marty, Martin

2003 "Peddlers of the Ultimate Axis of Evil." *Context* (February 15).

McCright, Aaron, and Riley E. Dunlap

2000 "Challenging Global Warming as a Social Problem: An Analysis of the Conservative Movement's Counterclaims." *Social Problems* 47, 4: 499-522.

Meadows, Donella, Dennis Meadows, Jorgen Randers, and William Behrens III

1972 *The Limits to Growth*. Washington DC: New American Library.

Meadows, Donella, Jorgen Randers, and Dennis Meadows

2004 *Limits to Growth: The 30-Year Update*. White River Junction: Chelsea Green.

Meyer, David, and S. Staggenborg

1996 "Movements, Countermovement, and the Structure of Political Opportunity." *American Journal of Sociology* 101, 6: 1628-60.

Milgram, Goldie

n.d. "Eco-Kosher: Jewish Spirituality in Action." <http://www.regoldie.com/eco-kosher.html>.

Miller, C. Tyler, Jr.

2005 *Living in the Environment*. Fourteenth Edition. Pacific Grove:Thompson/Brooks Cole.

*New York Times*

2007 "U.N. Warns Human Numbers Stressing Planet." *Omaha World Herald* (October 26): 4A.

Oelschlaeger, Max

1994 *Caring for Creation*. New Haven: Yale University Press.

O'Toole, C.

1993 "Diversity of a Native Bees and Agroecosystems." Pp 169-96 in *Hymenoptera and Biodiversity*. Edited by J. LaSalle and I. Gault. Wallingford, U.K.: CAB International.

Pew Research Center for the People and the Press

2003 "Different Faiths, Different Messages: Americans Hearing About Iraq From the Pulpit, But Religious Faith not Defining Opinions." Survey Report (March 19).

Pimentel, D., O. Bailey, P. Kim, E. Mullaney, J. Calabrese, F. Wallman, F. Nelson, and X. Yao

1999 "Will the Limits of the Earth's Resources Control Human Populations?" *Environment, Development, and Sustainability* 1: 19-39.

Pimentel, D., and M. Pimentel

2003 "World Population, Food, Natural Resources, and Survival." *World Futures* 59: 145-67.

Rifkin, Ira

2004 *Spiritual Perspectives on Globalization: Making Sense of Economic and cultural Upheaval*. Woodstock: Skylight Paths Publishing.

Roberts, Paul

2004 *The End of Oil: On the Edge of a Perilous New World*. New York: Houghton Mifflin.

Rossing, Barbara

2004 *The Rapture Exposed: The Message of Hope in the Book of Revelation*. New York: Basic Book.

Sagan, Carl

1980 *Cosmos*. New York: Random House

Schaeffer, Francis

1970 *Pollution and the Death of Man: The Christian View of Ecology*. Wheaton: Tyndall House.

Sherkat, Darren, and Christopher Ellison

2007 "Structuring the Religion-Environment Connection: Identifying Religious Influences on Environmental Concern and Action." *Journal for the Scientific Study of Religion* 46: 71-85.

Shibley, M., and J. Wiggins

- 1997 "The Greening of Mainline American Religion: A Sociological Analysis of the Environmental Ethics of the National Religious Partnership for the Environment." *Social Compass* 44: 333-48.

Social Investment Forum (SIF)

- 2006 "2005 Report on Social Responsible Investment Trend in the United States: A Ten Year Review." Washington DC.

U.S. Environmental Protection Agency (EPA)

- n.d. Energy Star Program "Congregations."  
[http://www.energystar.gov/index.cfm?c=small\\_business.sb\\_congregations](http://www.energystar.gov/index.cfm?c=small_business.sb_congregations).

U.S. National Academy of Science

- 1994 *Population Summit of the World's Scientific Academies*. Washington, DC: National Academy of Sciences Press.

White, Lynn, Jr.

- 1967 "The Historical Roots of our Ecologic Crisis." *Science* 155 (March 10): 1203-7.

Wilson, E. O.

- 1998 "The Return to Natural Philosophy." In *Ecology and Religion: Scientists Speak*. Edited by John Carroll and Keith Warner. Quincy: Franciscan.
- 2006 *The Creation: An Appeal to Save Life on Earth*. New York: W. W. Norton.

World Council of Churches

- 1964 MFN Papers #1.

World Health Organization

- 1996 "Micronutrient Malnutrition – Half the World's Population Affected." WHO Press Release #78.

Wuthnow, Robert

- 2005 *America and the Challenges of Religious Diversity*. Princeton: Princeton University Press.