

Creation Care

Environmental Stewardship
for the Church of the Nazarene



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Nazarene Compassionate Ministries
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Environmental Stewardship (Creation Care)
Guidelines for the
Church of the Nazarene Constituency

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We recommend that this document be circulated widely among pastors, youth leaders, compassionate ministries coordinators, and families for the purpose of discussing intelligently and implementing the serious matters herein contained at home, at work, and in the ministry of the church.

These guidelines have been prepared to inform accurately our worldwide constituency on the environmental issues facing our world, and our individual and collective responsibilities to be diligent stewards of the Earth and its resources, as well as to minister effectively and compassionately to those whose lives are impacted by environmental irresponsibility.

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Preface

The following chapters have been compiled in an effort to educate Nazarenes about the serious problems the earth is facing in regards to environmental degradation as well as the biblical basis for Christian stewardship of the earth. Caring for the earth is not about politics, personal preference, or “tree hugging.” Creation care is not optional for Christians; it is our biblically mandated responsibility. It is our privilege and can be a joy, not a burden.

In Chapter 1, Old Testament scholar, Dr. Laurie Braaten gives the biblical basis for creation care—why we do what we do. Dr. Mike Mooring follows with a chapter that is close to NCM’s heart—how destroying the earth affects people, especially the poor. In chapters 3 and 4, Jonathan Twining, director of Marah International, a Christian environmental organization, discusses how Christians can care for creation both individually and as the Church. We conclude with several encouraging stories of success.

Following these chapters are several appendices, designed to help you learn more about caring for creation, from learning new terms to recommending books you can read on creation care.

From start to finish, we have one goal in mind: to inspire Nazarenes to learn about how to care for the earth. We hope this document will inspire our people to begin or to continue to care. We would like feedback from you as to how helpful this resource is. Please let us know by emailing Mindy Hancock, mhancock@nazarene.org. For more copies of this document, email Mindy or see our website, www.ncm.org.

Introduction

In the beginning, God created the heavens and the earth; God went on to create human beings to share His joy in His marvelous creation. With the Fall came the twisted distortion of God's commission to be stewards of the Earth; human beings came to understand this to mean that we were to dominate the creation and use it to serve our own ends.

Yet, the creation account does not represent an enormous Christmas gift to careless children; we must never give in to the temptation to think that if we break this gift, God, our Heavenly Father will get us a new one. The Earth is not like that. It isn't a cheap commodity; it's the unique and marvelous result of our great God's plan. God loves His good creation, and sent His son to reconcile *all of creation* to Himself (Col. 1:19-20). The Earth is not ours to trash and plunder as we see fit. We were given the solemn commission to be stewards of the Earth, to care for it and treat it with the love and respect it is due.

The tragic reality is that most people in the world abuse the earth without even knowing it. Ignorance is one thing—willful ignorance is quite another. If we are to take God's commission seriously to be good stewards, we must start by being informed.

The following facts are compiled from the Evangelical Environmental Network and the Environmental Protection Agency. They represent the reality that drives NCM to educate the Church of the Nazarene about responsible stewardship of the earth. Keep these facts in mind as you read the chapters to come. For a more complete presentation of the information, see Appendix 2.

Air Pollution:

- Some sources: factories, power plants, dry cleaners, cars, buses, trucks, and windblown dust and wildfires.
- Threatens the health of human beings, trees, lakes, crops, and animals, as well as damage the ozone layer and buildings.
- Causes haze, reducing visibility in national parks and wilderness areas, and smog particularly in big cities.
- Contributes to acid rain, climate change, global warming, ozone depletion, and all the health risks that go along with them.

Statistics:

- More than one in three Americans live in areas with unhealthy air, and in many areas it is getting worse, especially in poorer neighborhoods. Nitrogen oxides, which form smog, have increased 11% between 1970 and 1997. Sulfur dioxide emissions, which results in fine particulate pollution or soot, increased in 1996-98 to more than 9% over 1995 levels.
- Recent studies have linked air pollution to:
 - the risk of dying from cancer;
 - harming the blood vessels of healthy individuals;
 - low birth weight, premature births, stillbirths and infant deaths;
 - healthy, active children becoming 3-4 times more likely to develop asthma;

- measurable lung damage in healthy children, which could lead to lung disease.
- Estimates are that soot results in 15,000 premature deaths every year.
- Smog and soot hit asthma sufferers the hardest. As air pollution has increased, so have asthma cases - by more than 60% since 1980. Between 1985 and 1995 there was a 45.3% increase in asthma deaths.
- The projected total yearly cost of asthma in the U.S. was estimated to double from \$6.2 billion in 1990 to \$14.5 billion in 2000. ¹
- One out of every three asthma victims is a child.
- Air pollution causes other damage to creation, including forest damage from acid rain, ozone eutrophication (overfertilization from nitrogen) of lakes and ponds, loss of fish and other aquatic species from acidification, and reproductive failures caused by mercury in fish and in birds that eat fish.

Global Warming:

Global warming means that the earth's temperature is gradually getting higher. Human activity contributes to this change through the buildup of heat-trapping greenhouse gases.

Rising global temperatures are expected to:

- Raise sea level.
- Change precipitation and other local climate conditions, which results in the kind of major flooding that takes lives, causes water-borne disease to spread, and destroys local economies.

Changing climate conditions could:

- Alter forests, crop yields, and water supplies.
- Affect human health, animals, and many types of ecosystems.
- Cause deserts to expand into existing rangelands.
- Reduce agricultural output in many poorer countries significantly.
- Affect poorer countries the worst. They are much less able to withstand the devastation caused by extreme weather events, and climate change is likely to increase such events. For example, global warming could increase the number of people impacted by flooding by 20-50 million.
- Increase the likelihood of environmental refugees and violent conflicts.
- Negatively impact the American poor as well. Although the U.S. will likely have the resources to adapt to the impacts of global warming, the poor in the U.S. will also suffer disproportionately. For example, large cities in the U.S. may experience, on average, several hundred extra deaths per summer.
- Up to 37% of God's land-based species could be committed to extinction by 2050, making global warming the largest single threat to biodiversity.

Health issues:

- Health effects due to extremely high temperatures.
- Increased concentrations of ozone at ground level.

¹ Statistic from http://www.ncqa.org/somc2001/asthma/somc_2001_asthma.html

- Increased risk of infectious diseases. Hundreds of millions of people will be at increased risk of malaria, dengue fever, yellow fever, encephalitis, and other infectious diseases.
- An additional 80-90 million poor people could be at risk of hunger and malnutrition later in the 21st century because of the impact on agriculture.

The most direct effect of climate change would be the impacts of hotter temperatures themselves. Extremely hot temperatures increase the number of people who die on a given day for many reasons: People with heart problems are vulnerable because one's cardiovascular system must work harder to keep the body cool during hot weather. Heat exhaustion and some respiratory problems increase.

Higher air temperatures also increase the concentration of ozone at ground level. The natural layer of ozone in the upper atmosphere blocks harmful ultraviolet radiation from reaching the earth's surface; but in the lower atmosphere, ozone is a harmful pollutant. Ozone damages lung tissue, and causes particular problems for people with asthma and other lung diseases. Even modest exposure to ozone can cause healthy individuals to experience chest pains, nausea, and pulmonary congestion. In much of the nation, a warming of four degrees (F) could increase ozone concentrations by about 5 percent.

Global warming may also increase the risk of some infectious diseases, particularly those diseases that only appear in warm areas. Diseases that are spread by mosquitoes and other insects could become more prevalent if warmer temperatures enabled those insects to become established farther north; such "vector-borne" diseases include malaria, dengue fever, yellow fever, and encephalitis. Some scientists believe that algal blooms could occur more frequently as temperatures warm — particularly in areas with polluted waters — in which case diseases such as cholera that tend to accompany algal blooms could become more frequent.

From <http://www.epa.gov/>

Water Pollution & Water Scarcity:

- Over one billion people still lack access to safe water, and nearly two billion lack safe sanitation. *More than three million people still die every year from avoidable water-related disease.*
- Global water consumption rose sixfold between 1900 and 1995—more than double the rate of population growth—and continues to grow rapidly as agricultural, industrial, and domestic demand increases.
- The majority of the world's population lives near and depends on freshwater environments, with most inland cities lying adjacent to a river or lake. In addition to being biologically rich, freshwater systems play a vital role in the lives of many people, providing a source of water, food, and employment. About 6 percent of the world's fish catch, or 7 million metric tons per year, come from rivers and lakes, as well as the bulk of the world's irrigation water.
- More than 40 percent of the world's population lives in conditions of water stress. This percentage is estimated to grow to almost 50 percent by 2025.
- Of the 19 countries around the world currently classified as water-stressed, more are in Africa than in any other region.

Oceans:

Global Warming and commercial fishing are two of the main sources for concern regarding the world's oceans.

- Oceans occupy 70% of the earth's surface and are home to over 90% of all life on earth.
- Seafood is the primary source of protein for many coastal people. Worldwide, about 700 million persons are directly dependent upon fisheries for food.
- Nearly one third of the world's fisheries have collapsed or are near collapse because of overfishing. Nearly half of the world's fisheries are being fished at their maximum level.
- Each year garbage dumped in God's oceans kills large numbers of sea birds, sea turtles, and marine mammals as they eat it or become entangled in it.
- The poor living in coastal communities - the least able to deal with the multiple harmful consequences of global warming - will be the hardest hit. The consequences will be dire.
- Increases in atmospheric temperature from global warming may slow or shut down the Atlantic's Gulf Stream, causing reductions in sea-surface and air temperatures over the North Atlantic and northern Europe.
- Coral reefs harbor more than 25% of all known marine fish, as well as a total species diversity containing more phyla than rainforests.
- Current estimates are that 10% of all coral reefs are degraded beyond recovery. Thirty percent are in critical condition and may die within 10 to 20 years. If current pressures continue unabated, 60% of the world's coral reefs may die completely by 2050.

God's Creatures

Humans have been the main cause of extinction in other species and continue to be the principle threat to those species that are at risk of extinction.

Habitat loss, introduced species, over-exploitation, and pollution are the main threats, with human-induced climate change becoming an increasingly significant threat to these species:

- Worldwide, at least 15,589 species face extinction. However, this is certainly an underestimate, because it is based on assessments of only 3% of the world's 1.9 million species that have been described. A majority of the world's species have not been described.
- Although estimates vary greatly, current extinction rates are at least one hundred to a thousand times higher than background, or "natural" rates.
- Global trends indicate increases in the number and rate of extinctions of described species, and the main causes of extinction (such as habitat loss and exploitation) are increasing.
- Over one in five (21%) of the world's plant species may be threatened with extinction. Plant populations are often the frontiers for developing new medicines.
- Countries that have the highest numbers of threatened species tend to be the least able to invest significant resources into conservation because they have relatively low gross national income. These include Brazil, Cameroon, China, Colombia, Ecuador, India, Indonesia, Madagascar, Peru, and the Philippines.

- A new survey of the world's oceans has confirmed that 90% of large predatory fish (such as sharks) in the world have been wiped out in the past 50 years because of commercial fishing.
- Forest cover has been reduced by more than 20 percent worldwide, with some forest ecosystems, such as the dry tropical forests of Central America, virtually gone.
- Wetlands areas have shrunk by about half; and grasslands have been reduced by more than 90 percent in some areas.

<http://www.creationcare.org/resources/sunday/facts.php>

“Treat the earth well: it was not given to you by your parents, it was loaned to you by your children.”

~a Native American proverb²

² From <http://www.indigenouspeople.net>

CHAPTER 1: A BIBLICAL PERSPECTIVE ON CREATION CARE

Laurie J. Braaten

A CHRISTIAN STARTING POINT FOR CREATION CARE

Why should creation care be a concern for the Christian? From one perspective, creation care is common sense practice for everyone, Christian and non-Christian alike. This world is our earthly home; our lives and the lives of others literally depend on a healthy earth, a vital ecosystem, and a continual supply of natural resources. If we destroy our home and poison our food sources, how can we survive? Likewise, many people enjoy the beauty of creation and do not want to see it marred by careless or destructive practices. Again, this is not something that only a Christian might feel. So what sets Christian creation care apart from other advocates for a healthy environment? For Christians, creation care grows out of our belief that God is the creator. Christians have always believed that the God who has been revealed to us through Jesus Christ lovingly created and is now sustaining the earth and all creation through the Holy Spirit. As we shall see, creation is not only the backdrop for God's plan of redemption; creation is also included in God's redemptive work.

The Bible has many references to God's work in creation and how God's people are expected to properly respond to the Creator and his creation. In the late 1990s, the Advisory Committee on Environmental Stewardship for Nazarene Compassionate Ministries summarized some of the major biblical concerns about creation care in a brief statement. This Statement on the Care of Creation was prepared to inform our worldwide constituency of the environmental issues facing our world. It briefly outlines our individual and collective responsibilities to be conscientious stewards of the earth and its resources, and guides us in how to minister effectively and compassionately to those whose lives are affected by environmental injustice. The Statement on the Care of Creation reads:

"We believe that the earth belongs to God, the Creator (Deut. 10:14; Ps. 24:1), and that he maintains an active, sustaining presence in his creation (Heb. 1:3). God is pleased with his creation (Gen. 1:31) and he demonstrates love and compassion toward all he has made (Ps. 145:9, 13, 17). Creation was declared good before the creation of humans (Gen. 1:21, 25), and therefore it has value for its own sake. Nature is a witness to the power and glory of God (Pss. 19; 104; 148); viewing God's handiwork leads us to worship the Creator (Rom. 1:20).

We believe that sin results in the destruction of creation (Hosea 4:1-3; Isa. 24:4-6; Jer. 9:10-13 and 12:4,10-11); therefore, the ultimate solution to the "ecological crisis" can be found in Jesus Christ and His church. Christ's redemptive work reconciles all of creation to God (Col. 1:20; Rom. 8:21; Eph. 1:9-10), and creation will be completely restored when Christ's kingdom is established (Rom. 8:23; Rev. 21:1). Because God considers creation worth saving, we must recognize that our work on earth includes redeeming creation from the effects of sin and preserving it as much as possible for the glory of the Creator.

We believe God gave human beings the responsibility of stewardship over His creation. God placed humans in the garden to nurture and care for it, not to dominate and destroy it (Gen. 2:15). God will hold accountable those who destroy the earth (Rev. 11:18). We find in creation what we need to supply our "daily bread". God has given all of us enough to meet our current and future needs if we wisely use the gifts of creation. This includes limiting our expansion and growth, not treating resources as inexhaustible, and not taking more than we

need when others are still lacking the basics of life. It also includes loving our current and future neighbors as we love ourselves (Matt. 22:39) by not polluting our common resources; the land, water, and air."

Much could be said about the biblical and theological underpinnings of creation care; as a matter of fact, whole books have been written on the subject (see the bibliography for a sample). In this document we will look at a few key issues.

GOD VALUES CREATION — AND SO SHOULD WE

As the creator, God values his creation. This is most clearly seen in Genesis 1, where seven times it says that God looked at what he created and “saw that it was good” (Gen 1:4, 10, 12, 18, 21, 25, and 31; Bible passages in this chapter are quoted from the NRSV unless otherwise noted). In this passage, God resembles a builder or artist who steps back after each phase of the project and admires his handiwork, taking delight in what he has done. According to this passage, six times before the creation of people, God declares creation to be good. This shows that God values creation for its own sake, apart from the presence of humans. On the sixth day when God declares that creation is “very good,” this is applied to “*everything* that he had made” (Gen 1:31). This “*everything*” clearly applies to the *totality* of creation, and is not just about humans, as is commonly claimed.

Psalms 104 gives a similar picture. This psalm reveals God’s creative activity as sustaining all of the creation — human and nonhuman alike. In verses 10-23 God seems to take just as much delight in sustaining the animals and “the trees of the LORD” (v. 16) as he does in providing for humans. God lovingly cares for all of his creation, and each part of it is important. As God tells Job, he brings “rain on a land where no one lives, on the desert, which is empty of human life, to satisfy the waste and desolate land, and to make the ground put forth grass (Job 38:26-27). For God’s people through Jesus Christ, God’s positive valuation, or love of creation, is the source of our attitude toward creation. Humans have been created in the image of God (Gen 1:27), and this image is being fully restored in Christ (See Rom 8:29; 1 Cor 15:49; 2 Cor 3:18; 4:4; Col 1:15; 3:10). One implication of humans being created in the image of God is that in some way we reflect, or mirror, God.

Since God loves the creation for its own sake, wouldn’t it follow that Christians should imitate God’s attitude, by valuing and loving the creation as more than just a source of resources and raw materials? We will return to the topic of the image of God later in this chapter.

LOVE OF GOD’S CREATION IS NOT THE SAME AS “LOVING THE WORLD”

This idea of valuing, or loving, creation seems strange or even dangerous to many Christians. After all, the Bible guides us with “[D]o not love the world or the things in the world” (1 John 2:15a). So how can we say that the Christian should love creation? Loving, or caring for creation is not the same thing as being worldly, or what the Bible calls loving the world. We see this as we read carefully the rest of the passage. What the writer calls “the world” is not God’s creation, but the sinful world of greed, lust, and pride. It is characterized as “the desire of the flesh, the desire of the eyes, the pride in riches” that “comes not from the Father” (1 John 2:16). This biblical “worldliness” is shorthand for an excessive and self-centered love of things *in* the creation. This is essentially idolatry because it puts something else ahead of God. Family, friends, recreation, and creation can become idols if they are considered more important than God. Loving the Creation is not sinful in and of itself — only the misuse or wrong attitude toward

creation is wrong. The proper perspective of the Christian toward creation is to value and love the creation as the work of our Creator.

CREATION GLORIFIES GOD — IT INSPIRES US TO WORSHIP THE CREATOR, NOT THE CREATION

Many Christians equate respect or love for the environment with the worship of creation. While there are, no doubt, people who worship the creation rather than the creator, a true Christian concern for creation leads one to worship the Creator. The Apostle Paul speaks of these two contrasting approaches in Romans 1: 18-32. In the psalms we often read that all of creation worships (Pss. 65:13; 96:11-13), or is being called to worship the creator (Pss. 98:7-8; 148:1-4). Humans are often invited to join with creation in this worship of God. While there can be no doubt that this is poetic language, it would be a mistake to regard such passages as “just poetic images.” The truth expressed in these psalms is that when creation is functioning properly, that is, as God created it, it brings glory to the Creator. One use for these psalms is to inspire believers to observe, or even meditate on God’s handiwork as a way to see God at work in creation, and as an opportunity to praise God for these works. When we do this, we are joining the choir of creation in songs of praise to the creator. Of course, if God’s workmanship has been marred beyond recognition, or reduced to a few plants in gardens or trees on city streets, then creation’s witness to God’s glory is also marred and limited.

GOD PLANS TO RENEW CREATION — HUMANS ARE CALLED TO RESPECT IT NOW

There are Christians who think it is all right to destroy, or deplete creation simply because God will create a new heaven and new earth (Isa 65:17; 66:22; 2 Pet 3:13). Some even seem to think we are helping God by demolishing the old dwelling so he can build a new one. There are no passages in the Bible, however, that encourage this practice. The idea that God (and we) can destroy the old because God will make something new is based on a misunderstanding of the biblical term “new.” The word “new” does not usually mean something made from scratch — it can apply to some item which has been (re)newed. For example, the Old Testament (Hebrew) word for moon is “new” because the moon renews itself each month. Likewise, the “new creation” grows out of the old creation, which God will re-create and bring to its intended purpose through Christ (Rev 21:1-5; see 2 Cor 5:17 [note the NRSV translation]).

While the Bible sometimes describes the transition from the old creation to the new as a process of death or destruction, the general teaching of scripture is that there is a connection between the old and the new. This is similar to the teaching about the resurrection of the body. The Bible teaches that God will raise believers from the dead to participate in the final consummation of this new creation (there are many references to the resurrection in the New Testament, see Rev 20:11-21:5). Christians will be given a resurrection body which is new in some sense. Nevertheless, there will be continuity between this resurrection body and the earthly body, just as there is continuity between a seed sown in the ground and the plant that grows from it (1 Cor 15:35-49). The exact nature of this continuity is a mystery. How God will resurrect bodies that have decomposed (in many cases without leaving a trace) we are not told. Yet whatever the case, we don’t have license to do whatever we please with our bodies now just because God will restore or renew our bodies in the resurrection—Paul says that it is those who do *not* have the hope of the resurrection that live like this (1 Cor 15:32-34)! Similarly, God’s re-creation of the earth does not justify our mistreating it or using it up as fast as we can now.

Nowhere in the Bible does it say that because God plans to renew all things that we should try to get as much out of creation as possible, to treat the earth or its resources with

disrespect, or to use up its resources without regard to how it affects the earth or others. (When people live this way in their personal life it is called “hedonism.”) As a matter of fact, the Bible often admonishes the people of God to do the opposite; God is concerned with how the creation is treated, or affected, by humans. For example, Israel was commanded to care for its land, in its agricultural practices of giving the land a sabbath (Lev 25:1-7). Israel is even told that one reason that God would allow an enemy to destroy their land and cities and then send Israel into exile is to allow the land to “enjoy its sabbath years”! (Lev. 26:23-35). Israel was also commanded to respect the fruit bearing trees in their enemies’ land during war (Deut 20:19-20). Nations are sometimes condemned for their wanton destruction of the earth or land (Isa 14:17, 20, see v. 17; Jer 51:25). Those who destroy the earth are listed among those suffering punishment in the last judgment (Rev 11:18).

Furthermore, creation is not just important as our present and future environment, but because God values it for its own sake (as we noted earlier). The creation is sometimes portrayed alongside humans as an object of God’s redemption now and in the future. According to the New Testament, Christ is God’s agent of creation through whom he made the world (John 1:1-3, Heb 1:1-2; Col 1:15-16). God’s redemptive work in Christ includes redeeming, or reconciling, all of this creation to God (Col 1:20). God’s first covenant was with the entire creation, including the earth and the animals as well as humans (see Gen 9:12, 13, 15, 16, 17; see also Hos 2:18). As God’s people, we should treat our covenant partners, the rest of creation, with respect.

One of the most significant passages about God’s redemption of all creation is found in Romans 8:18–23. When Paul mentions creation’s groaning and eager longing for final redemption, he is probably referring to the suffering of creation under human sin (and God’s judgment; cf. Hos 4:1-3; and Jer 12:4, 10-11). Creation has been marred by human sin and suffers dissolution and decay. As with humans, creation needs to be freed from the power of death (“decay,” NRSV). Likewise, creation will participate in the final redemption by enjoying the same liberty as the children of God. In all of these passages it is evident that God’s redemption is comprehensive: it includes all of creation, human and nonhuman alike.

GOD CALLS HUMANS TO CARE FOR CREATION — NOT TO CONSUME IT WASTEFULLY

Some Christians claim that we are allowed to exploit earth’s resources without concern for how we harm the earth. They base this on God telling humans to multiply and fill the earth, and have dominion over and subdue it (Gen 1:27-30). Since it is clear that God does not want the careless destruction of his creation, how are we to understand this text? First, we must read it in light of the original situation and peoples it addressed. When Israel first read this text, it was justification for them to move into their land and clear it enough for human habitation. In a culture that believed that they were at the mercy of the forces of nature, “subdue” and “dominion” empowered them to occupy their land in faith that God would enable them to do it. This text is not justification for all cultures at all times to “subdue” the earth according to their own definitions or standards. Second, in this passage humans are granted rule over the earth as God’s image (vv. 26-27), that is, as earthly representatives of the Heavenly Ruler. The rule of God depicted in Gen 1 is creative, life-giving, and bestows blessing on creation.

A related issue is God’s blessing for humans to be fruitful and multiply and fill the earth. First, in terms of the story in the Pentateuch, Israel fulfilled this blessing, ironically, in the land of Egypt (Exod 1:7). Second, this is a blessing, not a commandment for all peoples at all times. Third, if it were a commandment for all peoples, it is probably safe to say that we have carried it out, and perhaps then some. (As a matter of fact, this would be the only command in the Bible that has been faithfully fulfilled by all peoples everywhere!) It should be observed here that God

also gave this blessing to the animals (Gen 1:22). Likewise, in the context of blessing, God gave plants for food not only to humans, but also to the animals (Gen 1:29-30). Therefore humans may need to limit their growth and consumption of habitats. This will not only allow animals to enjoy their God-given food source, but also will enable them carry out God's blessing to multiply.

Finally, Gen 2 gives a fuller picture of what the human relationship should be to creation. The human being was put in the garden "to till it and keep it" (Gen 2:15). The two terms "till" and "keep" can also be translated as "serve" and "protect" (or "guard"). Another way to interpret this passage is that humans are put on earth to render protective service to the land. Humans and the land live in a mutually beneficial relationship. As we saw earlier, that relationship is distorted by human sin, so that both creation and humans suffer (Gen 3:17-19; Hos 4:1-3; Joel 1:3-2:11; Rom 8:19-22). Yet God wills to correct this damage to creation when humans repent (2 Chron 7:13-14; Joel 2:12-27). As we have already seen, God's plan is not for the rejection of an expendable and worthless earth, but for the redemption of his beloved and suffering creation.

CREATION IS GOD'S GIFT TO ALL — FOR THE BENEFIT OF ALL, NOT JUST A FEW

The Bible presents us with two views about the ownership of the earth that seem to be incompatible. On the one hand, the earth belongs to God (Pss 24:1; 89:11; 95:4-5). On the other hand, the earth is a gift offered to humans (Ps 115:16). The two ideas can be brought together under the idea of stewardship — we are entrusted with the care of God's land, and God provides for us through the land. The earth is God's gift for our benefit, but God has not handed it over for us to do anything we want with it. As a matter of fact, all of God's gifts imply a stewardship of the gift for the sake of serving others (1 Pet 4:10; see also Paul's discussion in 1 Cor 12-14). God's gifts are always on loan from God, and for the sake of his church and for all creatures. Likewise, Deuteronomy presents the land as God's gift to Israel (Deut 1:21, 35, etc.), but it remained the land that the LORD owned (see Deut 33:13 and Deut 10:14) and sustained (Deut 11:11-12; 28:12). Israel was commanded to share the blessings of the land with the poor and less fortunate (Deut 15:1-11) and the nations (Deut 28:12). God could take away the land, however, if Israel were disobedient and worshiped other gods (Deut 4:25-26; 28:21-24, 63).

Israel's life on the land of promise was to be an example of how God's people are to live out their faith on the earth under God's rule (or the Kingdom of God). As Gentile Christians, we have been made recipients of the promises given to Abraham and Israel through Christ (Rom 4:1-25; 11:17-24). This inheritance of the Old Testament promises not only means that we are made right before God (Rom 3:21-4:12), but also that we have inherited the world (Rom 4:13) in the way that Israel possessed the land.

As God's people, we should attempt to care for creation as Israel was instructed to care for the Promised Land. We are entrusted with the care of God's creation for the glory of God, not only to meet our daily needs, but also for the sake of the needs of others, both in present and future generations. The remainder of this handbook will offer guidelines for how God's people can properly exercise their role as responsible stewards of creation for the glory of God and benefit of all of God's creatures.

CHAPTER 2: AFFLUENCE, POVERTY, AND THE ENVIRONMENT

Mike Mooring

Who is to blame for the environmental crisis?

Many believe that poverty is the ultimate cause of environmental degradation and other of the world's most serious problems, such as hunger, infant mortality, wars, and refugees. Others are convinced that affluence is responsible for environmental destruction by promoting wastefulness, unbridled consumerism, and an economic system that puts profits before the needs of people and the health of ecosystems. In fact, both the poverty of the developing world and the affluence of the rich nations have created the present environmental crisis. Repairing and protecting our planet will require changes in lifestyle and priorities for all of us, but the rich and the poor will have different priorities. Recycling makes little sense for many of the world's poor, who hardly have anything and reuse what little they do have, but it is essential for the affluent, who are so rich (compared to the rest of the world) that they can afford to throw out tons of packaging material, furniture, and even food. Sustainable techniques of agroforestry (farming with trees) have no direct relevance to the urbanized rich, who obtain their food from the supermarket, but is critical to the world's subsistence farmers trying to eke out a living on a few hectares of marginal land. Yet, both rich and poor are linked together in a web of environmental destruction, and any plan of environmental stewardship must include both parties.

HOW CAN POVERTY BE ALLEVIATED?

As Christians concerned for the needs and struggles of people, we would all like to see a quick fix to poverty, but nothing seems to work. Socialism has tried to deal with poverty by redistributing existing wealth, but has succeeded only in removing incentive and initiative, making everyone poor. Supply-side economics has tried to do so by promoting corporate economic growth with the hope that some of the riches would trickle down to the poor, but the poor keep getting poorer. Well-meaning foreign aid schemes channel millions of dollars into the poorest nations, but only corrupt political leaders and wealthy businessmen seem to benefit. When the crowds came to John the Baptist asking "What then shall we do?" he said "Let him who has two tunics share with him who has none; and let him who has food do likewise." As the people of the Way³, God has asked us to share our time and resources with those in need – not to solve their problems for them, but to give them the encouragement, knowledge, and resources they need to solve their own problems. As we come alongside the poor, we are called to share the Good News, so that those who respond may be transformed to live for Christ and to contribute to the common welfare in their communities.

There is no quick fix to poverty, and educated and affluent Christians cannot do the job for the poor. This is illustrated by the recent history of foreign aid projects designed by affluent countries such as the USA with humanitarian objectives in mind. Although well-intentioned and devised by so-called "experts", many of these schemes have failed miserably because they used a top-down approach that did not solicit the participation of the very people the projects were designed to help. These failures are grim reminders that patronizing humanitarian aid schemes cannot solve such intractable problems as poverty and environmental degradation. If we really care about the suffering of humanity and the suffering of God's creation (whether on the other side of the world or in our own back yards), Christian workers must seek out the wisdom and

³ The Book of Acts description of the new Christian religion, Acts 9:2

experience of local community members. It is the poor themselves who must ultimately solve the problems. Two examples of these failures may be instructional.

Desertification in Africa.

A series of non-sustainable and ill-advised foreign aid projects in sub-Saharan Africa have attempted to curb the conversion of land to desert (desertification) by making nomadic pastoralists settle down. In the Sahel region south of the Sahara Desert, wells were drilled into deep aquifers to provide local water sources so that nomadic pastoralists would not have to move their livestock in search of water and forage. This had the unintended effect of exacerbating desertification by concentrating large populations of people and their livestock in small areas, leading to overgrazing, excessive cutting of trees for firewood, and the intensification of wind and water erosion. In another foreign aid plan in northern Kenya, Turkana pastoralists were first made into farmers, and then into fishermen. The farming failed because northern Kenya is arid and irrigation systems could not provide enough water, and the fishing industry failed because there was not enough electrical power to run the cold storage plant. This particular project was expensive (costing \$21,000 per household), unwelcome to the Turkana, and ultimately unsuccessful.

Guatemalan coffee farmers.

Coffee in Guatemala and other Central American countries has traditionally been grown under tropical tree canopies using shade-tolerant coffee plants. In the 1970's, the U.S. Agency for International Development (USAID) offered funding to farmers to make the switch to growing new, high-yield varieties of coffee. The goal was to raise the income of small farmers by increasing agricultural productivity. However, the new high-yield coffee plants were sun-tolerant and the farmers had to cut down trees so the new varieties could get direct sunlight. In addition, the new hybrids required repeated applications of expensive chemical fertilizers and pesticides, which incurred high financial debts for farm families. In time, the soils accumulated high levels of toxic pesticides, which washed into streams and killed fish, becoming a health hazard. The loss of tree canopies also deprived migratory songbirds of winter habitat, leading to the decline of songbird species. Finally, the Smithsonian Institution Migratory Bird Center, working with scientists, farmers, and coffee dealers, spearheaded a return to native, shade-tolerant varieties of coffee. Many farmers shifted back to shade-tolerant coffee, some of which is now grown without chemical fertilizers and pesticides.

In both these cases (and many more that could be cited), well-meaning programs designed by experts and carried out by well-funded international agencies failed to achieve their objectives because they never consulted the local people. African pastoralists are nomadic because rainfall in much of semi-arid Africa is too unpredictable to support sedentary agriculture. Guatemalan coffee-growers have traditionally used shade-tolerant plants because these varieties are best adapted to the local environment. The lesson to be learned from such foreign-aid failures is that helping the world's poor to live better lives goes hand-in-hand with sustainable programs that protect and care for their environment. Further, such development programs cannot be imposed by outside agencies and experts, they must be carried out by the people in the local communities, who best understand their environmental and economic situation. Outsiders can provide expertise, resources, and encouragement, but without the input and participation of local people, stewardship initiatives are doomed to fail. What we need are community-based programs of creation care. Fortunately, Christian programs of this sort exist and can serve as models.

The example of Floresta.

Deforestation is a growing problem all over the world, but it is especially acute in tropical countries. None are more affected by this problem than the rural poor who make their living in and around the forest. There are nearly half-a-billion subsistence farmers worldwide. Constantly fighting starvation and utterly dependent on their environment for survival, they are often trapped in a vicious cycle of poverty and deforestation. Threatened by land that no longer produces, rains that no longer come, and springs that are dry, they clear the forest for agriculture or sell charcoal to survive, further degrading their land. Poverty and environmental degradation are intimately connected. Deforestation can be stemmed if it can be shown to be economically advantageous for the subsistence farmers to change their practices and restore their land. Similarly, poverty can best be addressed by providing long term opportunities for people to change their own situation. Spiritual and physical solutions are also closely entwined. True development does not take place without spiritual renewal and an awakening to God's grace. It is God who changes a person's life and attitudes towards his or her neighbor, and allows communities to flourish. Economic development on its own can lead to further inequities, resentment, and conflict. Without the gospel, eternal issues are neglected. Few organizations have so successfully wed economic, environmental, and spiritual solutions to the problems of poverty and deforestation as Floresta.

Floresta was founded in 1984 by Tom Woodard, who saw that much of the human misery in the tropics was rooted in deforestation and environmental degradation. In turn, much of the deforestation stemmed from a lack of economic options. Woodard and his colleagues had been working in the Dominican Republic as volunteers with a Christian relief agency. Motivated by the Christian call to help the poor, they developed Floresta to meet the environmental, economic, and spiritual needs of the rural people of the Dominican Republic. Their goal was development that restored productivity to degraded land and dignity to the rural poor, while providing opportunities for upcoming generations. One of Floresta's first projects was to found a tree nursery, which could provide a high quality source of tree seedlings and jobs. In 1987, Floresta began a revolving loan fund to provide loans, training, and marketing services for poor farmers who wished to start tree-related agroforestry businesses. Floresta has since expanded its program to include community development, the creation of secondary industries, and more intentional sharing of the Gospel with the communities involved in the program. In 1995, Floresta began searching for other countries which might be interested in participating in its proven program. Mexico and Haiti were chosen as the first countries for expansion in 1996 and 1997, followed by Tanzania in 2004. Currently, Floresta's program has led to planting over 2 million trees and provided over 2000 loans. Today, there are over 2000 families in 100 communities who are benefiting from Floresta's program by receiving loans, training in sustainable agriculture and reforestation, assistance in community organizing, capacity building, and marketing assistance.

One of the things that makes Floresta special is that they don't just treat the symptoms of environmental degradation and poverty, they work to solve the root causes. The primary tools used by Floresta are community development, innovative agriculture and forestry, credit, and discipleship. Rural people have a tremendous amount to offer in solving their own problems. Floresta's impact on the forest cannot be measured just in terms of acres reforested; every farmer in the program not only becomes an agent of reforestation, he or she ceases to be an agent of deforestation because they no longer need to cut existing trees for firewood or new farm land. Floresta has contributed to the preservation of many more acres of natural forest than have been replanted.

Sustainable development.

Basic ecological principles tell us that planet earth is a closed, finite ecological system in which all life-support materials must eventually be recycled, and no component can expand indefinitely. Contrary to political rhetoric, continuous economic growth is impossible because we do not have infinite resources. Our dilemma is that we must have economic development so that lives of poor people can be made better, but we must also conserve and wisely manage our natural resources so that they will be available for future generations. What is needed is *sustainable development*, defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations World Commission on Environment and Development). Sustainable development is not just a buzzword, it is common sense. Ecological sustainability is like financial sustainability: our budget must balance, and our income must equal our expenditures. We must rely on nature’s “income” (renewable resources) without depleting its “capital” of nonrenewable resources. This kind of development is centered on the overall wellbeing of people and their environment.

Appropriate technology.

In 1973, British economist E.F. Schumacher published a popular book entitled ‘*Small is Beautiful*’, in which he introduced the term *appropriate technology*. Appropriate technology promotes machines and approaches suitable for local conditions and cultures. Rather than import expensive western technology and big aid projects (e.g., hydroelectric dams, irrigation schemes), Schumacher advocated working with indigenous people to create sustainable livelihoods suitable for prevailing conditions. The goals of appropriate technology are to (1) design productive facilities in places where people now live, including rural areas, (2) design products that are affordably made by simple production methods from local materials for local use, and (3) to emphasize participation and direction by local people themselves. The philosophy is that sustainable development can only be achieved if communities design and control productive technologies for their own development. Examples of appropriate technology projects are the manufacture of cheap, reliable scotch (donkey) carts in small rural workshops for use by farmers, development of machines that shell, roast, and crush peanuts to produce peanut butter for women’s groups, and the making of briquettes made from compressed sawdust as an alternative fuel source.

Population growth and over-consumption.

It has been said that the greatest problems in global ecology and environmental degradation are human population growth and excessive consumption, because both trends are putting exorbitant demands on the finite resources of the planet. There are currently around 6.5 billion human beings on planet Earth. The human population is growing faster than food and other needed resources can increase. Every second, 5 new humans are born and 2 die, for a net gain of 3 people per second, and over 100 million new people each year. To give an historical perspective, at the time of Christ there were about 300 million human beings on planet Earth. It took 1650 years for the human population to double to 600 million, but in the following 350 years the population experienced a tenfold increase to 6 billion in the year 2000. Consider that a 50-year old man or woman in 2005 will have been born when the human population was half its current size, and you begin to understand how rapidly the human population is increasing. By 2010, there will be 7 billion people, and an estimated 12 billion by 2040. The greatest population increase in the next 25 years will be in the developing countries that are least able to support growth. The demand for more food, water, land, housing, jobs, and other resources threatens to exceed the available supply in poorest nations of the world.

In stark contrast to the increasingly desperate need of the world's poor is the extravagant over-consumption and waste of resources by the richest nations. The affluent world uses resources way out of proportion to its population. For example, with 5% of the world population, the average "ecological footprint" (how much productive land and water is needed to support one's lifestyle) of the United States is 24 acres (10.6 hectares) per person. Worldwide, there exists only 5 biologically productive acres per person. If everyone used and discarded the amount of resources as those in the United States do, we would need over 5 planets to support the human population. For these reasons, Christians everywhere need to use our God-given natural resources with great wisdom.

Food, agriculture, and land degradation.

The population explosion among the poorest nations directly or indirectly influences every other global environmental issue. World food supplies cannot keep pace with the increasing population, and 20-25% of the world population currently does not receive an adequate diet, including 200 million children that are underweight and malnourished. Famines caused by droughts, floods, and wars exacerbate the problem, resulting in the death of hundreds of thousands of adults and children, and the dislocation of millions of refugees. The Green Revolution (the use of high-yield varieties of corn, wheat, and rice) has had successes and failures, but may ultimately not be sustainable because of the large amounts of pesticides, fertilizers, and irrigation required for the new varieties. The potential of biotechnology to genetically engineer crops with greater yield, faster growth, tolerance to stress, and resistance to insects and disease shows promise, and sustainable techniques of agriculture can stem the loss of 25,000,000,000 tons of soil lost per year to wind and water erosion. Because the landscape is the ultimate source of food, water, and habitat, human activity has degraded millions of acres of cropland, pastures, and forests through soil erosion, deforestation, and desertification. Poor people struggling to feed and shelter themselves usually have no other option other than overgrazing, over-cropping, and deforestation of the land. Poor people are forced to extract more from the land than is sustainable, and the declining land productivity leads to greater poverty. Although sustainable techniques exist that reverse the loss of soil and soil fertility, the knowledge and resources needed to apply these techniques are seldom available. However, there are success stories.

The example of the Green Belt Movement.

In 1971, Wangari Maathai, a Kenyan woman and committed Christian, received the Ph.D. in zoology. She was appointed an associate professor and Chair of the Department of Veterinary Anatomy at the University of Nairobi in 1976, the first woman in the region to attain those positions. At this time, she was looking for ways to empower poor people and restore their self-reliance and community spirit. While serving in the National Council of Women of Kenya, she introduced the idea of planting trees using ordinary people. The idea was to create greenbelts to restore deforested areas, and in the process empower women by providing firewood, building materials, fruit, fodder, shade, and shelter for animals. She continued to develop the idea into a broad-based, grassroots organization called the Green Belt Movement (GBM), launched in 1977. GBM's main activity involved tree planting by women's groups and school children. In 1986, GBM established a Pan-African Green Belt Network to expose people from other African countries to its community conservation approach. To date, initiatives have been successfully launched in Tanzania, Uganda, Malawi, Lesotho, Ethiopia, and Zimbabwe, among others. In 2002, Prof. Maathai was elected to Kenya's parliament, and in 2003, President Mwai Kibaki appointed her Assistant Minister for Environment and Natural Resources, a position she currently holds. Over the years, Wangari Maathai and the Green Belt Movement have received numerous awards, most notably the 2004 Nobel Peace Prize. Today, the Green Belt Movement continues

to focus on environmental conservation, community development, and capacity building. The movement in Kenya has grown to include 50,000 women and over a million school children that have now planted more than 30 million trees. The vision of GBM is to create a society of people consciously working for improvement of their environment, using tree planting as an entry point. Guided by the values of volunteerism, environmental conservation, self-betterment, and empowerment, the GBM works to realize its mission through programs in tree planting, biodiversity conservation, environmental education, advocacy, food security, and capacity building for women and girls. Wangari Maathai and the Greenbelt Movement are an inspiration that self-help groups can do something to improve the environment, and a single person can make a difference.

Urbanization and public health.

Exponential population growth, degradation of the land, and too little food and other resources drive many poor rural people to the urban centers, which promise jobs, education, and hope for the future. A disproportionate share of growth is now occurring in cities, which become centers of homelessness, crime, unemployment, poverty, and pollution. Current urban problems include traffic congestion, air and water pollution, overcrowding, unsanitary conditions, inadequate water supply, substandard housing, and related health hazards. Slum dwellers in the large urban areas of the developing nations suffer from respiratory illness, gastrointestinal disorders, parasite infestations, and accidents. Children of slum-dwellers are frequently ill, underweight, nutritionally stunted, and susceptible to deficiency disorders. Many of these health problems are caused by contaminated food and water, by close contact, and by lack of basic health care. Compounding these health problems is the AIDS pandemic. In sub-Saharan Africa, 6,000 people die of AIDS every day. Worldwide, of every 11 people infected with HIV, 10 live in Africa. Life expectancy has dropped dramatically, and orphans become street children. Although AIDS is not the direct consequence of poverty or human population growth, it may in some cases be perpetuated by the breakdown of families and waning sexual norms in the face of high unemployment, migrant labor, dislocations caused by wars, and gender inequality.

Community-based conservation.

The human demand for land, water, food, and energy competes with the needs of wildlife. Growing crops, grazing livestock, felling trees for fuel and building materials, urbanization, and industrialization all leads to loss of habitat for wildlife. Commercial poaching threatens the existence of some species (such as rhinos), while subsistence poaching may destroy wildlife in local areas. Unfortunately, the traditional approach to wildlife conservation, setting aside protected areas where wildlife is kept in and local people are kept out, has only served to create conflict between wildlife and people. As the human population grows, the increasing demand for land puts pressure on protected areas. Because local people pay the costs of wildlife (e.g., damage to crops, livestock, and people), but have generally been prohibited from using the resources of the protected area (e.g., hunting, fishing, collecting), the perception is that protected areas do nothing to help local communities. Increasingly, it is recognized that wildlife must “pay its own way” by providing benefits to local people that outweigh the costs of living with wildlife. In other words, people who live with wildlife pay some costs, such as animals trampling and raiding crops, injuring or killing people, etc. Unless wildlife provides local people with some benefits, they will have no incentive to conserve wild populations. Community-based wildlife management seeks to enhance the conservation of biodiversity while affording rural people benefits from wildlife resources in their areas. When local people benefit from wildlife, they will be motivated to conserve and manage the wildlife themselves.

A number of innovative community-based wildlife conservation programs have been established in recent years. For example, the CAMPFIRE program in Zimbabwe creates jobs and generates income for rural communities through arrangements with safari operators that result in revenues from hunting being distributed to local people or put into community projects, such as construction of boreholes, schools, clinics, and roads. In some areas, local people are allowed to hunt, or collect caterpillars, honey, and thatch grass from national parks. This is a promising and practical solution to wildlife conservation in the developing world.

WHAT IS THE RESPONSIBILITY OF THE RICH?

The present environmental crisis is not just the fault of the poor. Jesus said “Why do you look at the speck of sawdust in your brother's eye and pay no attention to the plank in your own eye?” (Matthew 7:3). The rich are just as responsible for environmental destruction as the poor. In fact, on average, one affluent American is far more of an ecological disaster for the environment than one poor slash-and-burn farmer in the Amazon rainforest. Every time we eat a fast-food hamburger, purchase furniture made from tropical hardwoods, drive our car, heat our house, mow our lawn, take out the garbage, or make any one of countless consumer purchases, we are party to the perpetuation of economic activities that promote deforestation to make room for cattle ranches, consumption of non-renewable energy that can never be replaced, the loss of huge amounts of resources in landfills, and unsustainable exploitation of raw materials in developing countries. Anything that we can do to lead simpler lives, reduce our waste, and promote sustainable practices is an important act of stewardship.

Consumption and waste.

Our affluent society has such a destructive impact on the earth for two reasons: (1) consumer goods are relatively cheap and readily available, and (2) it is easy for us to use more than we need, and to waste what others need. The truth is that the industrialized world uses resources way out of proportion to its population. According to the *The State of Garbage in America 2004* (published by Biocycle magazine in collaboration with Columbia University and based on data provided by state resource agencies), the United States alone produced 483 million tons of solid waste in 2002, amounting to 1.68 tons of solid waste per American. Of this tonnage, 66% went into landfills; the remainder was either recycled (27%) or incinerated (8%). If everyone in the world were to live at our level of consumption, it would be an incredible disaster for the environment.

It takes a certain amount of land to sustain the lifestyle of each person. When someone consumes meat, before that animal was butchered, it required land to graze on. When a person wears clothes, the cotton had to be grown somewhere. When a person throws something away, land is required in the form of a landfill to accommodate that trash. The list goes on. As mentioned previously, if everyone in the world were to live at the United States level of consumption, it would take 5.4 worlds to sustain us instead of just the one that we have. Americans use nearly *six times* the land that is available for each person. That is not sustainable. To learn more visit <http://www.earthday.org/Footprint/index.asp>.

Do we really need to consume so much? And, how much should we leave for other people, and for our descendants? Advertising urges us to buy more and discard more, but are our lives really better with more stuff? Today's average American owns twice as many cars, drives 3 times as far, uses 20 times more petroleum-based plastic, and flies 25 times as far, compared with our parents or grandparents in 1950 (Cunningham et al. 2001). Today, our lives are busier and

more hectic, with less margin and less time for God, family, and friends. This trend could be reversed if we took our stewardship responsibilities seriously enough to change our lifestyles.

Approaching our stewardship responsibilities.

As we look at what needs to be done in order to sustain the creation, we are overwhelmed with the enormity of the challenge, and may feel helpless to make a change. There is so much that could be done, and should be done. However, the question that each of us must ask is “What is God asking ME to do?” Each of us are accountable to God for what we do and for what we don’t do (Matthew 25:31-46). We are accountable to be good stewards of creation, and every Christian must consider how to do this within our own sphere of influence. Every one of us can do something to reduce our environmental ‘footprint’, the impact our lives have on the environment. We can consider purchasing less, avoiding disposable items in favor of products that will last, carrying reusable bags to reduce excess packaging, conserving energy, and saving water. Good environmental stewards must be wise consumers that choose products that are the least environmentally damaging in production, use, and disposal. Product merchandisers are rushing to cash in on ‘green consumerism’ (the desire of consumers to help the environment), so product labels must be read carefully. For example, there is no legal definition for such advertising buzzwords as *nontoxic*, *biodegradable*, *natural*, and *environmentally friendly*. Each individual and each family can make a difference by making simple lifestyle choices. We can plant a garden, bike to work, recycle, turn off the lights, carpool, and just be open to the wonder and beauty of creation. As individuals and families, we can expand our spheres of stewardship activity to our friends, churches, schools, and local government. We can support the work of Christian environmental organizations such as Floresta, World Vision, Au Sable Institute, Marah International, and many others.

It is helpful to make connections between the little actions we can take in our personal lives and the big, global problems that seem so intractable. For example, we can respond to deforestation by planting a tree. We can respond to the loss of biodiversity in tropical rainforests by refusing to buy furniture and other wood products made from tropical hardwoods, such as teak and mahogany. We can do something about land degradation by helping to restore a degraded area near to home. To reverse the loss of endangered species, we can refrain from purchasing endangered species products, such as furs and ivory. In response to the horror of famine and food shortages, we can eat everything on our plate and make a compost bin, even as we make it a priority to eat only what we need and not more. In response to the loss of tropical lands to cattle ranches, we can eat less meat and more vegetables. We can stem the phenomenal waste of materials into landfills by recycling whatever items we can. At the very least, we can be aware of the impact our lifestyle has on the creation, for this will move us to do what we can to be better environmental stewards.

CHAPTER 3: THE INDIVIDUAL'S RESPONSE

Jonathan Twining

As Christians, we must make the choice to change our lifestyles and reflect a commitment to caring for God's creation. But when we consider this choice, it may seem very difficult because most of us are not sure how to proceed. In this section of the guidelines, we offer practical suggestions for how an individual may choose to respond to God's mandate for creation care. When you look at the many suggestions that are offered, you may feel overwhelmed. Please do not look at these suggestions as a list of requirements. We encourage you simply to pick one or two things to try, make them a habit in your lifestyle, and then try something else. Making lifestyle changes is a process, but we never can make progress unless we start with something.

WHERE DO I START?

An appropriate personal response to environmental concerns must begin with an understanding of our place in creation and the current state of our relationships with the Creator and his creation. When Nehemiah first heard about the problems facing Jerusalem, he followed a series of steps that led him to action:

1. He recognized that there was a problem.
2. He identified that he was part of the problem.
3. He made up his mind to be part of the solution.
4. He learned more about the problem.
5. He inspired others to help fix the problem.
6. He persevered despite adversity.

We can follow a similar pattern as we learn more about the environmental concerns that face us in the 21st Century. Our first step is to acknowledge and understand our place within God's creation, and how we are interconnected with it. Perhaps we can get started by acknowledging the truths in these five core principles, developed by Marah International for their Earth Healers youth camp program for youth:

1. I am just one of many creatures that God made to fill the earth and make it fruitful.
2. I am interconnected with the Creator and all of his creation.
3. My relationship with God and the earth has been broken, so I need to heal my relationships with the Creator and his creation.
4. I can choose to be a healer and restorer of the earth.
5. I cannot heal the earth alone, so I must help others heal their relationships with the Creator and his creation.

Many of the Bible's characters understood their relationship to creation and learned from it. Jesus spent time with the wild animals when he was in the wilderness before Satan tempted him (Mark 1:13). David saw the handiwork of the Creator by observing the heavens and the created works around him (Psalm 104). Job believed we could learn much by observing the wild

animals (Job 12:7-10). Agur, the writer of Proverbs 30, found much wisdom and understanding by observing the lives of ants, coney, locusts, and lizards (Proverbs 30:24-28).

In Western cultures, we have become disconnected with the earth that supports us and provides for our needs. We could learn much from the indigenous people groups of the world who have learned to live in harmony with nature. Here are some ideas for how you can get reconnected with your natural surroundings:

- Take hikes on conservation land in your community and learn about the many species that live in your area. As you do, find a special natural place that is meaningful for you where you can go to connect with creation. Explore this place using all five of your senses as described below. Start a journal and record what your senses reveal to you.
- Read Psalm 104. Reflect on how God feels about your special place, and the kinds of things He does to care for each creature in it. Make some notes about what you see in your special place, and how each creature is connected together and to their Creator. Record your thoughts in your journal.
- Explore your special place with your eyes. What kinds of fellow creatures are sharing their special place with you? You don't have to know their names. Describe them in your journal, with words and pictures. Try to draw a picture of the entire scene so you can remember it later.
- Listen to the many sounds going on around you: birds singing, wind blowing, leaves rustling, brooks babbling. Try to describe the sounds in words or with a picture in your journal. When you hear these sounds, how do they remind you of the Creator?
- Blindfold yourself, and explore your special place with your hands. What unique sensations do you experience through the sense of touch? Where are the warmest and coolest parts of your special place? Where are the wettest and driest locations?
- Use a magnifying glass to explore a rotting log or wooden stump. Describe the creatures you can see, and try to figure out what roles the Creator gave to each of them.
- Find an interesting tree. Stand back and try to draw a picture of the entire tree. Then, blindfold yourself, and spend several minutes exploring the tree with your sense of touch. Remove the blindfold and record your exploration in your journal. Perhaps write a poem about your tree and how it gives glory to the Creator.
- Read and meditate on Psalm 96:11-12. As you sit in your special place, describe in your journal how you think the creatures that live here are praising God. How do they give glory to him in this special place? In what ways can you tell that this place gives glory to the Creator?
- Read and meditate on Psalm 65:9-13. In your journal, reflect on how God takes care of the earth, and what our role should be as Christians and his ambassadors.
- Reflect on what you really value in that special place, and what steps you would take if someone were threatening to destroy or deface it. How far would you be willing to go to save it?

GUIDING PRINCIPLES

Once we understand our place in creation, we must learn how to take care of it. Dr. Cal DeWitt, the founder of AuSable Environmental Institute and one of the leaders at the forefront of the modern Christian environmental movement, developed the basic principles of creation care shown below. These principles apply to everyone, no matter where you live in the world.

- Earthkeeping (Genesis 2:15) – We must work to leave the earth better than we found it.
- Fruitfulness (Genesis 1:22,28) – We must give creation the opportunity to be fruitful and fulfill its God-given purpose.
- Sabbath (Leviticus 25:1-7) - We cannot put relentless stress on the earth, but allow it time to heal and recover.
- Service (Genesis 2:15) – We must never take more from the earth than we are willing to give back.

These principles should be at the very heart of our response to the environmental concerns affecting us today and our future generations. These principles will be explored further in the sections that follow.

DOMINION AND COMPASSION

The Bible tells us that God gave humankind “rule” or “dominion” over the earth. But this does not give us the right to do whatever we please with the earth and its resources. To have dominion does not mean we have the right to dominate. Because we were made in God’s image, and we are his ambassadors, then our dominion of the earth should look like God’s dominion. God is not harsh and cruel with us, nor does he take from us without giving back. Our relationship with him is two-way: we worship and serve him, and he cares for us in return. In the same way, God loves and cares for his creation, showing compassion toward all he has made (Psalm 145:9) and providing for the needs of all living things (Psalm 145:16).

Because we are being transformed into the likeness of Christ, who is God, then our attitudes and actions toward the rest of creation must be among those things that are transformed in us. Our response to environmental concerns must take into consideration how Christ - the Creator, Sustainer, Redeemer, and Restorer of creation – feels about and treats his creation. If he is loving and compassionate toward creation, then we must be as well.

There are many ways that we might respond more compassionately toward creation. Among the possibilities are:

- When considering any action that would harm some part of God’s creation, strive for a solution that will meet the needs of human beings and the other creatures involved. We must learn that we harm ourselves when we harm the natural systems that support us.
- Treat pets, farm animals, and wild creatures of all types with respect (Proverbs 12:10, 27:23-27), acknowledging that God created them to serve an important purpose beyond what they provide for humans. Although they may seem small and insignificant to you, all creatures are essential to the ecosystems that God created to support life.

- If you are a hunter, do not allow the animals you hunt to suffer needlessly. Make sure you offer thanks to the Creator for the life that was given so you could continue to live.
- Provide food and/or shelter for animals during periods where there is little food available, or where their natural habitats and food sources have been reduced by human activities. Examples include bird feeders; bird and bat houses; other forms of cover or shelter; native plants that provide fruits, nuts, and berries; and sources of water. Create a backyard habitat that meets the needs of wildlife in your area.
- Have compassion on the land by giving it the opportunity to heal and recover from natural and human impacts. Like Job, we should never do anything to cause the land to mourn or cry out against us (Job 31:38-40). Consider following the Old Testament practice of allowing the land to remain uncultivated every seven years.
- Put a portion of your farm, forest, or wetland property under a conservation easement so that future owners must maintain it in its natural state and cannot develop it.

STEWARDSHIP AND SERVICE

Closely aligned with compassion are the concepts of stewardship (earthkeeping) and service. Service is related to “conservation”, which actually means “with service”. In Genesis 2:15, we are told that Adam and Eve were placed in the Garden of Eden to keep and serve it. To keep something means to maintain or preserve it. To serve something does not denote slavery to it, but rather a mutual relationship where both derive benefit, as in our relationship with God and the mutual submission he requires between one another.

If we are to keep the earth with service, we might choose to respond in some of the ways suggested below.

- *Conserving energy* – By conserving energy, we also reduce air pollution and the gases that contribute to global climate change – drive less, carpool, take public transportation, walk or ride a bicycle, make sure your home is properly insulated, turn off electrical appliances when not in use, eat locally grown foods when in season.
- *Conserving water* – Don’t extract more water from a river, pond, or well than can naturally be replenished in a reasonable amount of time; don’t pollute water sources with human or animal wastes or toxic substances; shut off the faucet when you are not using it; plant native plants that do not need to be watered; make sure your toilet isn’t leaking; keep a buffer of native plants along streams and rivers to filter out soils and pollutants that might travel downhill into the watercourse; use low-drip irrigation systems that use less water.
- *Conserving land* – Keep topsoil vegetated so that it will not be washed away by heavy rains; don’t poison the land with chemical wastes or unnecessary amounts of fertilizers or pesticides; build up the soil by adding compost, manure, and other organic fertilizers; plant cover crops that add nitrogen to the soil; practice sustainable agriculture techniques such as contour plowing, strip farming, conservation tillage, and terracing. When possible, buy locally grown produce, which reduces pollution from transportation and supports local farmers.

- *Conserving species* – Don't harvest more from the land and its creatures than you need; develop in clusters so that natural areas can be preserved for wildlife; in other words, if your town is expanding, encourage developers to build on land that doesn't have significant ecological value. In this way, land that *does* have significant ecological value can be left alone. Don't eat fish or shellfish that are becoming scarce or endangered because of overharvesting; don't purchase exotic pets that have been extracted from their native habitats; don't buy furniture that has been made from tropical hardwoods such as ebony, mahogany, rosewood, or teak unless they come from sustainable harvest programs.
- *Harvesting trees* – Many people rely on products from trees for firewood, shelter, food, and other amenities. However, living trees provided us with many more services than the ones we have harvested – they filter the air, provide oxygen, keep soil from eroding away, and regulate climate to name a few. The practice of clear-cutting all trees from an area should be discontinued in favor of more selective harvesting measures. When you cut down trees, replace them with native species.
- *Consuming less* – Choose to live a simpler lifestyle; don't buy anything you don't need right away; buy items that can be used more than once; purchase items that do not have excessive packaging; buy products in bulk; rent or borrow things you may only need to use once.
- *Reduce, reuse, recycle, refuse* – Reduce the amount of waste you create by your lifestyle; buy products that can be used more than once; recycle paper, plastic, metal, glass, and other items when possible; buy recycled products; refuse to buy products that are harmful to human beings or the environment.
- *Proper management of wastes*—Properly manage any wastes you must produce; respect the land- don't throw trash or litter on the street, in vacant lots, on the soil, or in the water; recycle when it is available; dispose of trash in properly designed facilities; compost organic wastes; use properly designed septic systems or hygienic latrines where sewage treatment is not available; site pollution control facilities in areas free of natural hazards and where wastes won't harm drinking water supplies.
- *Dealing with external waste*—Pick up litter when you run across it. If you are going on a walk, bring a bag and gloves with you for this purpose.

Justice

God represents justice and fairness for all people. As Christians, our actions should also be just and fair (Zechariah 7:9) as we seek to do unto others what we would want them to do unto us (Matthew 7:12) and love our neighbor as ourselves (Matthew 22:39). In terms of access to God's creation, everyone has a right to a clean environment, no matter what his or her race, gender, religion, or economic status. Our actions become unjust and unfair when one group of people enjoys a clean environment at the expense of another group that bears the brunt of harmful environmental impacts. We are unjust when our pollution floats down the river or through the air and affects someone else. We are unjust when we allow a waste dump to be constructed in a neighborhood dominated by minorities or people of low economic status because we don't

want it in our backyard, and they have little power to stop its construction in their community. We are unfair when we don't inform migrant workers that the pesticides they are using on our crops are harmful, and don't provide them with adequate protection.

Our response to environmental concerns must cause us to reflect on how our actions affect others, and take action to make sure that everyone is treated justly and fairly when it comes to God's creation. Taking a stand for environmental justice might involve the following actions:

- Starting or supporting an organization seeking environmental justice for people groups in your community.
- Helping an underprivileged community clean up litter or other forms of pollution, or helping to empower them by educating them about environmental concerns.
- Making sure women have equal access to a clean environment, particularly in other countries where they often spend long hours gathering wood and water, or cooking in a confined room filled with smoke that contains toxic substances. Provide them with clean, renewable energy sources, such as those provided by solar cookers.
- Starting a ministry to help families that are affected by lead or mercury poisoning or other environmental health concerns, particularly those that affect children and pregnant mothers.
- Encouraging fair treatment of all people groups during town meetings where decisions are made regarding construction of new facilities or other projects that might have environmental and health impacts.
- Making sure all of your employees or workers have equal access to safety equipment to protect themselves from harmful pollution on the job.
- Having an information booth at your church or school to inform people in the community about environmental health hazards.

Education

The Bible encourages us to train our children in the way they should go, so that when they are older, they will not depart from it. One way that we have desperately failed our future generations is that we have not taught them to take care of God's creation. Here are some ways that we can train our future generations to be the stewards and caretakers God intended them to be:

- Add lessons on creation care to our Sunday School curriculum, children's church and youth programs, and Sunday morning messages. If we don't make it important, they won't.
- Get your children involved in environmental education programs in your community where they can learn about wildlife, trees, flowers, and protected areas in your backyard.
- Have a special summer program, camp, or Bible school centered on the theme of caring for God's creation and for one another.

- Get your youth involved in neighborhood cleanups, tree planting and backyard wildlife projects, recycling programs, and trail maintenance for a local land trust or conservation organization.
- Organize an Earth Day (or Creation Sunday) celebration that teaches the Christian principles of creation care to the community.

EVANGELISM

Most environmentalists think that Christians do not care about the environment. Just think what a powerful witness it would be to your community if we Christians treated the environment as if it really was God's creation.

Romans 1:20 states that all of creation testifies to the presence of a divinely powerful Creator. You can get a sense of this by reading the psalms of David. As David observed creation, he could not help but believe that there was a powerful being that had set all of creation in motion and loving continued to care for it. Imagine what could happen if we immersed people in nature and allowed God to speak to them through what he has made. It might open up doors for us to introduce them to the Creator we know, love, and follow.

One way we can be compassionate to the destitute around the world is to address environmental concerns. Poverty is both a cause and result of environmental degradation. Overconsumption and inequitable distribution of resources also contribute to poverty. Where the environment is stressed or severely damaged, Christians can be "salt and light", bringing a message of hope while working with local people to address environmental concerns that affect their quality of life. Extending compassion in this way can open doors for evangelism where traditional methods may not succeed.

CHAPTER 4: THE CHURCH'S RESPONSE

Jonathan Twining

Just as individuals must respond to the call to care for creation and change their lifestyle, so must the church as a corporate body. The church should be a public witness to the awesomeness of the Creator and his mandate to care for all that He has made. In this section, we discuss some of the ways that the church can commit to caring for God's creation.

If we want to encourage the Church of the Nazarene worldwide to reflect a commitment to caring for God's creation, here are some steps we should consider taking:

- Encourage the local church to consider its role in restoring God's creation within the community in which it is located, and take appropriate actions that reflect this as a public witness to the community. Examples include litter cleanups, recycling programs, energy and water conservation, appropriate land-use planning, and participation in town meetings that relate to conservation issues.
- Develop educational resources that pertain to creation care and ecological justice for Sunday Schools, Bible studies, small group fellowships, men's and women's ministries, missions groups, and compassionate ministries teams.
- Emphasize care for creation and the human community within the Stewardship Ministries of the Church of the Nazarene.
- Churches and church-related ministries, including colleges and universities, should promote and facilitate an understanding of creation care issues, and operate their facilities in a manner that is consistent with best creation care practices.
- Educational institutions within the Church of the Nazarene, including colleges, universities, and seminaries, could introduce creation care themes into academic courses, as well as the activities of campus ministries. Theologians should devote serious study to the theology of creation care and appropriate responses to environmental issues. Pastors can be a key element in teaching and leading local congregations to take the lead in the community of taking care of and conserving the natural resources.
- Integrate environmental concerns into the orientation and continuing education programs of missionaries and compassionate ministries coordinators. In addition, create opportunities for mission personnel with expertise in ecology, environmental science, theology of creation care, and sustainable development.
- Encourage development of Compassionate Ministry Centers that include care for creation as well as ministry to the human community.

Here are some ideas for engaging the local church in creation care that have been used successfully by other churches and ministry organizations:

1. *Recycling project* – Develop a recycling project that includes household guides so that people will learn to recycle items in accordance with local laws and requirements.

2. *Litter cleanup* – Find an area that needs to be cleaned up in your community and organize the cleanup. Local environmental organizations may provide gloves and bags.
3. *Information table* – Establish a creation care information center with fact sheets and flyers about important ecological concerns. Many of these informational pieces can be found on web sites like the Evangelical Environmental Network and the Environmental Protection Agency.
4. *Investing responsibly* – Research and encourage socially responsible investing for the church and its members. Encourage morally responsible investing firms to include creation care in their investment portfolios.
5. *Lifestyle change* – Covenant together to live a simpler, less-consumptive lifestyle. Form or join a co-op, share resources that most people use infrequently, and start a community garden that can help meet the needs of the poor in your church and community.
6. *Education* – Find or develop resources for Sunday school, youth groups, Boy Scout troops, or other ministries that help members of all age groups understand their responsibility to care for God's creation.
7. *Worship* – Include care for God's creation as a theme for music, prayer, and preaching, especially on Creation Sunday, celebrated on the Sunday closest to Earth Day (April 22).
8. *Fellowship dinners* – Encourage all fellowship activities of the church to become more creation friendly. Try having a vegetarian dinner, with a prize for the tastiest dish. Use energy efficient cooking methods, such as solar cookers, to make portions of the meal. Avoid using paper products and Styrofoam. Dinner should be served with plates, cups, utensils, and napkins that are washable and reusable.
9. *Celebrations* – Have those that are talented in the arts develop specific programs that encourage creation care through poetry, painting, music, and other artistic expressions.
10. *Support* – Raise money to support a local environmental organization, a Nazarene environmental project in the US or overseas, a Christian environmental organization, or a Compassionate Ministry Center that emphasizes creation care.
11. *Participation in town government* – Get involved in local environmental decisions by participating in town meetings and public hearings that involve environmental issues. Serve on the boards or volunteer for Conservation Commissions and Land Trusts.
12. *Audit of church facilities* – Conduct an environmental audit of church facilities to ensure that they reflect a commitment to creation care.
13. *Wildlife* – Make your church grounds friendly for wildlife, especially if you are in an urban area. Establish a butterfly garden. Place bird feeders throughout the church grounds.
14. *Hiking* – Sponsor a nature hike on conservation land in your local community.

CHAPTER 5: CREATION CARE SUCCESS STORIES

We wanted to share with you a few success stories to show you how creation care might begin in your own community. We hope these stories inspire you to take action to protect and restore God's creation wherever you live.

THE EXAMPLE OF PLNU RECYCLING

From Michael Mooring

Point Loma Nazarene University (PLNU) is a liberal arts Christian college located beside the Pacific Ocean in San Diego, California. For many years, the recycling of paper across campus was spotty and sporadic, and the recycling of glass, plastics, metal, and other items was nonexistent. Under the leadership of President Bob Brower, PLNU identified the stewardship of resources as a core value as the University entered into its second hundred years. In 2003, a student activist, an English professor, and the director of the Physical Plant lobbied for the university to do more about recycling. In response, President Brower appointed PLNU's first Resource Stewardship Task Force. The goal was to recycle sustainable resources so as to cut down the huge stream of waste into the local landfill, and to increase the quantity and quality of conversation on campus about environmental stewardship. During the first year, the main push was to get a comprehensive, single-stream recycling program up and going in all the buildings of the main campus. The student activist, Celeste Howe, was appointed the student coordinator of the recycling program. Appeals were made to various groups on campus for participation in the new recycling effort because of the biblical mandate to care for creation. The Task force sponsored a Creation Care Week in the spring to heighten awareness of Christian environmental stewardship through an outdoor clean-up project, lectures and films, a food waste exhibit, a benefit dinner for Floresta, a fair for local environmental groups, and a musical event. During this first school term, the amount of garbage being sent to the landfill was reduced by 50% as students, faculty, and staff across the campus responded to the call to recycle. In less than a year, the school won two prestigious awards. The City of San Diego awarded PLNU its Recycler of the Year award in recognition for a business that makes significant efforts to recycle its waste, and the State of California recognized PLNU by bestowing its WRAP (Waste Reduction Awards Program) award for its efforts in waste reduction. In 2005, the University received the City of San Diego's Director's Award for their continuing recycling efforts, which have now achieved a 70% diversion of waste into the landfill compared with 2003. PLNU is now recognized as an environmentally friendly Christian community that encourages stewardship of its environment by waste reduction and recycling.

ROMANIA

From Jonathan Twining, President of Marah International:

"My wife and I began working with youth in Romania when I was teaching at Eastern Nazarene College, and this work continues today through Marah International. Working with Roberta Bustin, the pastor of the Church of the Nazarene in Sighisoara, we established an Ecology Club to help young people recognize the environmental concerns in Sighisoara and become part of the solution for their community. Through ENC and later through Marah International, we donated educational materials and scientific equipment so they could monitor water quality in their community. We helped them organize cleanups to remove garbage from vacant lots and streams. And we taught them to appreciate the beauty and wonder of God's

creation. Through the Ecology Club, several young people came to know the Lord and are serving Him today. Two of them are in Nazarene colleges, and one will be going to European Nazarene College next year. In their applications for admission, they cite the Ecology Club as the reason that they came to know and serve the Lord.”

“Let me give you just one example of how we have impacted the lives of these young people. I remember a day when we took about 15 Romanian young people to a small village near Sighisoara to clean up a stream that had become horribly polluted with all kinds of trash. At one point in the afternoon, I stood next to a young Romanian man named Sam Golea. As he was looking at what had become of that stream, he shook his head and began to cry a little bit. He said to me, ‘I am so ashamed of what we have done to God’s creation here in Romania.’ That was an incredibly important moment in that young man’s life. His eyes had been opened, and he saw for the first time that he was, in part, responsible for the pollution that lay before him. Sam will never forget what he saw and felt that day as long as he lives.”

“But the story doesn’t end there. I remember showing Sam the part of the stream where the trash had not yet been removed, and then pointing to the other end of the stream where the trash had been removed by the team. I encouraged Sam by saying, ‘It is great that you recognize that you have been part of the problem, but the important thing is that today, you have become part of the solution. Turn your head, Sam, and look at the part of the stream where you have been working today.’ I remember the smile that came across his face as he looked with pride upon the work that had been accomplished. With renewed effort, he joined his colleagues and finished cleaning up that little stream. That day was a turning point in Sam’s life. He became actively involved in the Church of the Nazarene as a worship leader and translator. Today Sam is studying at Mount Vernon Nazarene University. And in his testimony, he tells people that he would not be a Christian today if it had not been for the Ecology Club we started in Romania with Roberta Bustin.”

"Here is an important point for pastors and church leaders: the Ecology Club in Sighisoara would not have had the same impact on the lives of young people if the pastor and leaders had not had a vision for how creation care could be used for community outreach. Pastor Roberta Bustin was absolutely crucial to the success of this program, because after we left, it was Roberta that kept the Ecology Club going until some Romanian leaders could be established for the club. Without her insight into the environmental problems in her community, and her willingness to pursue creation care as an avenue to demonstrate Christ's compassion to young people, these young people might never have come to know Jesus. Now, as God is using her and others to build a new church in a nearby village, she has asked Marah International to come and teach the young people in that village about God's loves for his creation and our part in taking care of it."

MOZAMBIQUE

One Nazarene missionary family that has been helping creation through Marah International and the Nazarenes In Volunteer Service program is the Restricks in Mozambique. Beth Restrick was on assignment through July 2003 as a Nazarene in Voluntary Service at the Nazarene Theological Seminary in Maputo, Mozambique. Mozambique is one of the poorest countries in the world, and there are significant environmental and health problems that face its people. Although her NIVS assignment involved improvements to the library services at the seminary, in her spare time, she and her mother, Rhoda, introduced the seminary students to solar cooking. Why solar cooking, you might ask? Most of the women in countries like Mozambique spend many hours every day gathering water and wood for cooking, then spend the rest of their time tending a hot, smoky fire to prepare their meal. When dead wood becomes scarce, people cut down trees to obtain their wood, sometimes to the point that the land becomes barren. Haiti,

for example, has only 1% of its rainforest left. Deforestation leads to many other problems, such as excessive flooding, erosion of farmland, and loss of other important species.

Solar cooking, on the other hand, does not require time to gather fuel or prepare the meal. The food is simply placed in a black pot inside the cooker, and the sun does the rest of the work. The cookers can be made from cardboard and aluminum foil. Use of the cookers reduces deforestation and does not have any environmental health effects. It is a safe, efficient, and clean form of cooking that protects God's creation in areas where they cannot afford the loss of more natural resources.

HAITI

Another success story about solar cookers comes from David Blowers, the Nazarene Compassionate Ministries Coordinator for Haiti. In 2001, David partnered with the Free Methodist church to introduce solar cooking by way of a seminar to Nazarenes in Haiti. The objectives of the seminar were to present the people with 1) a Biblical orientation to stewardship of the environment; 2) give training and hands on experience with use of two alternatives to charcoal: first, solar cookers and second, organic briquettes.

Participants constructed two solar cookers from cardboard and aluminum foil. Conferees were provided with a pattern and traced the pattern onto a sheet of cardboard. The students were shown how to fabricate the same cooker with 9 small pieces of cardboard. After the cooker was traced, they spread regular white Elmer's Glue across the dull side of aluminum foil, and glued it to the pattern. It takes about 1- 4 oz. bottle of Elmer's Glue per cooker, and one 25 ft. roll of aluminum foil. The pattern provides two slots through which the "wings" are inserted to provide the "box". This pattern is based on a scientifically designed pattern to maximize concentration of solar energy. The seminar provided a grill, to get the pot up off the "floor" of the box. The grill was fabricated in Haiti, as was the black, enamel, thin-sided pot used for cooking. The food was prepared and placed in the enamel pot. The pot was then placed inside of an oven bag, which was a basic turkey bag like those we use in the US to cook Thanksgiving turkeys. The bag was twisted tight and tied, with air captured inside. The seminar also provided an oven thermometer which was placed inside the bag on top of the pot. The cardboard/aluminum foil cookers reach 225-275°F. Depending on the season, one may have to adjust the alignment of the cooker for movement of the sun during the cooking period.

Participants prepared meals each day, and the noon meal consisted of the food, which had been prepared and placed in solar cookers in the morning. David said, "I wish you could have seen the participants on the second day when they opened the pots of rice that they had cooked in the cooker they had made the day before. They hooted and hollered like a bunch of kids." There was great excitement about the fact that the rice was not sticky, but well cooked and textured. They also prepared and cooked chicken "creole" each day as well as beans for the rice.

David considered the seminar to be very successful. The trainers commented positively on the level of enthusiasm shown by our people. Several of the seminar participants planned to demonstrate these cookers at various events in the months following the seminar. However, David cautions that the extent of use for these solar cookers is not yet known, and it is important for the Haitians to fully accept this technology before its use can become widespread.

BELIZE

Imagine what your life would be like without electricity. No lighting, no air conditioners, no refrigerators, no TV's, no DVD players. Imagine spending up to 1/3 of your monthly salary for batteries to power electric devices; batteries that pollute the local environment when they are

carelessly discarded. And imagine doing your cooking over a hot, smoky indoor fire that dramatically increases the likelihood of you and your children having a life-threatening respiratory illness.

Sadly, that is the case for nearly 400 million families worldwide having no access to electricity, including Nazarene pastors and churches in rural areas of Belize (Central America). A Nazarene layman by the name of Alan Watkins from a church in Florida recognized that a promising possibility in sunny regions of the world like Belize is the use of solar power to provide electricity for families that live in remote areas away from the power grid. Using his skills as an electrician, he has learned how to make small-scale solar systems that can provide enough electricity to give each home enough power for one light bulb and one fan. He then raised the funds through his local church, including \$3,300 from NCM Inc. that was channeled through Marah International, to equip four pastors' homes and two churches with solar power. Yet another great example of how God can use the skills that you have to help others and His creation at the same time.

CONCLUSION

Fletcher L. Tink

Many Nazarenes are becoming ecologically aware, driven by new realities of hurricanes, famine, floods, and fears of nuclear, biological and chemical doomsday scenarios that seem imminent. They are asking thoughtful questions about the Christian's role in these areas. Do we put our heads in the sand? Do we engage in political rhetoric? Do we live in nagging anxiety? Or do we offer a Biblically-informed response that fashions practical stewardship?

We are also becoming aware of brothers and sisters both Christian and non-Christian, from around the globe who hold different perspectives on these matters, sometimes with acute sensitivity, sometimes with careless disinterest, sometimes with accusatory fingers pointed at those of us perceived as the greatest consumers and polluters of the earth's natural properties. These material advantages that we accept so casually are seen by others as squandered resources. These friends demand from us some thoughtfulness about a Gospel that offers good news that bores not only into our spiritual lives but also into our ecological context.

Repeatedly the psalmist breaks into jubilation, celebrating his confidence that "The earth is the Lord's and everything in it, the world, and all who live in it" (Ps 24:1). David knew of bloodshed and violence, of corruption and contamination. But in a simpler society, he recognized his daily dependency on the health of the land to provide the very means of existence on a daily basis. He found it a rich gracious gift hand-delivered from God himself.

What if, on the day of final accountability, God would confront us, the Christian church, about our response to the "redemptive mandate," of going into all the world, preaching the Gospel to all peoples, what would we say? But then what if he would follow up his query with a second question about our response to his earlier "creative mandate," that ordained us to "be fruitful and multiply," "name the species," "till the land," in short, care for his garden. What if all we could present to him was a blighted earth, denuded hills, polluted waters, contaminated air, trashed communities, wastelands of toxic dumps, and the weariness of exhausted resources? Might he not respond as he did to the servant who stashed his mina⁴ in a piece of cloth, doing nothing to enhance its value (Luke 19:12-17) for the master's gain?

The earth is our "mina". God has loaned it to us to use graciously, redemptively, and jubilantly, not for exploiting, but as a testimony of his good bounty extended to all humankind. It is not in the grand gestures that we forge change, but in the transformation of attitude and perspective that results in the daily duty of creation care in ways that honor the Creator and offer fair and kind treatment to all that he has made.

⁴ A mina is a unit of money translated elsewhere as "pounds" or \$2,000

Appendix 1: The Basics of Ecology and Environmental Science

God created all living things to be interconnected with one another and with their non-living surroundings in what scientists call an **ecosystem**. All of the living things that interact within an ecosystem make up a **community**. Within each community, there are **populations** of different species of creatures that live within the area defined by the ecosystem.

There are many types of ecosystems: grasslands, wetlands, tropical rainforests, temperate forests, coral reefs, mangrove swamps, estuaries, arctic tundra, deserts, rivers and streams, lakes, and several zones within the ocean. The differences between these ecosystems are usually based on abiotic (non-living) factors such as rainfall and temperature.

Within every ecosystem, creatures live in a specific **habitat**, where they find the food, water, shelter, space, and other things they need to survive and reproduce. Every organism also has a specific **niche**, or role, that they play within their habitat – soil builders, air conditioners (trees), decomposers, predators, controlling the numbers of other creatures, leaf shredders, and so on. These niches can be very general, but others are very specific to avoid **competition** with other creatures over the same resources. Because all living creatures depend on one another, if one of these roles is missing, it can affect the entire ecosystem.

The ultimate source of energy for all living things is the sun. Plants, trees, and algae are called “**producers**” because they can use sunlight energy to convert carbon dioxide and water into sugars. In the process, they give off oxygen, which all other living things need to survive. Creatures that eat plants are called “**herbivores**” or “**primary consumers**”. They cannot make their own food, so they must obtain it by eating the plants. Other animals must obtain their energy by eating other animals. These are called “**carnivores**” or “**secondary consumers**”. The path that energy flows from producers to consumers is called a “**food chain**”. Because all living creatures depend on one another, these food chains overlap, forming complex food webs that provide for the needs of every creature.

Creatures have special adaptations that allow them to survive within their environment and interact with other organisms. Some have camouflage that allows them to blend in to their surroundings. Others have bright coloration to ward off predators, or actually look remarkably like other, more dangerous creatures. Still others form close, physical relationships with another species, which is called **symbiosis**.

Populations of organisms fluctuate as a result of changes in the environment or biological factors such as birth rate, death rate, and immigration. The success of a population may be affected by limiting factors that limit the growth of a population; for example, salt, light availability, pollution, excessive predation, and so on. All populations also are limited by the amount of space and the number of resources available to them. The size of a population can reach its **carrying capacity**, which is the maximum size it can reach given the amount of space and resources available.

Human actions can either help or enhance the natural functions of ecosystems, or they can cause detrimental harm. Here are a number of ways that humans can have a negative impact on the rest of creation:

Air Pollution – There are many kinds of air pollution that are created by the processes we use to manufacture new products and generate power. One of the most visible and harmful of air pollutants are the chemicals that form smog, many of which come from automobiles. Smog and other air pollutants cause respiratory illnesses and are particularly harmful to children and the elderly.

Acid Rain – One form of air pollution is acid precipitation, or acid rain. Many of the fossil fuels we burn for energy contain compounds of sulfur and nitrogen. When these compounds mix with rain in the atmosphere, they create sulfuric and nitric acids. Acid rain is very harmful to the creatures that live in lakes and ponds, and causes damage to trees, monuments, and buildings.

Global Climate Change – Another environmental problem that is related to air pollution is global climate change. There is an increasing body of evidence, which suggests that the temperature of the earth's atmosphere has been rising steadily over the past 100 years. Earth's temperature is regulated by the amounts of certain gases in the atmosphere that trap heat in a process called the "greenhouse effect". While this is a natural process, there is concern that human activities, particularly the burning of fossil fuels (coal, oil, natural gas), has led to a tremendous increase in the amount of carbon dioxide in the atmosphere, causing temperatures to rise. There is a great deal of uncertainty and disagreement in the scientific world as to whether humans are causing this temperature increase. Using models to predict what might happen if the earth's temperature rises too much, some scientists believe there could be catastrophic changes in the earth's climate. Effects from these changes might include a rise in sea levels that might cause particular problems for coastal populations and island nations, extreme weather events, loss of species adapted to current temperatures, and a shift in agriculture northward to accommodate the changes in climate.

Water Pollution – When humans add their waste products to water, the water may no longer be fit for drinking or bathing, and the wastes may cause harm to the creatures that make the water their home. This is not only true for surface water bodies, like rivers and lakes, but is also true for the water beneath the ground in natural reservoirs called "aquifers". It is from these aquifers that humans get the water from wells. Common water pollutants include human and animal wastes, metals, oil and gasoline, pesticides, and fertilizers, amongst others. These pollutants can be very dangerous to humans and the rest of creation, as they may make people sick. Contamination of water and food causes many bacterial diseases that are major health risks for poor people in the developing world.

Water Scarcity – Water a precious commodity. Only about 0.1% of all the water in the world is actually freshwater that is available for our consumption. When we extract too much water from a lake, pond, or groundwater, and do not give natural processes enough time to replenish the water, we rapidly deplete the resource. When we add in the problem of water pollution, the availability of fresh water to drink and to provide for the needs of the rest of creation is severely reduced.

Agriculture – While agriculture is certainly necessary for growing food to feed the people of the world, if not done carefully, it can cause significant environmental damage. Soil erosion is a considerable problem when agricultural fields are left without any vegetation to secure the soil in place. Soil erosion removes the most valuable topsoil, leaving behind marginal soils that often require the addition of fertilizers, which can run off into local rivers and cause algal blooms that deplete the oxygen that fish and other aquatic creatures depend upon. Pesticides are another

potential problem, because they are toxic not only to pests, but to other creatures and human beings as well. Many pesticides, particularly those like DDT that contain chlorine, do not break down rapidly in the environment, and may cause harm for long periods of time. Many pesticides that are no longer allowed in the United States are still sold overseas in developing countries, where people are not trained to understand the hazards associated with these chemicals.

Garbage and Hazardous Wastes – Garbage can simply be defined as anything that has outlived its usefulness or is no longer wanted. Garbage is usually composed of items made of glass, plastic, metal, paper or wood, and once-living materials, especially food items. Beyond these typical items, there are also chemical and radioactive wastes that are produced by manufacturing processes. When any of these wastes get into the environment, they can cause harm to both people and the rest of creation. Plastic items, such as bottles, fishing line, and six-pack rings, can actually choke or incapacitate wildlife, particularly in the ocean. Chemical and radioactive wastes can seep into groundwater and contaminate drinking water supplies, or remain in soil, where people and wildlife can become exposed to their hazardous effects. Many chemicals and radioactive materials can cause birth defects, mutations, cancer, and other severe consequences. Some chemicals will accumulate at higher concentrations in top predators as they eat contaminated prey – a process called *biomagnification*. These chemicals can have detrimental effects of these predators, such as the thinning of egg shells in predatory birds, and hormone disruption in alligators.

Toxic Materials – Many of the products we crave require the use of toxic materials in their manufacturing process. We also use toxic materials for other purposes, including cleaning, lawn and garden care, automobile maintenance, and home building. When these materials are released into our homes and the environment around us, they can cause people to get sick and be detrimental to other living creatures as well. Some of the more problematic toxic materials include lead (batteries, paint, pottery glazes), mercury (thermometers), pesticides, arsenic (naturally occurring or from pesticides), and radon (naturally occurring radioactive gas), to name a few.

Deforestation – People around the world rely on wood for many of the products we use, as well as for food. However, when entire sections of forests are cut down, called clear-cutting, there may be disastrous effects on the surrounding ecosystem. Forests retain water, and keep soil anchored firmly in place. When the forest is removed, the results may include increased flooding, soil erosion, and the loss of species that depended on the forest. Many species have become extinct when rainforests have been clear-cut. The removal of forests also has a tremendous impact on streams and rivers, as they depend on the fallen leaves of the trees as the basis for their food chain. The soil eroding from the land also chokes out life in the rivers as they handle huge increases in sediment.

Loss of Biodiversity and Habitat – There are many reasons that many creatures are in danger of becoming extinct, and the earth is experiencing a loss in biodiversity (the numbers of different types of creatures that live on this planet). Perhaps one of the biggest threats to the survival of many species is the loss of their habitat from unchecked economic development, deforestation, urban sprawl, and pollution. If an organism can no longer find the food, water, shelter, and suitable nesting/breeding areas, they have three choices: adapt, migrate, or die. Because most organisms cannot adapt fast enough to keep up with human influences, they must move out of the area or face extinction. Other threats include non-native, invasive species that push out the native

species and do not provide the same value to the ecosystem. Overharvesting can also reduce populations of species to levels where they are unable to survive and/or reproduce.

Desertification – When farmers are forced to grow food in dry areas that are only marginally able to support crops, these areas may turn into deserts that are unable to support plant growth. This typically happens in the drier regions that surround deserts, so the deserts are actually expanding outward.

There are many other environmental concerns that could be mentioned here, but those presented will give you the main idea that humans can have quite a negative impact on the natural ecosystems that God has put in place throughout creation.

Humans can have a positive, or redeeming, impact on creation as well, particularly where creation has become damaged and is not fulfilling its God-intended purpose and is no longer being “fruitful”. Here is a list of just a few of the ways humans can benefit creation. More will be discussed in the sections about individual and church responses to creation care.

- Restoring damaged habitat by planting new trees and plants that are native to the damaged area.
- Protecting sensitive areas as conservation land, or placing a conservation easement on a property to keep it from being developed.
- Captive breeding programs and protected wildlife conservation areas that help to bring back species that are on the brink of extinction.
- Cleaning up pollution to levels that will pose no threat to humans or the environment.
- Passing laws that will prevent creation from being damaged and provide for the restoration of areas that have already been impacted by human activities.
- Teaching the next generation so they can learn from our mistakes.
- Farming in such a way that the soil is not eroded away and nutrients are naturally replaced in the soil without the use of fertilizers.

Appendix 2:

Further information from the Environmental Protection Agency and the Evangelical Environmental Network

Air Pollution:

- More than one in three Americans live in areas with unhealthy air, and in many areas it is getting worse, especially in poorer neighborhoods. Nitrogen oxides (forms smog) have increased 11% between 1970 and 1997. Sulfur dioxide emissions (results in fine particulate pollution or soot) increased in 1996-98 to more than 9% over 1995 levels.
- For the first time recent studies have linked air pollution to:
 - The risk of dying from cancer;
 - Harming the blood vessels of healthy individuals;
 - Low birth weight, premature births, stillbirths and infant deaths;
 - Healthy, active children becoming 3-4 times more likely to develop asthma;
 - Measurable lung damage in healthy children, which could lead to lung disease.
- Estimates are that soot results in 15,000 premature deaths every year.
- Smog and soot hit asthma sufferers the hardest. As air pollution has increased, so have asthma cases - by more than 60% since 1980. Between 1985 and 1995 there was a 45.3% increase in asthma deaths. The total estimated cost of asthma in 1993 was \$12.6 billion.
- Asthma death rates for black Americans are three times that of whites.
- One out of every three asthma victims is a child. Seven percent of children suffer from asthma, which is the number one cause of school absences. In 1994, this resulted in \$673 million in caretaker's time lost from work.
- Mercury contamination has forced 40 states to warn their residents to restrict their fish consumption. Especially vulnerable are women of childbearing age, pregnant and lactating women, children and populations that consume large amounts of fish such as Native Americans and the poor.
- Air pollution causes other damage to creation, including forest damage from acid rain, ozone eutrophication (overfertilization from nitrogen) of lakes and ponds, loss of fish and other aquatic species from acidification, and reproductive failures caused by mercury in fish and in birds that eat fish.

Acid Rain:

Acid rain is caused when fossil fuel emissions combine with water in the atmosphere. The environmental effects of acid rain include the acidification of lakes and streams, damage to trees at high altitude, the acceleration of decay in buildings and poorer air quality. Acid Rain also poses serious human health risks by contributing to heart and lung disorders such as asthma and bronchitis.

Ozone Depletion:

Reductions in ozone levels will lead to higher levels of UVB reaching the Earth's surface. The sun's output of UVB does not change; rather, less ozone means less protection, and hence more UVB reaches the Earth. Studies have shown that in the Antarctic, the amount of UVB measured at the surface can double during the annual ozone hole. Another study confirmed the relationship between reduced ozone and increased UVB levels in Canada during the past several years.

Health: Laboratory and epidemiological studies demonstrate that UVB causes nonmelanoma skin cancer and plays a major role in malignant melanoma development. In addition, UVB has been linked to cataracts. All sunlight contains some UVB, even with normal ozone levels. It is always important to limit exposure to the sun. However, ozone depletion will increase the amount of UVB and the risk of health effects.

Also affects plant growth and marine life negatively.

Water Pollution & Water Scarcity:

- Over 1,000,000,000 people still lack access to safe water, and nearly twice that lack safe sanitation. More than three million people still die every year from avoidable water-related disease.
- Global water consumption rose sixfold between 1900 and 1995— more than double the rate of population growth – and continues to grow rapidly as agricultural, industrial, and domestic demand increases.
- The majority of the world's population lives near and depends on freshwater environments, with most inland cities lying adjacent to a river or lake. In addition to being biologically rich, freshwater systems play a vital role in the lives of many people, providing a source of water, food, and employment. About 6 percent of the world's fish catch, or 7 million metric tons per year, come from rivers and lakes, as well as the bulk of the world's irrigation water.
- More than 40 percent of the world's population lives in conditions of water stress. This percentage is estimated to grow to almost 50 percent by 2025.
- Of the 19 countries around the world currently classified as water-stressed, more are in Africa than in any other region.

Global Warming:

- Agricultural output in many poorer countries could be significantly reduced. An additional 80-90 million poor people could be at risk of hunger and malnutrition later in the 21st century.
- Poorer countries are much less able to withstand the devastation caused by extreme weather events, and climate change is likely to increase such events. For example, global warming could increase the number of people impacted by flooding by 20-50 million.
- Hundreds of millions of people will be at increased risk of malaria, dengue fever, yellow fever, encephalitis, and other infectious diseases because of global warming.
- Each of these stressors increases the likelihood of environmental refugees and violent conflicts.

- Up to 37% of God's land-based species could be committed to extinction by 2050, making global warming the largest single threat to biodiversity.

Oceans:

- Oceans occupy 70% of the earth's surface and are home to over 90% of all life on earth.
- Seafood is the primary source of protein for many coastal people. Worldwide, about 700 million persons are directly dependent upon fisheries for food.
- Nearly one third of the world's fisheries have collapsed or are near collapse because of overfishing. Nearly half of the world's fisheries are being fished at their maximum level.
- Many fish are caught before they are old enough to reproduce.
- Millions of tons of "by-catch" such as sea turtles and dolphins are hurt or killed each year, threatening their existence in some areas. ("By-catch" are creatures that are not intended to be caught but are caught anyway.)
- Scientists hope to identify many of the estimated million-plus species of life in the oceans (only a small fraction of which have been identified to date) through a comprehensive global study called the Census of Marine Life. This includes the expected identification of at least 5,000 new species of fish.
- Sewage is the largest source of contamination by volume of God's oceans.
- Worldwide approximately 250 million people become sick each year after eating contaminated fish or bathing or swimming in contaminated coastal waters. Even in coastal waters deemed swimmable, 5% of adults worldwide will become sick after a single swim.
- Air pollution from vehicles and industry, as it falls from the sky, contributes approximately half of the nitrogen pollution in oceans, and a significant portion of the mercury pollution. As developing countries industrialize, atmospheric pollution is expected to increase.
- Nitrogen levels in oceans are exacerbated by the widespread loss of natural interceptors such as coastal wetlands, coral reefs, and mangrove forests. In the United States 200,000 acres of coastal wetlands and estuaries are lost each year.
- So-called "dead zones," or oxygen-depleted areas resulting from nitrogen and other pollution, are increasing in frequency, intensity, and geographic distribution worldwide. In the United States each year, a dead zone the size of Massachusetts is created in the Gulf of Mexico. This year's dead zone in the Chesapeake Bay was the largest in the Bay's history. Dead zones now occur in almost every coastal state.
- Two-thirds of U.S. estuaries and bays are either moderately or severely degraded by pollution.
- Each year garbage dumped in God's oceans kills large numbers of sea birds, sea turtles, and marine mammals as they eat it or become entangled in it.
- Sprawl anywhere - not just near coastal areas - causes significant damage to God's oceans. Paved surfaces cause oil, grease, and other toxic pollutants to reach coastal waters. In the United States, every eight months nearly 11 million gallons of oil run off our streets and driveways into God's streams, rivers, and oceans - the equivalent of the Exxon Valdez oil spill. A one-acre parking lot produces about 16 times the volume of runoff that would come from a one-acre meadow.

- Coastal counties in the United States, which comprise just 17% of U.S. land, are home to more than half of the U.S. population. Sprawl development is consuming land at least five times as fast as population growth in many coastal areas.
- Worldwide nearly 40% of the world's population lives near a coast - more people than inhabited the earth in 1950.
- The poor living in coastal communities - the least able to deal with the multiple harmful consequences of global warming - will be the hardest hit. The consequences will be dire.
- Changes in water temperatures and other consequences of global warming (e.g. changes in salinity, nutrients, and sea level) have a profound effect upon marine species. For example, water temperature can have a direct effect on spawning and survival of larvae and juveniles as well as on fish growth.
- Marine mammals such as polar bears are "the canary in the coal mine" when it comes to changes in ocean environments. For polar bears, extended ice-free seasons in the Arctic due to global warming could reduce access to seals and lead to deaths from starvation.
- Increases in atmospheric temperature from global warming may slow or shut down the Atlantic's Gulf Stream, causing reductions in sea-surface and air temperatures over the North Atlantic and northern Europe.
- Coral reefs harbor more than 25% of all known marine fish, as well as a total species diversity containing more phyla than rainforests.
- Current estimates are that 10 percent of all coral reefs are degraded beyond recovery. Thirty percent are in critical condition and may die within 10 to 20 years. If current pressures continue unabated, 60 percent of the world's coral reefs may die completely by 2050.

God's Other Creatures:

- Worldwide, at least 15,589 species face extinction. However, this is certainly an underestimate, because it is based on assessments of only 3% of the world's 1.9 million species that have been described. A majority of the world's species have not been described.
- Although estimates vary greatly, current extinction rates are at least one hundred to a thousand times higher than background, or "natural" rates.
- There are major gaps in our knowledge of the status of threatened species. We know little about marine and freshwater systems, or many species-rich habitats (such as tropical forests or the ocean depths), or species-rich groups such as invertebrates, plants, and fungi (which together comprise the vast majority of species).
- Global trends indicate increases in the number and rate of extinctions of described species, and the main causes of extinction (such as habitat loss and exploitation) are increasing.
- One in eight birds and one in four mammals are known to be in jeopardy.
- One in three amphibians and almost half of all freshwater turtles are threatened.
- The first complete assessment of amphibians (i.e., frogs, toads, salamanders) reveals they are likely to be the most threatened vertebrates, with at least 1 in 5 species in the Critically Endangered or Endangered categories.
- Over one in five (21%) of the world's plant species may be threatened with extinction.

- Over one-third of all assessed North American invertebrate species are threatened with extinction. A current study indicates that the actual number of all threatened invertebrate species in North America may be five times this number.
- Most threatened bird, mammal, and amphibian species are located on tropical continents—Central and South America, Africa south of the Sahara, and tropical South and Southeast Asia. These regions contain the tropical broadleaf forests, which are believed to harbor the majority of the earth's living terrestrial and freshwater species.
- Countries that have the highest numbers of threatened species tend to be the least able to invest significant resources into conservation because they have relatively low gross national income. These include Brazil, Cameroon, China, Colombia, Ecuador, India, Indonesia, Madagascar, Peru, and the Philippines.
- A new survey of the world's oceans has confirmed that 90% of large predatory fish (such as sharks) in the world have been wiped out in the past 50 years because of commercial fishing.
- Industrialized fisheries typically reduced targeted fish populations by four-fifths within 15 years.
- Forest cover has been reduced by more than 20 percent worldwide, with some forest ecosystems, such as the dry tropical forests of Central America, virtually gone.
- Wetlands areas have shrunk by about half; and grasslands have been reduced by more than 90 percent in some areas.
- Insects comprise more than half of the world's species. Strong evidence suggests that huge numbers of insect species are disappearing, as are other species that depend upon them. Researchers in Britain discovered that 71% of butterfly species have declined or disappeared over the past 20 years, as well as 54% of birds. The past 40 years has seen declines in 28% of plants studied.
- A study published in the January 04 issue of *Nature* indicated that 15-37% of known land-based species could become "committed to extinction" by 2050 due to global warming.
- Humans have been the main cause of extinction and continue to be the principle threat to species at risk of extinction.
- Habitat loss, introduced species, over-exploitation, and pollution are the main threats, with human-induced climate change becoming an increasingly significant threat to species.

<http://www.creationcare.org/resources/sunday/facts.php>

Appendix 3:

GLOSSARY OF ECOLOGICAL AND ENVIRONMENTAL TERMS

Abiotic	The components of an ecosystem that have never been living.
Acid Rain	The mixture of compounds of sulfur and nitrogen with precipitation in the atmosphere, making the precipitation acidic.
Adaptation	Characteristics that help an organism survive in its environment.
Agroforestry	Planting trees and crops together.
Aquatic	Pertaining to water.
Aquifer	Layers of soil or rock that store water underneath the ground's surface (groundwater).
Arable land	Land that can be used to grow crops.
Biodegradable	Materials that can be broken down over time by naturally-occurring organisms, such as bacteria, fungi, and insects.
Biodiversity	The numbers of different types of varieties of living things found in an ecosystem.
Biomagnification	The increase in concentration of a chemical substance in organisms as you move higher up the food chain.
Biotic	The components of an ecosystem that are living or were once living.
Carcinogen	Chemicals, radiation, and viruses that can cause cancer.
Carrying capacity	The maximum population that a habitat can support over a given period of time.
Clear cutting	The cutting of all trees in an area at one time.
Compost	Partially decomposed plant and animal matter that can be used as a nutrient-rich fertilizer.
Community	All of the living things that are interacting together in a particular area at the same time.
Conservation tillage	Growing crops in soil which has been disturbed little or not at all to reduce soil erosion.

Contour farming	Plowing and planting across the slope of the land to retain water and soil.
Crop rotation	Planting a field with different crops annually to reduce depletion of soil nutrients.
Decomposers	Organisms that break down decaying, once-living material into simple substances, like water and carbon dioxide.
Deforestation	Removal of trees without adequately replanting new trees as replacements.
Desertification	Conversion of grazing lands or crop lands into desert-like land, with drop in agricultural productivity. Causes include overgrazing, drought, erosion, and changes in climate.
Ecology	The study of the interactions of living things between each other and their non-living surroundings.
Ecological succession	Process in which communities of plants and animals in a particular area are replaced over time by a series of different and often more complex communities.
Ecosystem	All of the living and non-living things that are interacting together in a particular area at the same time.
Endangered species	A species with so few survivors that the species may soon become extinct.
Extinction	The complete loss of a species from the earth.
Fertilizer	Chemical or natural substances that contain the nutrients essential for plant growth (nitrogen, phosphorus, potassium).
Food chain	A series of organisms that eat or decompose the preceding one.
Fossil fuels	Coal, oil, and natural gas.
Global climate change	The condition of the earth in which the earth's temperature has been rising steadily over the past one hundred years. ⁵
Gray water	Water that has been used in kitchen sinks and showers that has not been mixed with human sewage.

⁵ If this continues, there may be severe changes in the climate of the earth, including sea levels rising, more severe storms, and northward shifts in agriculture.

Green revolution	The introduction of scientifically bred or selected varieties of grain that can produce high yields if provided with sufficient fertilizer and water.
Habitat	The place where an organism finds its food, water, shelter, space, and other things it needs to survive and reproduce.
Hazard	Something that causes injury, disease, economic loss, or environmental damage.
Niche	The role that an organism plays in its ecosystem.
Nonrenewable resource	A resource that exists in fixed amounts, such that its supply can be exhausted over time. Examples include coal, oil, and natural gas.
Nutrients	Any material that a living organism must have in some amount to survive.
Organism	Any form of living creature.
Overgrazing	Destruction of plants due to excessive grazing in one particular area.
Photochemical smog	Complex mixture of air pollutants that form from the reaction of hydrocarbons and nitrogen oxides in the atmosphere. Ozone is an example.
Pollution	An undesirable change in the physical, chemical, or biological characteristics of air, water, soil, or food that can negatively affect health and survival of humans and other living things.
Population	All of the members of the same species that are living together in a particular area at the same time.
Range of tolerance	Range of chemical and physical conditions that must be maintained for a population to stay alive, grow, and function normally.
Recycling	Collecting and reprocessing a resource so that it can be made into new products.
Reuse	Using a product over and over again in the same form.
Species	Organisms that share the same basic characteristics and can breed together to form fertile offspring.
Subsistence farming	Being able to grow enough food to feed yourself and your family.
Sustainability	The ability of a system to survive over some specified time.
Sustainable agriculture	Method of growing crops and raising livestock based on organic

fertilizers, soil conservation, water conservation, biological control of pests, and minimal use of nonrenewable resources.

Sustainable development	Meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. Includes economic growth and activities that do not deplete or degrade the natural environment.
Sustainable living	Taking no more potentially renewable resources from the natural world than can be replenished naturally, and not overloading the capacity of the environment to cleanse and renew itself by natural processes.
Terracing	Planting crops on flat, shelf-like terraces on the sides of steep slopes.
Terrestrial	Pertaining to the land.
Toxic waste	A waste that can cause serious injury, sickness, or death (cancer, birth defects, burns, mutations).
Wetland	Land that is saturated or covered with water for all or part of the year. Examples include streams, lakes, ponds, marshes, swamps, vernal pools, and bogs.

Appendix 4: BIBLIOGRAPHY AND RESOURCES

The following books have been recommended because they contain much helpful information. All the views contained in them, however, have not necessarily been endorsed by the Church of the Nazarene, Nazarene Compassionate Ministry International, or the authors of this Handbook.

Braaten, Laurie J. "May the Glory of the Lord Endure Forever! Biblical Reflections on Creation Care," in *Perspectives on an Evolving Creation*, pp. 414-34. Edited by Keith B. Miller. Grand Rapids: Eerdmans, 2003.

Bratton, Susan Power. *Six Billion & More. Human Population Regulation and Christian Ethics*. Louisville: Westminster / John Knox, 1992.

Brower, Michael; and Warren, Leon. *The Consumer's Guide to Effective Environmental Choices: Practical Advice from the Union of Concerned Scientists*. New York: Three Rivers Press: 1999.

Berry, R.J. (2000). *The Care of Creation: Focusing Concern and Action*. Intervarsity Press.

Bouma-Prediger, S. (2001). *For the Beauty of the Earth: A Christian Vision for Creation Care*. Baker Academic Press.

Brodley, I. (1992). *God is Green: Ecology for Christians*. Image.

Cunningham, W., Cunningham, M., and Saigo, B. (2001). *Environmental Science: A Global Concern*. McGraw-Hill.

DeWitt, C. (1994). *Earth Wise: A Biblical Response to Environmental Issues*. Faith Alive Christian Resources.

During, Alan. *How Much Is Enough?: The Consumer Society and the Future of the Earth*. Worldwatch Environmental Alert Series. New York: Norton, 1992.

Foster, Richard J. *Freedom of Simplicity*. San Francisco: Harper, 1981.

Gage, S., Penn, B., Waters, C., Wilmot, P., and Gunn, D. (2004). *Footprint Files: Ideas to Help Congregations Care for Creation and Reduce Their Footprint*. Wood Lake Books.

Granburg-Michaelson, Wesley, editor. *Tending the Garden: Essays on the Gospel and the Earth*. Grand Rapids: Eerdmans, 1987.

Lodahl, Michael. *God of Nature and of Grace: Reading the world in a Wesleyan Way*. Kingswood Books, Nashville: Abingdon, 2003.

Martin-Schramm, J. and Stivers, R. (2003). *Christian Environmental Ethics: A Case Method Approach*. Orbis Books.

- Miller, G.T. (2003). *Living With The Environment: Principles, Connections, and Solutions*, 13th Edition. Brooks-Cole Publishers.
- Nash, J. (1991). *Loving Nature: Ecological Integrity and Christian Responsibility*. Abingdon Press.
- Powell, Samuel. *Participating in God: Creation and Trinity*. Theology and the Sciences. Minneapolis: Augsburg-Fortress, 2003.
- *A Theology of Christian Spirituality*. Abingdon Press, 2005.
- Redkop, Calvin, editor. *Creation & Environment. An Anabaptist Perspective on a Sustainable World*. Baltimore: Johns Hopkins, 2000.
- Rees, Williams E.; Wackernagel, Mathis. *Our Ecological Footprint: Reducing Human Impact on the Earth*. New Catalyst Bioregional Series. Stony Creek, Conn.: New Society Publishers, 1995.
- Sider, Ronald J. *Living More Simply. Biblical Principles & Practical Models*. Downers Grove: InterVarsity, 1980.
- Van Dyke, F., Mahan, D., Sheldon, J., and Brand, R. (1996). *Redeeming Creation: The Biblical Basis for Environmental Stewardship*. Intervarsity Press.
- White, V. (1997). *For God So Loves The World: Peacemaking and the Care of Creation*. Presbyterian Peacemaking Program.
- Wilkinson, Loren, editor. *Earth Keeping in the '90s. Stewardship of Creation*. Grand Rapids: Erdmans, 1991.

A Rocha <http://en.arocha.org/>
 Bridging the Gap <http://www.bridgingthegap.org/>
 Ecological Footprint Quiz <http://www.earthday.org/Footprint/>
 Evangelical Environmental Network <http://www.creationcare.org/>
 Food First <http://www.foodfirst.org/>
 Path to Freedom <http://www.pathtofreedom.com./>
 Redefining Progress <http://www.rprogress.org/>

Appendix 5:

On the Care of Creation

An Evangelical Declaration on the Care of Creation⁶

The Earth is the Lord's, and the fulness thereof - Psalm 24:1

As followers of Jesus Christ, committed to the full authority of the [Scriptures](#), and aware of the ways we have degraded creation, we believe that biblical faith is essential to the solution of our ecological problems.

Because we worship and honor the Creator, we seek to cherish and care for the creation.

Because we have sinned, we have failed in our stewardship of creation. Therefore we repent of the way we have polluted, distorted, or destroyed so much of the Creator's work.

Because in Christ, God has healed our alienation from Himself and extended to us the first fruits of the reconciliation of all things, we commit ourselves to working in the power of the Holy Spirit to share the Good News of Christ in word and deed, to work for the reconciliation of all people in Christ, and to extend Christ's healing to suffering creation.

Because we await the time when even the groaning creation will be restored to wholeness, we commit ourselves to work vigorously to protect and heal that creation for the honor and glory of the Creator—whom we know dimly through creation, but meet fully through Scripture and in Christ. We and our children face a growing crisis in the health of the creation in which we are embedded, and through which, by God's grace, we are sustained. Yet we continue to degrade that creation.

These degradations of creation can be summed up as 1) land degradation; 2) deforestation; 3) species extinction; 4) water degradation; 5) global toxification; 6) the alteration of atmosphere; 7) human and cultural degradation.

Many of these degradations are signs that we are pressing against the finite limits God has set for creation. With continued population growth, these degradations will become more severe. Our responsibility is not only to bear and nurture children, but to nurture their home on earth. We respect the institution of marriage as the way God has given to insure thoughtful procreation of children and their nurture to the glory of God.

We recognize that human poverty is both a cause and a consequence of environmental degradation.

Many concerned people, convinced that environmental problems are more spiritual than technological, are exploring the world's ideologies and religions in search of non-Christian spiritual resources for the healing of the earth. As followers of Jesus Christ, we believe that the Bible calls us to respond in four ways:

⁶ Used with permission from the Executive Director of the Evangelical Environmental Network

First, God calls us to confess and repent of attitudes which devalue creation, and which twist or ignore biblical revelation to support our misuse of it. Forgetting that "the earth is the Lord's," we have often simply used creation and forgotten our responsibility to care for it.

Second, our actions and attitudes toward the earth need to proceed from the center of our faith, and be rooted in the fullness of God's revelation in Christ and the Scriptures. We resist both ideologies which would presume the Gospel has nothing to do with the care of non-human creation and also ideologies which would reduce the Gospel to nothing more than the care of that creation.

Third, we seek carefully to learn all that the Bible tells us about the Creator, creation, and the human task. In our life and words we declare that full good news for all creation which is still waiting "with eager longing for the revealing of the children of God," (Rom. 8:19).

Fourth, we seek to understand what creation reveals about God's divinity, sustaining presence, and everlasting power, and what creation teaches us of its God-given order and the principles by which it works.

Thus we call on all those who are committed to the truth of the Gospel of Jesus Christ to affirm the following principles of biblical faith, and to seek ways of living out these principles in our personal lives, our churches, and society.

The cosmos, in all its beauty, wildness, and life-giving bounty, is the work of our personal and loving Creator.

Our creating God is prior to and other than creation, yet intimately involved with it, upholding each thing in its freedom, and all things in relationships of intricate complexity. God is transcendent, while lovingly sustaining each creature; and immanent, while wholly other than creation and not to be confused with it.

God the Creator is relational in very nature, revealed as three persons in One. Likewise, the creation which God intended is a symphony of individual creatures in harmonious relationship.

The Creator's concern is for all creatures. God declares all creation "good" (Gen. 1:31); promises care in a covenant with all creatures (Gen. 9:9-17); delights in creatures which have no human apparent usefulness (Job 39-41); and wills, in Christ, "to reconcile all things to himself" (Col.1:20).

Men, women, and children, have a unique responsibility to the Creator; at the same time we are creatures, shaped by the same processes and embedded in the same systems of physical, chemical, and biological interconnections which sustain other creatures.

Men, women, and children, created in God's image, also have a unique responsibility for creation. Our actions should both sustain creation's fruitfulness and preserve creation's powerful testimony to its Creator.

Our God-given, stewardly talents have often been warped from their intended purpose: that we know, name, keep and delight in God's creatures; that we nourish civilization in love, creativity

and obedience to God; and that we offer creation and civilization back in praise to the Creator. We have ignored our creaturely limits and have used the earth with greed, rather than care.

The earthly result of human sin has been a perverted stewardship, a patchwork of garden and wasteland in which the waste is increasing. "There is no faithfulness, no love, no acknowledgment of God in the land...Because of this the land mourns, and all who live in it waste away" (Hosea 4:1,3). Thus, one consequence of our misuse of the earth is an unjust denial of God's created bounty to other human beings, both now and in the future.

God's purpose in Christ is to heal and bring to wholeness not only persons but the entire created order. "For God was pleased to have all his fullness dwell in him, and through him to reconcile to himself all things, whether things on earth or things in heaven, by making peace through his blood shed on the cross" (Col. 1:19-20).

In Jesus Christ, believers are forgiven, transformed and brought into God's kingdom. "If anyone is in Christ, there is a new creation" (II Cor. 5:17). The presence of the kingdom of God is marked not only by renewed fellowship with God, but also by renewed harmony and justice between people, and by renewed harmony and justice between people and the rest of the created world. "You will go out in joy and be led forth in peace; the mountains and the hills will burst into song before you, and all the trees of the field will clap their hands" (Isa. 55:12).

We believe that in Christ there is hope, not only for men, women and children, but also for the rest of creation which is suffering from the consequences of human sin.

Therefore we call upon all Christians to reaffirm that all creation is God's; that God created it good; and that God is renewing it in Christ.

We encourage deeper reflection on the substantial biblical and theological teaching which speaks of God's work of redemption in terms of the renewal and completion of God's purpose in creation.

We seek a deeper reflection on the wonders of God's creation and the principles by which creation works. We also urge a careful consideration of how our corporate and individual actions respect and comply with God's ordinances for creation.

We encourage Christians to incorporate the extravagant creativity of God into their lives by increasing the nurturing role of beauty and the arts in their personal, ecclesiastical, and social patterns.

We urge individual Christians and churches to be centers of creation's care and renewal, both delighting in creation as God's gift, and enjoying it as God's provision, in ways which sustain and heal the damaged fabric of the creation which God has entrusted to us.

We recall Jesus' words that our lives do not consist in the abundance of our possessions, and therefore we urge followers of Jesus to resist the allure of wastefulness and overconsumption by making personal lifestyle choices that express humility, forbearance, self restraint and frugality.

We call on all Christians to work for godly, just, and sustainable economies which reflect God's sovereign economy and enable men, women and children to flourish along with all the diversity of creation. We recognize that poverty forces people to degrade creation in order to survive; therefore we support the development of just, free economies which empower the poor and create abundance without diminishing creation's bounty.

We commit ourselves to work for responsible public policies which embody the principles of biblical stewardship of creation.

We invite Christians—individuals, congregations and organizations—to join with us in this evangelical declaration on the environment, becoming a covenant people in an ever-widening circle of biblical care for creation.

We call upon Christians to listen to and work with all those who are concerned about the healing of creation, with an eagerness both to learn from them and also to share with them our conviction that the God whom all people sense in creation (Acts 17:27) is known fully only in the Word made flesh in Christ the living God who made and sustains all things.

We make this declaration knowing that until Christ returns to reconcile all things, we are called to be faithful stewards of God's good garden, our earthly home.

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Appendix 6: God's Earth is Sacred: An Open Letter to Church and Society in the United States

God's creation delivers unsettling news. Earth's climate is warming to dangerous levels; 90 percent of the world's fisheries have been depleted; coastal development and pollution are causing a sharp decline in ocean health; shrinking habitat threatens to extinguish thousands of species; over 95 percent of the contiguous United States forests have been lost; and almost half of the population in the United States lives in areas that do not meet national air quality standards. In recent years, the profound danger has grown, requiring us as theologians, pastors, and religious leaders to speak out and act with new urgency.

We are obliged to relate to Earth as God's creation "in ways that sustain life on the planet, provide for the [basic] needs of all humankind, and increase justice."¹ Over the past several decades, slowly but faithfully, the religious community in the United States has attempted to address issues of ecology and justice. Our faith groups have offered rich theological perspectives, considered moral issues through the lens of longstanding social teaching, and passed numerous policies within our own church bodies. While we honor the efforts in our churches, we have clearly failed to communicate the full measure and magnitude of Earth's environmental crisis—religiously, morally, or politically. It is painfully clear from the verifiable testimony of the world's scientists that our response has been inadequate to the scale and pace of Earth's degradation.

To continue to walk the current path of ecological destruction is not only folly; it is sin. As voiced by Ecumenical Patriarch Bartholomew, who has taken the lead among senior religious leaders in his concern for creation: "To commit a crime against the natural world is a sin. For humans to cause species to become extinct and to destroy the biological diversity of God's creation . . . for humans to degrade the integrity of Earth by causing changes in its climate, by stripping the Earth of its natural forests, or destroying its wetlands . . . for humans to injure other humans with disease . . . for humans to contaminate the Earth's waters, its land, its air, and its life, with poisonous substances . . . these are sins."² We have become un-creators. Earth is in jeopardy at our hands.

This means that ours is a theological crisis as well. We have listened to a false gospel that we continue to live out in our daily habits—a gospel that proclaims that God cares for the salvation of humans only and that our human calling is to exploit Earth for our own ends alone. This false gospel still finds its proud preachers and continues to capture its adherents among emboldened political leaders and policy makers.

The secular counterpart of this gospel rests in the conviction that humans can master the Earth. Our modern way of life assumes this mastery. However, the sobering truth is that we hardly have knowledge of, much less control over, the deep and long-term consequences of our human impacts upon the Earth. We have already sown the seeds for many of those consequences. The fruit of those seeds will be reaped by future generations of human beings, together with others in the community of life.

The imperative first step is to repent of our sins, in the presence of God and one another. This repentance of our social and ecological sins will acknowledge the special responsibility that falls to those of us who are citizens of the United States. Though only five percent of the planet's human population, we produce one quarter of the world's carbon emissions, consume a quarter of

its natural riches, and perpetuate scandalous inequities at home and abroad. We are a precious part of Earth's web of life, but we do not own the planet and we cannot transcend its requirements for regeneration on its own terms. We have not listened well to the Maker of Heaven and Earth.

The second step is to pursue a new journey together, with courage and joy. By God's grace, all things are made new. We can share in that renewal by clinging to God's trustworthy promise to restore and fulfill all that God creates and by walking, with God's help, a path different from our present course. To that end, we affirm our faith, propose a set of guiding norms, and call on our churches to rededicate themselves to this mission. We firmly believe that addressing the degradation of God's sacred Earth is *the* moral assignment of our time comparable to the Civil Rights struggles of the 1960s, the worldwide movement to achieve equality for women, or ongoing efforts to control weapons of mass destruction in a post-Hiroshima world.

Ecological Affirmations of Faith

We stand with awe and gratitude as members of God's bountiful and good creation. We rejoice in the splendor and mystery of countless species, our common creaturehood, and the interdependence of all that God makes. We believe that the Earth is home for all and that it has been created intrinsically good (Genesis 1).

We lament that the human species is shattering the splendid gifts of this web of life, ignoring our responsibility for the well being of all life, while destroying species and their habitats at a rate never before known in human history.

We believe that the Holy Spirit, who animates all of creation, breathes in us and can empower us to participate in working toward the flourishing of Earth's community of life. We believe that the people of God are called to forge ways of being human that enable socially just and ecologically sustainable communities to flourish for generations to come. And we believe in God's promise to fulfill all of creation, anticipating the reconciliation of all (Colossians 1:15), in accordance with God's promise (II Peter 3:13).

We lament that we have rejected this vocation, and have distorted our God-given abilities and knowledge in order to ransack and often destroy ecosystems and human communities rather than to protect, strengthen, and nourish them.

We believe that, in boundless love that hungers for justice, God in Jesus Christ acts to restore and redeem all creation (including human beings). God incarnate affirms all creation (John 1:14), which becomes a sacred window to eternity. In the cross and resurrection we know that God is drawn into life's most brutal and broken places and there brings forth healing and liberating power. That saving action restores right relationships among all members of "the whole creation" (Mark 16:15).

We confess that instead of living and proclaiming this salvation through our very lives and worship, we have abused and exploited the Earth and people on the margins of power and privilege, altering climates, extinguishing species, and jeopardizing Earth's capacity to sustain life as we know and love it.

We believe that the created world is sacred—a revelation of God's power and gracious presence filling all things. This sacred quality of creation demands moderation and sharing, urgent

antidotes for our excess in consumption and waste, reminding us that economic justice is an essential condition of ecological integrity.

We cling to God's trustworthy promise to restore, renew, and fulfill all that God creates. We long for and work toward the day when churches, as embodiments of Christ on Earth, will respond to the "groaning of creation" (Romans 8:22) and to God's passionate desire to "renew the face of the Earth" (Psalm 104:30).

We look forward to the day when the lamentations and groans of creation will be over, justice with peace will reign, humankind will nurture not betray the Earth, and all of creation will sing for joy.

Guiding Norms for Church and Society

These affirmations imply a challenge that is also a calling: to fulfill our vocation as moral images of God, reflections of divine love and justice charged to "serve and preserve" the Garden (Genesis 2:15). Given this charge and the urgent problems of our age—from species extinctions and mass poverty to climate change and health-crippling pollution—how shall we respond? What shall we be and do? What are the standards and practices of moral excellence that we ought to cultivate in our personal lives, our communities of faith, our social organizations, our businesses, and our political institutions? We affirm the following norms of social and environmental responsibility:

Justice—creating right relationships, both social and ecological, to ensure for all members of the Earth community the conditions required for their flourishing. Among human members, justice demands meeting the essential material needs and conditions for human dignity and social participation. In our global context, economic deprivation and ecological degradation are linked in a vicious cycle. We are compelled, therefore, to seek eco-justice, the integration of social justice and ecological integrity. The quest for ecojustice also implies the development of a set of human environmental rights, since one of the essential conditions of human well being is ecological integrity. These moral entitlements include protection of soils, air, and water from diverse pollutants; the preservation of biodiversity; and governmental actions ensuring the fair and frugal use of creation's riches.

Sustainability—living within the bounds of planetary capacities indefinitely, in fairness to both present and future generations of life. God's covenant is with humanity and all other living creatures "for all future generations" (Genesis 9:8-17). The concern for sustainability forces us to be responsible for the truly longterm impacts of our lifestyles and policies.

Bioresponsibility—extending the covenant of justice to include all other life forms as beloved creatures of God and as expressions of God's presence, wisdom, power, and glory. We do not determine nor declare creation's value, and other creatures should not be treated merely as instruments for our needs and wants. Other species have their own integrity. They deserve a "fair share" of Earth's bounty— a share that allows a biodiversity of life to thrive along with human communities.

Humility—recognizing, as an antidote to arrogance, the limits of human knowledge, technological ingenuity, and moral character. We are not the masters of creation. Knowing human capacities for error and evil, humility keeps our own species in check for the good of the whole of Earth as God's creation.

Generosity—sharing Earth’s riches to promote and defend the common good in recognition of God’s purposes for the whole creation and Christ’s gift of abundant life. Humans are not collections of isolated individuals, but rather communities of socially and ecologically interdependent beings. A measure of a good society is not whether it privileges those who already have much, but rather whether it privileges the most vulnerable members of creation. Essentially, these tasks require good government at all levels, from local to regional to national to international.

Frugality—restraining economic production and consumption for the sake of eco-justice. Living lives filled with God’s Spirit liberates us from the illusion of finding wholeness in the accumulation of material things and brings us to the reality of God’s just purposes. Frugality connotes moderation, sufficiency, and temperance. Many call it simplicity. It demands the careful conservation of Earth’s riches, comprehensive recycling, minimal harm to other species, material efficiency and the elimination of waste, and product durability. Frugality is the corrective to a cardinal vice of the age: prodigality – excessively taking from and wasting God’s creation. On a finite planet, frugality is an expression of love and an instrument for justice and sustainability: it enables all life to thrive together by sparing and sharing global goods.

Solidarity—acknowledging that we are increasingly bound together as a global community in which we bear responsibility for one another’s well being. The social and environmental problems of the age must be addressed with cooperative action at all levels—local, regional, national and international. Solidarity is a commitment to the global common good through international cooperation.

Compassion—sharing the joys and sufferings of all Earth’s members and making them our own. Members of the body of Christ see the face of Christ in the vulnerable and excluded. From compassion flows inclusive caring and careful service to meet the needs of others.

A Call to Action: Healing the Earth and Providing a Just and Sustainable Society

For too long, we, our Christian brothers and sisters, and many people of good will have relegated care and justice for the Earth to the periphery of our concerns. This is *not* a competing “program alternative,” one “issue” among many. In this most critical moment in Earth’s history, we are convinced that *the central moral imperative* of our time is the care for Earth as God’s creation. Churches, as communities of God’s people in the world, are called to exist as representatives of the loving Creator, Sustainer, and Restorer of all creation. We are called to worship God with all our being and actions, and to treat creation as sacred. We must engage our political leaders in supporting the very future of this planet. We are called to cling to the true Gospel – for “God so loved the world” (John 3:16) – rejecting the false gospels of our day.

We believe that caring for creation must undergird, and be entwined with, all other dimensions of our churches’ ministries. We are convinced that it is no longer acceptable to claim to be “church” while continuing to perpetuate, or even permit, the abuse of Earth as God’s creation. Nor is it acceptable for our corporate and political leaders to engage in “business as usual” as if the very future of life-support systems were not at stake.

Therefore, we urgently call on our brothers and sisters in Christ, and all people of good will, to join us in:

Understanding our responsibilities as those who live within the United States of America – the part of the human family that represents five percent of the world population and consumes 25 percent of Earth’s riches. We believe that one of the surest ways to gain this understanding is by listening intently to the most vulnerable: those who most immediately suffer the consequences of our overconsumption, toxication, and hubris. The whole Earth is groaning, crying out for healing—let us awaken the “ears of our souls” to hear it, before it’s too late.

Integrating this understanding into our core beliefs and practices surrounding what it means to be “church,” to be “human,” to be “children of God.” Such integration will be readily apparent in: congregational mission statements, lay and ordained ministries, the preaching of the Word, our hymns of praise, the confession of our sins, our financial stewardship and offerings to God, theological education, our evangelism, our daily work, sanctuary use, and compassionate service to all communities of life. With this integrated witness we look forward to a revitalization of our human vocation and our churches’ lives that parallels the revitalization of God’s thriving Earth.

Advocating boldly with all our leaders on behalf of creation’s most vulnerable members (including human members). We must shed our complacency, denial, and fears and speak God’s truth to power, on behalf of all who have been denied dignity and for the sake of all voiceless members of the community of life.

In Christ’s name and for Christ’s glory, we call out with broken yet hopeful hearts: join us in restoring God’s Earth—the greatest healing work and moral assignment of our time.

Signed,

Drafters

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1 American Baptist *Policy Statement on Ecology*, 1989, p. 2.

2 "Address of His All Holiness Patriarch Bartholomew at the Environmental Symposium, Saint Barbara Greek Orthodox Church, Santa Barbara, California, 8 November 1997," John Chryssavgis, *Cosmic Grace, Humble Prayer*, Eerdmans Publishing Company, 2003, pages 220-221.