Quaker Earthcare Witness
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# EARTHCARE FOR FRIENDS

## *A Study Guide for Individuals and Faith Communities*



First Edition edited by Louis Cox, Ingrid Fabianson, Sandra Moon Farley, and Ruah Swennerfelt

Second Edition edited by Judy Lumb and Brad Stocker

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Quaker Earthcare Witness (QEW)
P.O. Box 6787, Albany CA 94706
info@quakerearthcaare.org
<quakerearthcare.org>
Contributions to QEW are welcome.

Front cover art, "The Living Web," by Mary Coelho

**"Earth", "the earth", "earth", "Creation" and "creation"**

**We capitalize** "Earth" in this book whenever an author is referring mainly to our home, the third planet out from the sun. This is consistent with the practice of capitalizing the names of the planets in our solar system—Mercury, Venus, Mars, etc. No personification or deification is implied. In other places, the phrase "the earth" is used, without capitals, to be consistent with the practice of lower-casing "the sun" and "the moon." This may be used when an author is referring to the global environmental situation in a more scientific sense. And, of course, when referring to the granular stuff beneath our feet, it's just plain "earth." A similar practice is followed in capitalizing "Creation" when an author is referring to the whole created order, to distinguish that from "creation" as a specific act of creating something. Again, no personification or deification is implied.

# Quaker Earthcare Witness
# Earthcare for Friends

A Study Guide for Individuals and Faith Communities

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# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 1

## Our Faith as a Foundation for Earthcare

by Ruah Swennerfelt

### Purposes of this unit

1. To understand the spiritual foundation of our role as Friends, as Christians, to care for the many gifts of Creation.
2. To see where the Bible guides and informs our actions today.
3. To consider a Christian approach to Earthcare from the perspective of someone who is not a Friend.
4. To prompt spirit-led discussion about what our next steps might be in bringing our lives into right relationship with Creation.

### Sacred texts and other inspirational readings

*Ah, you who join house to house, who add field to field, until there is room for no one but you, and you are left to live alone in the midst of the land! The Lord of hosts has sworn in my hearing: Surely many houses shall be desolate, large, and beautiful houses, without inhabitant. For ten acres of vineyard shall yield but one bath, and a homer of seed shall yield a mere ephah.*

—Isaiah 5:8–10

*Then God said to Noah and to his sons with him, "As for me, I am establishing my covenant with you and your descendants after you, and with every living creature that is with you, the birds, the domestic animals, and every animal of the earth with you, as many as came out of the ark."*

—Genesis 9:8–10

*When the Lord saw that he had turned aside to see, God called to him out of the bush, "Moses, Moses!" And he said, "Here I am." Then he said, "Come no closer! Remove the sandals from your feet, for the place on which you are standing is holy ground."*

—Exodus 3:4–5

It is often a challenge to put our beliefs and values into action. We all want to make the world a better place for future generations. But it feels like there's so much to do, and we wonder if our efforts will matter. Individuals and small groups of people do have the power to make positive changes that benefit our neighbors, ourselves, and the planet. Communities of faith have an important leadership role to play on issues of environmental and social justice. With every purchase we make, every piece of junk mail we eliminate, and every ounce of pesticide we don't use, we're making important choices and sending messages of hope and change to the rest of the world.

—Betsy Taylor, Executive Director, Center for a New American Dream

### Hymns and songs

Let All Things Now Living. *Worship in Song, A Friends Hymnal,* #46. Earth Was Given as a Garden. *Worship in Song, A Friends Hymnal,* #307.
God, Who Stretched the Spangled Heavens. *Worship in Song, A Friends Hymnal,* #309.

## Issue presentations

### Introduction

WHY HAVE WE WRITTEN a book on Earthcare from a Quaker perspective? It's with the hope that all Friends will be moved to work together to make the planet healthy for all its inhabit- ants. It's not about approving Minutes (though that is often a first step), and it's not about recognizing that Earthcare may be an emerging Testimony (though that may happen). It's about you and me heeding the call to make the necessary changes in our outlooks and our lives to reduce the stresses that humans are inflicting on the planet. It's about our twin understandings that care of the earth includes caring for the plight of humans (who are part of the Earth), and that we can't separate caring for humans from ensuring that the health of this living planet is not damaged by the way we draw on its resources.

### Our foundation

WHAT IS THE FOUNDATION for our belief that we as Friends can and should make a difference in the world? How can Friends from the different traditions work together to secure a future for not only our children's children's children, but for all the lushness and for all the diverse beings on the planet?

One way is to meet under the umbrella of a strong Earthcare movement among Christians and other faith communities in the United States. The National Council of Churches Eco-Justice Working Group has brought many denominations together in action on the issue of energy use. In many states, groups have started "Interfaith Power and Light" organizations, emphasizing and supporting energy efficiency and renewable energy. Another way is to share our concerns and leadings with other Friends groups (including Quaker Earthcare Witness). Friends United Meeting and many Yearly and Monthly meetings have approved a variety of Minutes about Earthcare (see Appendix A). Beyond the approval of Minutes, many have been led to works of conservation, energy efficiency, use of recycled and recyclable products, and more.

### The role of the Bible

THE TWO ARTICLES in this unit provide important general background information and ideas about spiritually-based Earthcare. Steven Davison worked with Quaker Earthcare Witness in its formation. His ideas and writings were helpful in bringing together differing views of our relationship with creation. Although the article by Larry Rasmussen was primarily written to support the Earth Charter (see Unit 15), his analysis of the Christian response to the environmental crisis is inspiring. Even if you are from a less biblically-based tradition, these articles have much to offer you. They inform us of a language that we may use to communicate our ideas and strengthen the foundation for what we will learn in the remaining units.

## Article 1

## Christian Earth Stewardship

by Steven Davison

(Reprinted from *Becoming a Friend to the Creation, Earthcare Leaven for Friends and Friends' Meetings*, Quaker Earthcare Witness, 1994 [out of print].)

### Introduction

THE CHRISTIAN TRADITION has responded to the environmental crisis in a number of ways. The mainstream of this response has often addressed itself to a theology and practice of "earth stewardship." The heart of this approach has been a search for a new relationship with creation and with God in relation to Creation that shares the assumptions of the wider Christian tradition but challenges its environmental awareness and behavior. This essay is, first, an attempt to introduce readers to the assumptions and challenges of Earth stewardship, and, second, a very partial exploration of their usefulness through some personal observations and some queries

which might guide further discussion.

The challenges which the Earth stewardship "movement" presents are largely informed by the revelation and perspective of the environmental movement; its *assumptions* are largely informed by the revelations and perspectives of the Bible and of the theological reflection which the Bible has inspired. Though it rarely addresses environmental issues *per se,* some Christian writers have held this biblical tradition up to the light of environmental concerns to see what principles might emerge. These writers have then applied these principles in various forms and combinations to the Christian community's environmental behavior, though they have not necessarily expressed these principles in the forms given below. These efforts are beginning to define a more or less coherent theology of Earth stewardship, and they are beginning to affect the actions of churches, especially at the denominational level of organization.

In the next section, I offer a concise list and definition of *9½ Principles of Christian Earth Stewardship* which I have culled from my reading. This reading has included three sources: the Bible itself, contemporary Earth stewardship writers, and the writings of Friends, especially George Fox and John Woolman. Some I have found stated explicitly in the form I have given them. Each has been found in enough sources to seem worthy of inclusion.

I have gathered them into three groups: The first group of principles define God's relationship with Creation. The second defines humanity's relationship with Creation. The third defines our relationship with God in relation to Creation.

In the next section, entitled "Exploring Earth Stewardship," I question these principles with some personal observations and then offer some queries, which are grouped in the same threefold way. These observations and queries are offered as initial aids to a process of discernment: As Friends seek a faith and practice that will inspire, guide, and strengthen us in the face of an intensifying ecological crisis, new leadings will come. Our tradition is to test such leadings in the light of scripture, in the light of our Quaker history and tradition, and, ultimately, in the Light of the corporate body gathered in spirit-led worship. To be faithful in this process, we must know what our tradition is in order to use it as a benchmark. The present work is a contribution to this process.

## 9½ Principles of Christian Earth Stewardship

1. Creation is *good* but not *holy*.
   Though its goodness is affirmed, creation is not holy in itself.

2. God is *transcendent* and *Other* than creation.
   God may be present in Creation by choice in specific places for specific purposes in specific moments, as when speaking through the Burning Bush. But God's presence does not *live* in Creation in any way that might invite the worship of Creation.

3. God is the sovereign proprietor of creation.
   "The earth is the Lord's and the fullness thereof." (Psalms 24:1)

4. The "purpose" of creation is to glorify God.
   "The heavens are telling the glory of God; and the firmament proclaims his handiwork." (Psalms 19:1) By inference, then, the purpose of Earth stewardship is to glorify God.

5. We have been given *dominion* over creation as God's *stewards*.
   "God blessed them, and God said to them, 'Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth.'" (Genesis 1:28) We have been put in the "garden" to "till it and keep it." (Genesis 2:15) Conversely, we lose our right to dominion when we violate our responsibilities in stewardship.

5½. The privilege of God's special favor extends beyond dominion.
   We are created in God's image, we enjoy exalted status (see Psalm 8) and God's special favor (see Matthew 10:29–31). Thus, a principle of spiritual anthropocentrism is a corollary of our dominion.

6. The rightful context for stewardship is *covenant*.
   With the covenantal promise of blessing and dominion comes responsibility, the obligation to steward the gifts God has given us according to God's will.

7. Irresponsible Earth stewardship is a sin.
   This sin results from the fall and continues out of the same over-reaching pridefulness. Though "ecological sin" is never defined explicitly in the Bible, it is implicit, especially in the words of the prophets and the "stewardship" parables of Jesus. As with other sins, we will be held accountable for our ecological sins before God.

8. Because creation is a gift to all humanity which we only hold in trust, there is a social justice dimension to Earth stewardship.
   This is most clear in the prophets, especially Amos and Isaiah. A great deal of contemporary Earth stewardship writing comes from Christians in the Third World.

9. We have been promised that harmony will be restored between us and creation when we are saved.
   Put another way, obeying God's will as God's stewards will bring us into a "new Creation," for which the "peaceable kingdom" passage in Isaiah 11 is the most famous expression. "New Creation" imagery also figures prominently in George Fox's thinking; Fox seems to have derived this imagery from Revelations and the letters of Paul.

## Summary

CONDENSED INTO A CONCISE STATEMENT, we might say that we have been given Creation in trust by God, its creator, sovereign, and true owner; that we are stewards of God's property; and that this dominion over Creation, which is only one of our blessings as God's chosen people, is to be tempered by obedience to God's will; and that ecological mismanagement is a sin. Through our covenantal right alignment with God's will, Creation will be included in our own ultimate salvation.

## Exploring earth stewardship: some observations

I HAVE PRESENTED these principles as expressing the "leadings" of the mainstream of the Christian tradition today on environmental issues. I think this is true, as far as any such broad generalization goes. Based on conversations in my own Yearly Meeting and especially at the Friends United Meeting Triennial in 1993, I believe they also speak for many of the Christian Friends, who are a clear majority in the Society worldwide.

By contrast, I know that many Friends in the "liberal, silent tradition" find these principles unsatisfactory in varying degrees. I do myself. *[Editor's note: Unprogrammed Friends do include many "liberal" and "conservative" Christians.]* Nevertheless, I believe that we must take them seriously and not reject them out of hand. I have two reasons for feeling this way:

First, it is something that we must do to be faithful in our search for an ecological faith and practice. As I said in the introduction, our processes of discernment require that we know what our tradition is as a starting point, and yet not take it for granted, that we hold our tradition in the same Light which inspired it in the first place and which guides us today. An honest, well-informed, spirit-led discernment of our own tradition is, it seems to me, a *sine qua non* for going forward. How can we go forward if we don't know where we've been or how we got where we are? How can we *all* go forward together, which is a central principle of Quaker governance, unless we learn to speak and to hear each other's language?

The second reason is that I believe there are powerful principles of truth at the core of each of these principles which have yet to be thoroughly developed. If we took full responsibility for them, they would take us a long way.

Let me give just one example, on land ownership. God's sovereign ownership of Creation is explicitly tied to the inalienable nature of land in [ancient] Israel's family-oriented land-tenure law, which explicitly prohibits the private and corporate ownership of land (see Leviticus 25, especially). This is potentially a radical platform for agricultural policy and land reform and a powerful prophetic challenge to corporate capitalism.

Nevertheless, Earth stewardship presents us with quite a lot of problems. In the next section, I take a very brief look at some of these, principle by principle. But first I want to look at two problems affecting the stewardship tradition as a whole:

First, historically, it is an abject failure. Some would even blame the Christian tradition for the ecological crisis itself, especially as it has shaped the assumptions behind our view of the world and our place in it. At the least, Christian leaders, writers, and communities have not stood in the way of the destruction of Creation until very recently. Why not, when virtually all of the principles of Earth stewardship are at least 2,500 years old?

The second problem is institutional, ecclesiastical, political. The Christian tradition has never created concrete institutions and processes by which the community might put these principles into practical effect. There has never been a way to bring the elements of our faith to bear on actual land management and development decisions.

I believe a thorough evaluation of the Earth stewardship tradition needs to keep the historical and practical in mind. It should seek rigorously the stops in the tradition which prevent its becoming practical. It also should reveal the implications and the positive potential of the principles of Earth stewardship if they were energetically applied.

The first step in our discernment process is to acquaint ourselves with our tradition. We should do this not just because it represents our roots in the past, but also because it is the measure of light given to the majority of Friends today. To help in this process of discernment, I offer some queries, which are excerpted from a much more extensive list. Perhaps I should call them just questions, because a query should invite an inward journey without suggesting direction, and some of the questions below are not so neutral.

## Exploring earth stewardship: questions on God's relationship with Creation

*CREATION IS GOOD, but not holy. God is other than Creation and beyond it and, by virtue of having created it, God is its sovereign owner. Creation's purpose is to glorify God.*

For over 3,000 years, the tradition has feared and fought "Baalism," that is, the translation of the experience of God in the natural world into a worship of God *as* the natural world. How do we name our genuine experiences of the holy in Creation? How do we share and seek these experiences with others?

The Trinity and the presence of God in Creation: Has the Creator ever rested? Are we comfortable recognizing Christ in His creative and sustaining role in creation? Can creation be animated with life without the presence of the Holy Spirit?

Is creation more than just God's property? If we believe God is present in Creation, does ecocide equal dei-cide (that is, the diminution of the presence of God itself)? If so, how does this affect our relationship with Creation?

For ancient Israel, God's sovereign ownership of Creation precluded its private or even corporate ownership. If we still accept the first principle, then how are we to treat land tenure today?

## On humanity's relationship with creation

*WE HAVE BEEN given Creation as a gift in trust; we have dominion over it, but in the spirit of stewardship. As God's stewards, we enjoy God's special blessing as a favored species.*

What are the limits of our dominion in stewardship? If we care for Creation on the Creator's behalf, at what point are we obligated to seek God's will on specific matters of stewardship before acting? How do we seek God's will? How do we recognize answers to this search and test them? To what degree do the principles of Quaker process represent a useful contribution to these problems of active, practical, spirit-led stewardship?

The roots of the word "steward" mean "ward of the sty," that is, the one given responsibility for the military protection of the lord's animal wealth and, by extension, for protection of the estate's continued sustenance. Does the hierarchical and military nature of the feudal vocabulary of *Lord, dominion,* and *steward* serve us well in the face of contemporary environmental crisis? Why would we retain such a vocabulary in our religious and "eco-religious" lives when we have abandoned it in our social and political culture?

## On our relationship with God in relation to creation

*COVENANT is the rightful context for Earth stewardship. In this context, irresponsible Earth stewardship is a sin for which we shall be held accountable by God. This understanding of righteousness and sinfulness as regards treatment of Creation also includes dimensions of gender, social, racial, economic, and political justice. We have been promised that harmony will be restored between us and Creation when harmony between us and God has been restored.*

Covenant is a relationship of mutual promise and responsibility into which one enters consciously and voluntarily, as in a marriage or meeting membership. The original covenant between Israel and Yahweh included the land as a third partner. Can we extend our relationships with each other and with God to include the land as well? How?


Outdoor worship at a Friends gathering

Can we look to the principles of "deep ecology" to develop a "deep Quakerism," a set of laws or principles that we would accept as binding in ways similar to the land management laws in Israel's covenant with Yahweh? What do the spiritways of indigenous peoples have to offer us for our understanding of covenantal relationship with the land?

For Christians, the message and life of Jesus are a prescription for right living. Given that Jesus did not teach his community specifically on the topic of Earth stewardship, what principles do we find implicit in the teaching we do have?

Contemplating the end of the world: What are the implications for us of Christian eschatology, of a belief in the "end of the world" as God's final saving act, in the face of the present ecological and nuclear proliferation crises?

To the degree that we are Christians concerned with sin and salvation, repentance and forgiveness, how do we confess our failure as Earth stewards and our oppression of land-based peoples, whose land and stewardship we have usurped? How do we repent, or turn around? Put another way: If irresponsible Earth stewardship is a sin, how and when will Christians and Christian communities be held accountable by God? How can we establish concrete forms of accountability that will actually effect community behavior to protect creation? Is salvation just for individual souls in some hoped-for future, or for bodies and communities in the here and now, as well?

To the degree that we are post-Christian, finding the Christian salvific paradigm unhelpful, what other tenets of faith and practice serve to guide the community in its practical land-use and development decisions? How do we incorporate constructive discipline and useful limits in the life of the community without "sin," without some framework for naming and correcting wrongdoing?

Individualism and eco-religious life: To what degree do we understand salvation or wholeness as a matter for the human individual rather than for the wider human and non-human community? On the model of deep ecology, to what degree is the community more important than the individual? To what degree do Christian and Quaker culture suffer for unbalanced individualism?

*STEVEN DAVISON is currently writing two books, a land-based reading of the gospel of Jesus, tentatively titled* Good News for the Land: Economics, Politics and Community in the Commonwealth of God, *and an economic history of Friends titled* Quakerism and Capitalism. *He is active with the recently formed Quaker Eco-Witness for National Legislation (QEW-NL), helping to develop Quaker Eco-101 (QE-101) curriculum materials. He is an avid student of the Bible and of Quaker history, faith, and practice. His ministries include Bible study and education, recovery of and spirit-led experimentation with the faith and practice of traditional Quaker ministry, and land-based spirituality. Steven is a member of Yardley Meeting, Philadelphia Yearly Meeting.*

## Article 2

# The Whole of Earthly Life

by Larry Rasmussen

(Reprinted with author's permission, first printed in the *Earth Letter, Special Earth Charter Issue*, November 2002, published by Earth Ministry, 6512 23rd Ave. NW, Suite 317, Seattle WA 98117)

IN ONE OF THE LATER LETTERS from prison [in Nazi Germany] in 1944, Dietrich Bonhoeffer writes his closest friend and *alter ego*, Eberhard Bethge, and gently corrects him. Bethge, responding to Bonhoeffer's thoughts on the "this-worldliness" of faith, has registered the mistaken notion that "the Bible hasn't much to say about health, fortune, vigour, etc."[1] Bonhoeffer, who had earlier declared his deep love for the Old Testament and cautioned Christians about moving on to the New Testament "too soon," points out the Hebrew Bible's sturdy theme of God's blessing, "which includes in itself all earthly good." "In that blessing," he tells Bethge, "the whole of earthly life is claimed for God, and it includes all [God's] promises."[2]

The whole of earthly life, together with its as-yet-unrealized possibilities ["all God's promises"], was voiced by a theologian whose own life came to a premature and violent end well over fifty years ago: Isn't this an odd way to introduce the Earth Charter *[see complete text of the Earth Charter in Unit 17],* itself a not-yet-finished creation that Bonhoeffer might have welcomed but could not have imagined?

Let me explain. The genius of the Charter is that its scope, too, is the whole of earthly life. Its subject is not, say, "the environment" only, or "society" only, in the manner of past charters. "Respect and Care for the Community of Life" is its first section, "Respect Earth and life in all its diversity" its first principle. Furthermore, unlike most charters, it invites and embodies the spiritual wisdom of diverse religious traditions, Bonhoeffer's included. Religious values suffuse the Charter, even when great care is taken in this "people's treaty" not to "establish" any one faith. At the same time the Charter, in another mark of its genius, subtly prods all traditions to undergo the same conversion-to-Earth that Bonhoeffer himself did in his "this-worldly" Christianity. "Earth remains our Mother, as God remains our Father," he said in a 1928 address on "The Foundations of Christian Ethics," "and our Mother will only lay in the Father's arms those who remain true to her. Earth and its distress—that is the Christian's 'Song of Songs.'"[3] "Earth and its distress" is the Earth Charter's burden, blessing and song as well.

This turn-to-the-earth—all of it, together, without exception—means that religious devotees don't exit the Charter and its ethos on the same terms they entered. There is, to be sure, sufficient common content, shared ethos, and "aha!" substance to confirm and anchor varied religious traditions anew, for an epoch of Earth-honoring faith. Yet the Charter is not a closed global ethic. It does not stipulate any single set of norms or endorse any particular worldview. It functions more like a moral "dome" or as moral "habitat," sheltering and nurturing the practices of plural peoples and plural values in the same moment that it confronts them in bracing ways.

But how might we further think about the Charter's embrace of Earth, in ways that also foster Christianity's own conversion to it?

The tack taken here is to hover around the theme of "Creation as community." Granted, that renders this a specifically Christian meditation, since "creation" is a theological word the Charter does not use. By contrast, "community" is the Charter's own language. "Creation as community" can thus pose the test: Can the Charter endorse our richest traditions of faith and understanding and at the same time ask more of them than we brought? Can its moral habitat form ours?

"Humanity is part of a vast evolving universe. Earth, our home, is alive with a unique community of life." These sentences from the Charter's Preamble are new and old, conserving and reforming, and both at once.

*Old and conserving*. From time immemorial religious traditions have made an audacious claim: The cosmos itself is a community. Christianity has certainly done so. All that exists, coexists. All that is, belongs. "All things bright and beautiful, all creatures great and small, all things wise and wonderful"—to remember a hymn—have standing in, with, and before the great God who is their Source. Creation, under God and indivisible, is one.

Moreover, in some of the Christian sources—the Yahwist traditions of the Hebrew Bible and its Wisdom literature, for example, or the writings of numerous Christian mystics—no real distinction is made between the human, the socio-historical, and the natural realms. Within the vast gambit of life—all of it—are patterns that instruct and guide. Indeed, in all Christian sources creation is presented as an ordered totality that is intelligible, good, and a reflection of "the Source, Guide, and Goal of all that is" (Romans 11:36).

What we nonetheless did not expect is that we ourselves would ever become *unCreators* in this community. With an economic and moral swagger that is remarkable, we assume we can have a world of our own making and it can be good. We reduce all things, biotic and abiotic, living and non-living, to "information" and "resources" for a world after our own image and likeness. Ironically, then, the same species that is most responsible for knitting Earth together in the modern era as a single human social, biophysical, and technical sphere is the one that most threatens the global metabolism of the Community of Life itself, and puts the biosphere in plain jeopardy. Species-pride wed to the arrogance of addictive affluence has set us on a course of uncreation. To cite only one of the Charter's descriptions: "The dominant patterns of production and consumption are causing environmental devastation, the depletion of resources, and a massive extinction of species."[4]

*It is well past time to vigorously reclaim Creation as comprehensive community.*

This means it is well past time to vigorously reclaim creation as comprehensive community. As noted, "Creation" is not the Charter's term. It is a specifically theological signal about origin and ordering in God and not, say, a science word, or even a synonym for "nature." It is, in fact, first of all a doxological word about the Maker of Heaven and Earth who is Creator, Redeemer, and Sustainer of all that is, and who is as radically close and incarnate as the Breath of Life itself. It is also, from its early days in Genesis, a word that presents life as a gift, grain by grain, cup by cup, sip by sip; and a word about the One who holds us accountable for all life within our reach. In some eras the Christian doctrine of Creation has been used precisely to declare that the world is not God and nature is not divine, and that neither is to be worshiped. But in the great work before us, its message is that, while the universe is not divine, it is sacred and not utter utility. And we are accountable to its Source for passing on that portion of this sacred trust that is home to the planetary Community of Life.

In different words, Creation as community means seeing the magnificent diversity of geological and biological formations caught up in a single existence. It means seeing ourselves as integral members of this existence, and it means seeing this in ways that reaffirm the old communitarianism: an ontological covenant binds the well-being of each member of Creation to the well-being of the other members.

*New and reforming*. The ancient religious claim of Creation as cosmic community is not a spiritual vision alone. Nor is it only the occasion for praise and the palette of artists. The great discovery of recent science, from physics to ecology to evolutionary biology, is that the *material* universe—"nature"—is also a community. All that exists, co-exists. All that is, belongs. All things great and small, from atoms to galaxies, share a common history and a common, if unfinished, story. It turns out that [the statement] "humanity is part of a vast evolving universe" is scientific and empirical, as well as religious, truth.

Sages have long observed that human beings dream dreams of community on a grand scale because of some restive, irrepressible stirrings deep within their wee little souls. We have always wanted to belong to the same order that hurled the planets into orbit and sent the stars singing on their way. We have always wanted to align our mortal lives with a community that far surpasses them. We have, in fact, built empires and enslaved peoples and ruined lands in the wayward quest to do so, just as we have composed music and crafted masterpieces and raised children in our striving to belong and to be remembered. Now it turns out we *do* belong to the cosmos, not by virtue of longing or desire alone, but literally, because we *are* stardust. The yearning in our *solar plexis* that seems to tell us the universe itself is "home" is physically correct, we discover. We belong to Creation in every transient cell of our bodies, in DNA and mitochondria that are millennia deep. The image of early Christian theologians that we are

microcosms of the macrocosm is now underwritten by a science they did not have. What they did not know is that in its own quirky way, everything else is microcosm, too. All of them are the relatives. Creation is one.

When the Charter places *Homo sapiens* firmly at home in the cosmos as part of the 13– to 15-billion-year drama-to-date, something new is offered that exceeds most Christian imagination. Even the free-range vision of psalmists and prophets was not ready for the detail, the dynamism, and the utter strangeness of a universe infinite in all directions on a scale that we do not yet fathom. Poets and mystics, or a humble cell biologist or astrophysicist, may break through here occasionally, but only in wonder. The charming arguments of Gregory of Nazianzus and Augustine that not all species of plants and animals could have been created by God but must have evolved from other of God's creatures, since Noah's Ark could not have borne that load, are utterly quaint now, the stuff of children's stories. So even if those 4th century arguments had a sense of evolutionary development that later and long-held Christian notions (nature as balanced, harmonious, and anthropocentric) hardly allowed, they belong to cosmologies that no longer serve us well. We frankly do not yet know what the statement, "Humanity is part of a vast evolving universe" means for our daily habits. We sense that we rightly affirm the dogged communitarianism of Christian confessions and sacramental practices. But what does that mean for obligations that extend to the whole community of life within our reach for generations to come in a material community that is cosmic? When neighbors are no longer only nigh, but afar as well, in time and space, and when neighbors are not only human but other-than-human in the fifty million odd ways of Creation, what is the justice due them? How ought we to live? The accountability is old. The demands are new.

Yet the Earth Charter is not the Universe Charter. Earth, its wonder and distress, is the presenting subject. Creation as community now, in a humanly dominated biosphere on a planet in plain jeopardy, is the besetting issue.

Here the Earth Charter embraces "the whole of earthly life" in a remarkable way and without remainder. After the Preamble, four lead principles, expressing "Respect and Care for the Community of Life," govern the subsequent sections: "Respect Earth and life in all its diversity"; "Care for the community of life with understanding, compassion, and love"; "Build democratic societies that are just, participatory, sustainable, and peaceful"; (and) "Secure Earth's bounty and beauty for present and future generations." These are concretized in gratifying detail in interlocking sections on Ecological Integrity, Social and Economic Justice, (and) Democracy, Nonviolence, and Peace. So interwoven are these with one another that Earth Charter educators find it necessary to prepare materials which display the Charter in multiple ways. The present, very charter-like linear text is vital, but it is not a form that readily captures the integral functioning of the economy of Earth. Perhaps a mandala might. In any event, how to combat as both wrong-headed and destructive the dualisms of humanity/nature, society/environment, wealth/poverty, and spirit/matter, as well as gender inequalities and a present that always trumps the future, and how to show instead the complex metabolism of "the whole of earthly life," is the demanding task. Earth is one.

In 1650 Andreas Ehrenpreis, an Anabaptist Christian of Hutterite persuasion, wrote this in his "epistle on brotherly community":

> True love means growth for the whole organism, whose members are all interdependent and serve each other. That is the outward form of the inner working of the Spirit, the organism of the Body governed by Christ. We see the same thing among the bees, who all work with equal zeal gathering honey.[5]

Whatever the validity of the bees-and-honey analogy, recent science qualifies Ehrenpreis markedly, at least if Ehrenpreis' image is community as a harmonious organism. "Evolution loves death more than it loves you and me," to remember Annie Dillard and Tinker Creek. Real-life community has never been a synonym for harmony. The worst happens there, as does the noblest. And for creation as community, it frequently happens large-scale. Yet the Earth Charter is correct that the functioning of planetary systems is incorrigibly interdependent and interactive and that the human failure to align its own designs with the rest threatens the whole. And for their part the Christian confessors of Creation are correct that a fierce communion

binds all God's creatures in a single, if ever-renewing, covenant. The message from both is clear: Earth's requirements for its own regeneration and renewal are foundational; ours, precisely because we belong here and are home nowhere else, are derivative. Thus the Charter can only pursue ecological integrity (Section ii) together with social and economic justice (Section iii) and democracy, nonviolence, and peace (Section iv). All follow from Respect and Care for the Community of Life (Section i) in a gathering that Ehrenpreis conceived as "bodily" and "the outward form of the inner Spirit." It's very old and very new, both at once.

*LARRY L. RASMUSSEN is Reinhold Niebuhr Professor Emeritus of Social Ethics, Union Theological Seminary, New York City. His volume,* Earth Community, Earth Ethics *(Maryknoll: Orbis Books, 1996) won the prestigious Grawemeyer Award in Religion in 1997. He received a Henry Luce Fellowship in Theology to begin the project he is presently working on:* Song of Songs: Ecumenical Christianities as Earth Faiths.

## Questions for reflection

1. Do I honor the Life of all living things, the order of nature, the wildness of wilderness, the richness of the created world?
2. Do I seek the holiness which God has placed in these things, and the measure of Light which God has lent them?
3. Do I, in all my proceedings, keep to that use of things which is agreeable to universal righteousness? [John Woolman]
4. Do I accept personal responsibility for stewardship of Creation? Does my daily life exemplify and reflect my respect for the oneness of Creation and my care for the environment?
5. As a member of my Friends' community, as well as my work and home communities, do I seek guidance in the Light for ways that I may lead and participate in actions which both heal the earth and inspire others regarding the urgency of this healing?
6. Is my Meeting aware of the spiritual basis of our concern for the environment?
7. Do we seek to be aware of God's love and energy in all of Creation?
8. Living in that spirit, do we strive to relate with love and respect to ourselves, other people, other creatures, all living and inanimate objects, and materials that we meet each day?
9. Are we aware of and sensitive to our present consumption patterns?
10. How do we identify, understand, and resolve our fears of what we might lose with a change of our present life-style?
11. Are we formulating and implementing an ethic for responsible stewardship of our planet?
12. Does the scope and immediacy of the current threat to life on Earth call for the formulation of a clear Quaker testimony on unity with nature, and for the dissemination of that testimony with the vigor that has marked Quaker testimonies on peace and slavery?

## Illustrative activities

1. Form an Earthcare study/support group to help clarify the spiritual questions which may linger after reading the materials in this book.
2. Make all issues personal ones. Ask yourselves how this knowledge may change your life.
3. Look to the Earthcare resources in Appendix B and research the issues further.
4. Read the Earth Charter and compare it, point for point, with the advices and queries in your Yearly Meeting's *Faith and Practice*.

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[1] Dietrich Bonhoeffer, "Letter of 18 July, 1944," *Letters and Papers from Prison*, *The Enlarged Edition,* Eberhard Bethge, ed. (New York: The Macmillan Company, 1972), 374.

[2] Bonhoeffer, "Letter of 18 July, 1944," *Letters and Papers from Prison*, 374.

[3] Dietrich Bonhoeffer, "Grundfragen einer christlichen Ethik," *Gesammelte Schriften* (Munich: Kaiser Verlag, 1966), 3:56; translation mine.

[4] From the Preamble to the Earth Charter.

[5] Andreas Ehrenpreis and Claus Felbinger, in *Brotherly community—the highest command of love: Two Anabaptist documents of 1650*, Robert Friedmann, ed. (Rifton, N.Y.: Plough Publishing Co., 1978) 11.

## Prayers and responsive readings

Open, O Lord, the eyes of all people to behold thy gracious hand in all thy works, that, rejoicing in thy whole creation, they may honor thee with their substance, and be faithful stewards of thy bounty.

—*The Book of Common Prayer* of the Episcopal Church

*Leader* Holy God, creator of all,
we rejoice in the gift of ever-growing light
as the earth in this season leans closer to our daystar.
*People* O Creator, hear our prayer.
*Leader* As our ancestors of old
lit festing fires and banished the darkness
and called forth the fire of the sun,
may our hearts be kindled with
the flame of new life.
*People* O Creator, hear our prayer.
*Leader* Your gifts ride on the springtime air,
carried aloft upon the wind,
filling field and forest, city and town,
with the incense of gladness.
*People* O Creator, hear our prayer.
*Leader* With awe-filled wonder
we sing praise with all creation:
tree and bush, flower and plant;
animals of the air, land and waters.
*People* O Creator, hear our prayer.
*Leader* Loving and generous are you, our God,
who has given us the rich variety
of ecosystems and ever-changing seasons.
*People* O Creator, hear our prayer.
*Leader* Accept our repentance, O God,
for our waste and pollution of your creation,
and our inadequate concern for those who come after us.
*People* O Creator, hear our prayer.
*Leader* Have mercy on us, Lord God,
for we have not loved you with our
whole heart, and mind, and strength.
We have not loved our neighbors as ourselves.
*People* O Creator, hear our prayer.
*Leader* Almighty God, our Creator:
The morning is yours, rising into fullness.
Eternity is yours, dipping into time.
Gladly we live in this garden of your creating.
Accept and fulfill our petitions, not as
we ask in our ignorance, nor as we deserve in our unfaithfulness,
but as you know us in the love of your Son Jesus Christ.
*People* Amen

—from *Earth Mass, Caring for Creation Conference*
Kansas City, Mo., April 1994

# Memory

by Ingrid Fabianson

At the heart of vengeance
is memory
We carry the past within us.
Put it down.
Forgive.

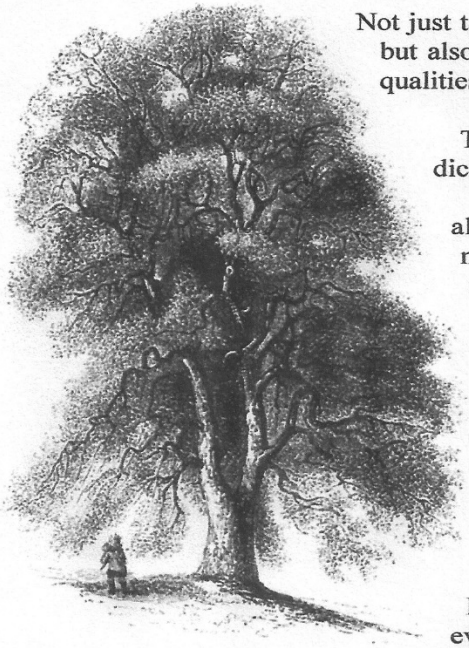
There is contention
over dwindling re-
sources
and difference.
Scarcity makes the
crowd's
mood ugly.

The stakes are profound.
Starvation. Or stealing.
Poor versus Rich. Us versus
them.
Revolution and killing.
Again.

The highest stake of all
is us, our
soul connection
to others severed,
our humanness diminished
by hate and envy.

Yet, the still voice of the
world speaks to us,
Waits for our response.
How do the world's
creatures view our legacy?
How does the wild speak?

Peace and reconciliation come
when we know each others'
stories.



Not just tales of human lineage
but also the accounts of
qualities of place.

Try not to create
dichotomies
Remember there is
always
more than your own
miseries.

Be open to all ways
of knowing.
See with the eyes of
the animals
and the thin splinter
needles
of the redwood glens.
Take time to love the
world.
Find meaning in the
every day.

Though the velocity of today's change
has frightened you
Do not retreat into vengeful memory.
The patterns of your familiarity
have become dislocated
but not your deep connection
to the living earth.

Search for innovation
through loving action
and respect for life.
Dull the edges of your own
savagery
and seek, in wild joy, a deeper
understanding of this world.

## Unit 1. Our Faith as a Foundation for Earthcare

Brueggemann, Walter. 1977. *The Land: Place as Gift, Promise and Challenge in Biblical Faith.* Fortress Press, Philadelphia.

Davies, W. D. 1974. *The Gospel and the Land: Early Christianity and Jewish Territorial Doctrine.* University of California Press, Berkeley.

——1991. *The Territorial Dimension of Judaism.* Fortress Press, Minneapolis, Minn.

Cohen, Jeremy. 1989. *Be Fertile and Increase, Fill the Earth and Master It: The Ancient and Medieval Career of a Biblical Text.* Cornell University Press, Ithaca, N.Y.

von Rad, Gerhard. 1966. *The Problem of the Hexateuch and Other Essays.* Oliver & Boyd, Edinburgh and London.

Wink, Walter. 1986. *Unmasking the Powers: The Invisible Forces that Determine Human Existence.* Fortress Press, Philadelphia.

Wright, Christopher J. H. 1990. *God's People in God's Land: Family, Land, and Property in the Old Testament.* Wm B. Eerdmans Publishing Co., Grand Rapids, Mich.

# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 3

## Earthcare and the Bible

by Ruah Swennerfelt and Ingrid Fabianson

### Purposes of this unit

1. To become better acquainted with what the Bible reveals as God's plan for creation.
2. To explore differing opinions about the Judeo-Christian tradition's relationship to Earthcare.
3. To inspire responsible Earthcare/stewardship.
4. To help us to describe and understand our role in Creation.

This unit could be used for at least four separate adult religious education sessions. There are four different articles, with questions for reflection following the end of all the articles. It is suggested that everyone read the article selected ahead of the time and then respond to the questions related to that article. Allow time for challenges and agreement. Look at how what you have read can be reflected in your daily life. Share your reaction to the differing approaches in the articles. How do they match or differ from your own thinking? And why?

### Sacred texts and other inspirational readings

*The eye cannot say to the hand, "I have no need of you," nor again, the head to the feet, "I have no need of you." On the contrary, the members of the body that seem to be weaker are indispensable, and those members of the body that we think less honorable we clothe with greater honor, and our less respectable members are treated with greater respect; whereas our more respectable members do not need this. But God has so arranged the body, giving the greater honor to the inferior member, that there may be no dissension within the body, but the members may have the same care for one another. If one member suffers, all suffer together with it; if one member is honored, all rejoice together with it.*

—1 Corinthians 21:14–26

*Then God said, "Let us make humankind in our image, according to our likeness; and let them have dominion over the fish of the sea, and over the birds of the air, and over the cattle, and over all the wild animals of the earth, and over every creeping thing that creeps upon the earth." So God created humankind in His image, in the image of God He created them; male and female He created them. God blessed them, "Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth."*

—Genesis 1:26–28

### Hymns and songs

For the Beauty of the Earth. *Worship in Song*, *A Friends Hymnal,* #10, first verse.

*For the beauty of the earth,*
*For the glory of the skies,*
*For the love which from our birth*
*Over and around us lies,*
*Lord of all, to thee we raise*
*This our hymn of grateful praise.*

## Issue presentations

## Article 1

# Connections

by Lisa Gould

(From *Caring for Creation, Reflections on the Biblical Basis of Earthcare*, Quaker Earthcare Witness, 1999)

*36 Master, which is the great commandment in the law?*
*37 Jesus said unto him, "Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind.*
*38 This is the first and great commandment.*
*39 And the second is like unto it, Thou shalt love thy neighbor as thyself.*
*40 On these two commandments hang all the law and the prophets."*

—Matthew 22:36–40

The Bible tells us a great deal about neighborliness. Six of the ten commandments deal with being a good neighbor:

*12 Honor your father and your mother, so that your days may be long in the land that the Lord your God is giving you.*
*13 You shall not murder*
*14 You shall not commit adultery.*
*15 You shall not steal.*
*16 You shall not bear false witness against your neighbor.*
*17 You shall not covet your neighbor's house, you shall not covet your neighbor's wife, nor his manservant, nor his maidservant, nor his ox, nor his ass, nor any thing that is your neighbor's.*

—Exodus 20:12–17

Jesus puts it very simply:

*"In everything do to others as you would have them do to you..."*

—Matthew 7:12

Who *is* our neighbor? Is it the family next door? The people across the street? The folks in our community? Our state? Our country? Over in China or Guam or Costa Rica? Once again, scripture makes clear that it takes the broad view:

*1 Happy are those who consider the poor, the Lord delivers them in the day of trouble.*
*2 The Lord protects them and keeps them alive; they are called happy in the land.*

—Psalms 41:1–2

And Jeremiah warns:

*Woe to him who builds his house by unrighteousness, and his upper room by injustice; who makes his neighbors work for nothing, and who does not give them their wages.*

—Jeremiah 22:13

QUAKERS have had a pretty good grasp from the beginning of just who our *human* neighbors are. But now we are being asked: *Are just people our neighbors?*

On a very basic physical level, each of us is a community of organisms, with a normal flora of bacteria, mites, roundworms, and other organisms. A few have been around so long they're integral parts of our cells; the mitochondria, scientists believe, were originally symbiotic bacteria. Some members of our physical community are important in helping to keep out detrimental organisms, others are free-loaders, and a few become troublesome occasionally; there are also plenty of other organisms that would like to join the community—such as lice, ticks, fleas, fungi, viruses—and do so whenever the opportunity permits. This idea makes some people

uncomfortable—we like to think we are quite independent entities, with distinct boundaries: between Us and Them.

And of course the community that is our body interacts physically with other communities, taking in food from plants and other animals, getting rid of wastes that are utilized by the detritus community, and finally, at death, our body community becoming a part of myriad other communities. If you think about it, there *are* no boundaries between one organism and another, between "life" and "non-life." We are constantly flowing from one to another, one moment a portion of a human being, the next skin in a dust pile, transformed shortly into a house plant or a rhododendron bush...exhaled to be breathed in by a possum...from bacteria into an oak tree into a gypsy moth...all through the food web and the non-living world we travel, zillions of fragments forever being put together and taken apart to make yet more unique creations. Physically we possess no true boundaries, we are forever re-molded and recast into new forms.

Francis Hole, a soil scientist and poet (and Friend), has said "Our bodies are disposable, biodegradable containers for spirit." We are worms and granite, oak trees and robins, sea spume and mica, we are stardust...we are each as old as the universe.

Listen to the words of poet William Carlos Williams:

*There is nothing to eat*
*seek it where you will,*
*but the body of the Lord.*
*The blessed plants*
*and the sea, yield it*
*to the imagination*
*Intact.*

The Koran tells us: "Whithersoever ye turn, there is the face of God." [II:115]

How do we nurture an understanding of our connections with one another, with our human community and with our non-human neighbors? The first step in getting to know other people is to look them in the eye, to recognize them. An African greeting—used for both humans and non-humans—is, "I see you, O I see you!" Once we have seen, we learn a name, for if we don't name, life quickly becomes very complicated ("Hello, I'd like to speak to that person in your department who is very tall, has gray hair, a funny chin, and laughs a lot," *or* "Doctor, I think you should use that plant that's green, has fuzzy stems, purple flowers, and the bees like"). But of course, seeing and naming are only the beginning of the relationship. And naming can certainly be a two-edged sword, can't it? Look at the wars that human being have fought essentially over the name of God. As if we had any clue at all what God's true name is! As if we, with our imaginations limited by brain structure, language, and culture, could ever name or even begin to define that which is unnameable and unknowable, certainly far beyond pitiful human concepts of race and tribe and gender!

If you are to truly know another being, you must be open to learning on many levels. Marge Piercy (1982) writes:

> I live among people who think that analyzing something is an action, who think that if they have dissected why they have done something that makes it permissible to do it again, who think that a label gives possession, that when they have identified a sharp-shinned hawk they know something of hawkness—wooing high in the air and sinking with talons locked, swooping on live prey and tasting the fresh blood spurt hot, feeling with each extended feather the warm and cold shift of the winds and the sculpture of the invisible masses of moving air. Dealing in words, I try to remember how far they go and where they leave off. Hungry for food for my brain, I try to remember all the other ways of knowing that coexist.

We gain this kind of knowing through one of the greatest gifts the Creator has given humanity, our imaginations. Wendell Berry (1993) notes: "It is by imagination that we cross over the differences between ourselves and other beings and thus learn compassion, forbearance, mercy, forgiveness, sympathy, and love—the virtues without which neither we nor the world can live."

Another wonderful writer, Loren Eiseley (1946), wrote of standing on the edge of a pond and seeing a frog:

> Whenever I catch a frog's eye... I stand quite still and try hard not to move or lift a hand since it would only frighten him. And standing thus it finally comes to me that this is the most enormous extension of vision of which life is capable: the projection of itself into other lives. This is the magnificent power of humanity. It is, far more than any spatial adventure, the supreme epitome of the reaching out.

Friend John Woolman wrote very movingly of an experience he had as a child, an experience which helped him make the imaginative leap to understanding:

> I may mention a remarkable circumstance that occurred in my childhood. On going to a neighbor's house, I saw on the way a robin sitting on her nest, and as I came near she went off; but having young ones, she flew about, and with many cries expressed her concern for them. I stood and threw stones at her, and one striking her she fell down dead. At first I was pleased with the exploit, but after a few minutes was seized with horror, at having, in a sportive way, killed an innocent creature while she was careful for her young.
>
> I beheld her lying dead, and thought those young ones, for which she was so careful, must now perish for want of their dam to nourish them. After some painful considerations on the subject, I climbed up the tree, took all the young birds, and killed them, supposing that better than to leave them to pine away and die miserably. In this case I believe that Scripture proverb was fulfilled, "The tender mercies of the wicked are cruel." I then went on my errand, and for some hours could think of little else but the cruelties I had committed, and was much troubled. Thus He whose tender mercies are over all his works hath placed a principle in the human mind, which incites to exercise goodness towards every living creature; and this being singly attended to, people become tender-hearted and sympathizing; but when frequently and totally rejected, the mind becomes shut up in a contrary disposition.
>
> —*The Journal of John Woolman,* pp. 2–3, Whittier edition

I AM FORTUNATE THAT every few years I am able to accompany my husband Mark to Jamaica, where he teaches a course in Tropical Ecology. Each morning, weather permitting, we are out on the reefs snorkeling, gazing in wonder and delight at the amazing coral reef community. Because I swim without a wet suit—in only a bathing suit covered with T-shirt so I don't burn in the sun—I am in direct contact with the water. It is a place "fearfully and wonderfully made," a community of bright colors and quick fishy dartings, of waving anemones and fiery coral, of gentle sea slugs and gleaming barracuda, spiny sea urchins and pulsing jellyfish. And in rare moments, after I've been there a little while, I feel as if I belong. I forget I am a guest and become, however fleetingly, a member of that community. And it is always with a sense of shock—and loss—that I realize I must rise to the surface and become again an air-breathing creature.

When we are in contact like this—when we truly connect—we know these moments as precious. Awe, gratitude, and joy all spring from within us when we are connected. Meeting for Worship can connect us, being in non-human communities can connect us, dance, music, sex, good food, prayer, a long conversation with a good friend, laughter, tears—all can connect us. And they are *all* "natural"—there are really no natural-versus-unnatural connections, just *connections*, an unlimited number of ways to be one with Creation and the Creator.

Where we fail is in not allowing true "connections" to occur. We disconnect ourselves at every interval, by our fanatic adherence to rigid time frames, by choosing the making of money over connections with family and friends, by watching television (that great disconnector which turns us into observers *of* rather than participants *in* life): We disconnect in our culture's emphasis on doing things faster rather than better, in our need to categorize people by their gender or race or religion or nationality, in the eating of packaged and processed food that often bears little resemblance to the plants and animals that yielded their substance for them. The disconnections seem endless.

# Earthcare and the Bible

FOR ME PERSONALLY, one of the symbols of our culture's disconnectedness comes through music. Several years ago I spent three weeks with a group of American teenagers in a village in Estonia. Our Estonian hosts gave us a wonderful Fourth of July party, and after we ate we sat around a bonfire and sang. The Estonian teenagers would sing a song, and then the Americans. The Estonians sang beautiful folk songs, in four-part harmony. The American teenagers, to my great surprise (for I grew up singing) knew very few songs that they were able to sing (though they knew the words to many popular songs, such as music of the Beatles, they were not able to sing them), and they would suggest things like "A hundred bottles of beer on the wall"! I have attended graduations where the students could barely sing the class song they had *practiced*. I've even heard singing recently, on television and in the movies, that barely passed for music, in sharp contrast to movies of just 40 or 50 years ago. In my heart, this musical disharmony is a clear symbol for the disconnectedness and disharmony of our modern life.

Much of what's called "New Age" spirituality seem to be about people's deep desire to reconnect. I know that many people object to New Age philosophies, to the paraphernalia of crystals and herbs and incense, to what they fear is pagan worship, to the movement toward Native American, Buddhist, or other non-Judeo-Christian spiritualities. At the core of this movement, however, seems to be a desire to reconnect with the pattern of Creation. And with so many who are seeking in those directions, what does this say about traditional, mainstream churches, where many feel that they do not find those connections with Creation? While fussing about "New Agers," have traditional churches forgotten to take a good look in the mirror? I wonder if Jesus might once again say:

> *23 Woe to you, scribes and Pharisees, hypocrites! For you tithe mint, dill, and cumin, and have neglected the weightier matters of the law: justice and mercy and faith. It is these you ought to have practiced without neglecting the others.*
> *24 You blind guides! You strain out a gnat but swallow a camel!*
>
> —Matthew 23:23–24

TO REALLY KNOW SOMETHING—and to truly love it—you must feel yourself connected to it, in a very personal way. The more abstract you make the connection, the less real care you will give it. It's like the difference between writing a check to American Friends Service Committee, and visiting with a sick friend. Both may be helpful, but the abstract act of writing a check to help those you have never seen will never have the affection of personal contact. It is said that "familiarity breeds contempt," and on a superficial level that is true: The better you know someone, the better you know their faults and limitations. But I think that more often than not, familiarity breeds affection, the sense that you know and are known, warts and all, and still cherish and are cherished. And familiarity enables you to recognize that each member of a community has a role and offers unique gifts.

In his letter to the Romans, Paul writes:

> *4 For as in one body we have many members, and not all the members have the same function,*
> *5 so we, who are many, are one body in Christ, and individually we are members one of another.*
> *6 We have gifts that differ according to the grace given to us; prophecy, in proportion to faith;*
> *7 ministry, in ministering; the teacher, in teaching;*
> *8 the exhorter, in exhortation; the giver, in generosity; the leader, in diligence; the compassionate, in cheerfulness.*
>
> —Romans 12:4–21

What happens when the community suffers the loss of a member? What happens when a neighbor dies? When biologists have bemoaned the great loss of species we are experiencing, some have accused them of simply mourning change itself. After all, the line goes, change is inevitable. that is true, of course, but we are speaking of a new kind of change, the like of which has never before occurred on this scale, in this time frame. And when we mourn this change,

we are not talking of grief over the loss of a beloved relative or friend, whose passing we mourn but whose presence among us we also celebrate—I speak of the loss of a kind that will never be resurrected, and whose passing will be noted consciously by few. I speak of deaths with no funerals, losses mostly without recognition: I speak of extinctions. Who speaks for these dead? Who sings a lament when the last of a species is gone? And who understands the few mourners at the wake?

Aldo Leopold, writing of the passing of the Passenger Pigeon in his book *A Sand County Almanac,* wrote: "For one species to mourn the death of another is a new thing under the sun. The Cro-Magnon who slew the last mammoth thought only of steaks. The sailor who clubbed the last auk thought of nothing at all. But we, who have lost our pigeons, mourn the loss."

Do you understand the pain of those in Bosnia, seeing their loved ones slaughtered and their villages destroyed? Have you heard the cries from Rwanda, as Hutu and Tutsi battle one another? Surely we have all grieved over the senseless deaths in these and so many places where human madness has won out over human kindness. Can you then not hear the sound of ecosystems dying, the cry of thousands of species looking for members of their communities, which are no longer?

> *In Ramah there was a voice heard, lamentation and weeping, and great mourning,*
> *Rachel weeping for her children, and would not be comforted, because they were not.*
>
> —Matthew 2:18

THAT THERE ARE MOURNERS there is no question. The grief comes tentatively, personally. "Where is the Indigo Bunting I used to see on the telephone wires every summer over by the Johnson farm?" "Did you hear a Whip-Poor-Will this summer?—we never heard one at our place." "I haven't seen a Luna Moth in years." And there are other questions, bravely framed as scientific inquiry, but secretly are laments: "Have you noticed there seem to be far fewer shells on the beaches?" "Are the number of snakes declining in the state?" "Doesn't it seem to you that there are fewer insects?"

I believe the need to mourn what's being lost is crucial. The loss of a warbler song in May, or the destruction of a favorite meadow, are personal losses. The grief is essential, and to deny it is to keep a wound festering. But society at large does not recognize the dying, and therefore rejects the need to mourn, under the guise that the mourner is merely lamenting "progress." And the grief is deepened, I think, knowing that we are both mourner and murderer, the bereaved as well as the executioner. "I am become Death," were Oppenheimer's words, I believe, when he witnessed the first atomic bomb explosion. Does it not feel at times that *we* "are become death," we, our culture and our diseased ways?

The Creator felt that way about people at one time, so disgusted with the whole lot of us that God decided to destroy Creation:

> 13 *And God said to Noah, "I have determined to make an end of all flesh, for the earth is filled with violence because of them; now I am going to destroy them along with the earth."*
>
> —Genesis 6:13

But God realized that there *were* righteous people, and decided to save part of Creation, and start anew, reestablishing the covenant with the people and with all living things.

> 11 *I establish my covenant with you, that never again shall all flesh be cut off by the waters of a flood, and never again shall there be a flood to destroy the earth.*
> 12 *God said, "This is the sign of the covenant that I make between me and you and every living creature that is with you, for all future generations.*
> 13 *I shall set my bow in the clouds, and it shall be a sign of the covenant between me and the earth."*
>
> —Genesis 9:11–13

God decided that Creation was worth saving, and that human beings were—and are—part of that Creation. If the Creator can forgive us—and is that not the entire message of the New Testament—does that not give us great hope? The world will not be a better place without people—although in our collective guilt we sometimes feel that way—but the world *will* be a better place when people learn to live in right relationship to the rest of Creation.

As Quakers, we are keenly aware that to be full human beings, we must recognize the full humanity of all other people. But I think that each of us will be fully human only when we recognize the full aliveness of all Creation, and act on that recognition, when we learn to "speak to that of God in everything." Hear the words of Old Jack, an elderly farmer in one of Wendell Berry's (1986) novels:

> The way we are we are members of each other. All of us. Everything. The difference ain't in who is a member and who is not, but in who knows it and who don't.

*LISA GOULD is a member of Westerly (R.I.) Monthly Meeting and has published a number of booklets and leaflets for Quaker Earthcare Witness. She serves as the Executive Director of the Rhode Island Natural History Survey and also does quite a bit of informal writing, lecturing, and teaching about the natural world.*

## Article 2

# Earth Process and the Wish for Human Exemption

by Keith Helmuth

(Adapted with permission from *EarthLight* magazine, Issue #25, Spring 1997)

IN 1967 Lynn White Jr., historian of technology and Medieval culture, published an essay titled, *The Historical Roots of Our Ecological Crisis*, in which he identified the Biblical tradition of human dominion over the Earth as the origin of the environmental trouble we are now in. This essay marked the opening of a discussion on ecology and the Bible which is still gaining momentum and is now widely recognized as critically important for understanding and possibly altering our culture's eco-destructive behavior.

During this discussion many Christian thinkers have rallied to the defense of "dominion" by casting it in a stewardship mold. In addition, the Bible has been diligently combed in search of passages which reflect any degree of ecological understanding. Most of the references which can be read in this light are found in the Hebrew scripture and amount to a forceful reiteration of the fact that "the earth is the Lord's," "all flesh is as grass," and that humans are accountable to God for the use they make of Creation.

From the standpoint of ecology, this re-reading of the Bible quickly runs into a limitation. The context of understanding is still *ownership*—God's ownership and human management. Good management is certainly better than bad management. But management remains management, and, with regard to what we now know about the ecological complexity of the earth, the idea of human management is a stunningly arrogant delusion.

## The ethos of domination

REVISING OUR UNDERSTANDING of dominion and rehabilitating a theology of creation is not likely to alter the fact that the ethos of domination permeates Western culture. The urge to dominate is undoubtedly a pre-biblical behavior. But the biblical injunction to march under the banner of a progressively widening dominion, has allowed this tendency to be amplified into a virtual worldview, a generally unconscious assumption about the natural order of things and relationships.

## Denial of Earth process

THE PROBLEM OF DOMINION, however, is just the tip of the theological iceberg. Looking deeper, I see two other configurations of feeling, thought, and language, intrinsic to the biblical worldview, which are of even greater ecological significance. They are the misunderstanding and stigmatizing of death and the wish for exemption from the basic conditions of Earth process.

## The wish for exemption

THE STORY OF A SUPREME God's chosen people in the Hebrew scripture flows from the wish for special status in the fabric of Earth's social ecology—special status in relation not only to other life forms, but in relation to other human groupings as well. The story of the defeat of death in the Christian scripture is the core of the wish for exemption from the conditions of Earth process.

These two cultural psychologies, these two transcendent wishes, deeply inform Judeo-Christian tradition and its utopian secular derivatives, such as, Marxism, various socialisms, capitalism, and technological utopianism. In combination they have driven the social and economic behavior which has set the stage, and has now dramatically raised the curtain, on the disabling of Earth's biotic environments.

The Christian misunderstanding and stigmatization of death is a more difficult problem, with regard to ecological integrity, than is the ideology of dominion. A whole theology of evil, sin, punishment, and salvation is anchored in seeing death as an enemy. In a still further theological twist, Christian doctrine developed the view that since death was pervasive throughout Earth process, Earth itself was in a "fallen" state. Earth was seen as beholden to the power of evil and in need of redemption.

This unfortunate doctrine can, of course, be refuted from within the Bible itself, since God is clearly recorded as having declared Creation to be "good." The only part of it God is reported to have regretted making is the human. But despite this recovery, we are still left with the powerful assumption that death is the great enemy of life.

The antidote to this profoundly anti-ecological view is not difficult to demonstrate. We are dealing with an error in language, thought process, and logic—an error with great emotional and behavioral consequences. Think of the numerous times you have heard and used the expression "life and death." This expression sets up an opposition which seems self-evidently intrinsic to the natural order of things, a polarity which seems to come from the very dawn of our culture.

But death is not the opposite of life. Death is the opposite of conception and birth. Life is the realm which contains them both. Birth and death are the way life hands itself on from generation to generation, from community to community. Birth and death are like right and left hands folded into each other for the presentation of a gift. When the realization of this monumental error dawns over us, our siege mentality in relation to death releases its grip and we have the opportunity to stand at ease.

This mentality surrounds the story of the Children of Israel at the level of competition with other peoples and emerges in Christianity in relation to death and the place of death in Earth process. This sense of opposition, battle, victory, and domination which has powered Western civilization in its geographic and technological exploits, has now proven to have been a singularly inappropriate way of relating to Earth process. An appropriate understanding of death and the abandonment of the siege mentality may, perhaps, foreshadow the emergence of a truly ecological culture.

In addition to the defeat of death, there is, throughout the Bible, a more generalized wish for exemption from the earth's normal conditions. The accounts of miracles feed the wish for exemption. After the removal of the Israelites from Egypt, the miraculous plays a relatively minor role in Hebrew scripture. But in the Christian scripture, the miraculous is not only high profile, but comes to be the whole point. The suspension of the house rules, a waiver of compliance with the Earth's normal conditions, is seen as the culminating and authenticating component of the Christian story.

Psychic attachment to the possibility of miracles is not in itself a problem. Strange things do seem to happen. But to rest the entire case of eternal truth and the Divine-human relationship on an exemption from the earth's normal conditions is to open the door on a staggeringly difficult theological task. The Christian story of salvation was thus detached from any Earth-based reality and failed to generate an ecologically grounded ethic. Its theological credibility became increasingly diminished as the culture of science, technology, and economic development gained ascendancy.

## Technology, a new secular religion

WHAT DID NOT BECOME REMOTE, however, was the biblically rooted wish for human exemption. It was no longer a matter of waiting for miracles. Miracles could now, increasingly, be designed and produced—made to order. Through the accumulation of wealth and the control of technology, the social relations and economic behavior characteristic of ecological adaptation could more and more be set aside in favor of the pursuit of privilege and aggrandizement.

Technological success became the miracle of a new secular religion, to which a new "chosen people" began to aspire. Thus, we have traveled deep into the logic of consumerism, a logic—still largely divorced from Earth process—which is poisoning the planet.

Do I really think all this can be laid on the doorstep of the Bible? Not quite; the issue is far more complex in terms of cultural influences at work throughout our history. But I do think the development of Western culture cannot be understood or redirected towards ecologically sustainable practices without careful scrutiny of the Biblical code and the worldview which flows from it.

The Bible is central to our culture and is a deep, formative influence, even (or perhaps especially) on those who have never given it much thought. The Bible study reflected here is an effort to rescue our heritage. It is, after all, the only scripture we have. I am suggesting that if we disentangle and extract the anti-ecological elements of the biblical worldview, then the truly vital and enduring values of our heritage—namely compassion and justice—may shine through and help us build reasonably harmonious social ecologies within the various wild ecologies of the given, ongoing Creation.

*KEITH HELMUTH is a market farmer, community development activist and writer who currently is living in Philadelphia, Pa. A member of the New Brunswick Friends Meeting, of Canadian Yearly Meeting, he is sojourning with Central Philadelphia Monthly Meeting.*

## Article 3

# Right relationship

by Lisa Lofland Gould

(from *Caring for Creation, Reflections on the Biblical Basis of Earthcare*, Quaker Earthcare Witness, 1999)

*For where your treasure is, there will your heart be also.*

—Matthew 6:21

*You see, I am alive.*
*You see, I stand in good relation to the earth.*
*You see, I stand in good relation to the gods.*
*You see, I stand in good relation to all that is beautiful.*
*You see, I stand in good relation to you.*
*You see, I am alive, I am alive.*

THIS NATIVE AMERICAN POEM expresses a joy of living in balance, in right relationship to the Creator, other people, and all Creation. What does it mean to stand in good relation to the Earth? In good relation to all that is beautiful? In good relation to one another?

Are we standing in good relation to the earth? Here are a few of the facts:

- Each second a forested area the size of a football field is cut down; we lose an area a little smaller than the state of Kentucky each year.
- Billions of tons of topsoil are lost from cropland each year. As the quality of agricultural land diminishes with topsoil loss, there are also decreasing water supplies available for irrigation and increasing conversion of farmland industry and other forms of development. World grain production in 1995 was 5 percent below the 1990 harvest, and carryover stocks declined.
- The increase in $C0_2$ and others gases' concentrations in the atmosphere may cause as much as a 5- to 7-degree Fahrenheit rise in mean global temperature by the year 2040;

this is as much change in mean global temperature as has occurred since the last ice age, but it will occur in 50 years rather than in 20,000. 1995 was the warmest year on record; the ten warmest years of the past 130 years occurred during the 1980s and 1990s. [See Unite 14 on Climate Change and Earth Process.]

- Air pollution damages crops, livestock, human health, and ecosystems all over the world. "What goes up, must come down": the pollution that comes from one place ends up in another. Soot from the oil fires in Kuwait made the snows in the Himalayas black and oily; the fallout from the Chernobyl nuclear power plant disaster fell on Sweden and Norway. There has been a 40-percent increase in the asthma rate in the industrialized Western world since 1982, one third of the victims children—air pollution, both indoor and outdoor, is considered to be the major factor.
- The presence of chloroflourocarbons (CFCs) in the atmosphere is breaking down the ozone layer, which protects us from ultraviolet radiation; there are concerns that this will affect both agriculture and human health.
- Thousands of barrels of toxic and radioactive waste have been buried in landfills or dumped into the ocean; these are time bombs for future generations.
- Each year, three million children under age five die of diarrheal diseases, related to poor water quality—a direct result of poverty and the unequal distribution of the world's resources.
- The human population reached 5.8 billion in 1996, and is predicted to reach nearly 10 billion by the year 2050; at the same time, the planet will be facing major changes in climate, with unprecedented effects on agriculture and coastal habitations. The ongoing loss of topsoil will act in synergy to have an impact on human ability to produce food.
- Current estimates suggest that each hour anywhere from four to eight species go extinct (compare this to the "massive" die-off of the dinosaurs, which occurred at a rate of one species every 1,000 years); we believe that by the year 2000 20 percent of all existing species will be gone (the tiger and the rhinoceros likely to be among them). We have named only a small percentage of these species, and know very little about how they function within their ecosystems. Some scientists have likened most species to rivets in the body of a jet plane: You don't see them, or think about them, but they are crucial. How many rivets can an airplane lose before it crashes? How many species can be lost before ecosystems crash, with unpredictable effects on all life on the planet, including human life?

OKAY—ENOUGH. We have been bombarded with such facts for many years now. I first saw Mark, my future husband, at an organizational meeting for the first celebration of Earth Day at the University of Rhode Island in 1970; in 1995, at the 25th anniversary celebration of Earth Day, we were still saying the same things. And you know, they have been said, in some form, for thousands of years! I have already written about the many Bible passages that talk about God's laws for protecting the Creation. But God also gave some clear instructions on how to be in right relationship with the land itself, through laws that required a year of rest for cultivated land every seventh year:

> *Six years you shall sow your field, and six years you shall prune your vineyard, and gather in their yield; but in the seventh year there shall be a sabbath of complete rest for the land, a sabbath for the Lord; you shall not sow your field or prune your vineyard.*
>
> —Leviticus 25:3–4

There was also to be a year of rest every 50th year, the jubilee, when all slaves were to be freed and land leases would expire, everyone returning to their ancestral holdings and their families. God says quite firmly that people cannot own the land forever:

> 23 *The land shall not be sold in perpetuity, for the land is mine; with me you are but aliens and tenants.*
> 24 *Throughout the land that you hold, you shall provide for the redemption of the land.*
>
> —Leviticus 25:23–24

And the Bible tells us, in quite clear terms, what will happen if we don't follow God's laws, including our covenant relationship with the land, in these lines from Leviticus:

> *19 I will break your proud glory, and I will make your sky like iron and your earth like copper.*
> *20 Your strength shall be spent to no purpose: your land shall not yield its produce, and the trees of the land shall not yield their fruit....*
> *33 And you I will scatter among the nations, and I will unsheath the sword against you; your land shall be a desolation, and your cities a waste.*
> *34 Then the land shall make up for its sabbath years as long as it lies desolate, while you are in the hands of your enemies, then the land shall rest and make up for its sabbath years.*
> *35 As long as it lies desolate, it shall have the rest it did not have on your sabbaths when you were living on it.*
>
> —Leviticus 26:19–20

Proverbs also reminds us of the land relationship:

> *20 Therefore walk in the way of the good, and keep to the paths of the just.*
> *21 For the upright will abide in the land and the innocent will remain in it;*
> *22 but the wicked will be cut off from the land, and the treacherous will be rooted out of it.*
>
> —Proverbs 2:20–22

Of course Isaiah has something to say on this:

> *4 The earth dries up and withers, the world languishes and withers, the heavens languish together with the earth.*
> *5 The earth lies polluted under its inhabitants; for they have transgressed laws, violated the statutes, broken their everlasting covenant.*
> *6 Therefore a curse devours the earth, and its inhabitants suffer for their guilt....*
>
> —Isaiah 24:4–13

As does Hosea:

> *For they sow the wind, and they shall reap the whirlwind.*
>
> —Hosea 8:7

APPARENTLY these laws involving land redemption were mostly ignored by the Israelites from the beginning. Ever since then, it's curious how little we have heard from the religious community about the Levitical laws involving the sabbath for the land, and the fact that the land ultimately belongs to God, while other Levitical laws, such as those against homosexuality, have been widely trumpeted.

Do we have some selective vision here? How easy it is to attack a practice when we believe it has nothing to do with us, but oh, how scary things get when our money is involved, and how contorted the denial becomes! We have people in our country now who will not admit that the actions they take on "their" land affect adjoining lands and waters (or perhaps they simply do not care about those effects). Can you imagine what might happen if the religious community were to begin to preach about sabbath for the land? Sixty years of "cold war" already inform us of how terrified capitalist society is at the idea of communal land ownership—and the failure of industrial communism informs us that different models are needed. There is much new thinking to be done, for the area of private property rights—and our culture's belief that it can take endlessly from the Earth—needs all the spirit-led thought and action it can muster.

Wendell Berry in *Home Economics* states: "The industrial mind is a mind without compunction; it simply accepts that people, ultimately, will be treated as things and that things, ultimately, will be treated as garbage."

Even if you've never read the Bible, you couldn't have helped but know, as part of our culture, that the Bible is ambivalent about wealth. Solomon and Job, for example, are rewarded with great wealth, but those who let the pursuit of wealth become the driving force in their lives are warned over and over again. How familiar to all of us are these lines from Scripture:

*9 But those who want to be rich fall into temptation and are trapped by many senseless and harmful desires that plunge people into ruin and destruction.*
*10 For the love of money is a root of all kinds of evil, and in their eagerness to be rich, some have wandered away from the faith and pierced themselves with many pains.*

—1 Timothy 6:9–10

*19 Lay not up for yourselves treasures upon earth, where moth and rust dost corrupt, and where thieves break through and steal:*
*20 But lay up for yourselves treasures in heaven, where neither moth nor rust doth corrupt, and where thieves do not break through nor steal:*
*21 For where your treasure is, there will your heart be also...*
*24 No man can serve two masters: for either he will hate the one, and love the other, or else he will hold to the one, and despise the other. Ye cannot serve God and mammon.*

—Matthew 6:19–24

*It is easier for a camel to go through the eye of a needle than for a rich man to enter the kingdom of heaven.*

—Mark 10:25

Nor are admonitions about loving money only to be found in the New Testament:

*15 The idols of the nations are silver and gold, the work of human hands.*
*16 They have mouths, but they do not speak; they have eyes but they do not see;*
*17 They have ears, but they do not hear, and there is not breath in their mouths.*
*18 Those who make them and all who trust them shall become like them.*

Psalms 135:15–18

*The lover of money will not be satisfied with money; nor the lover of wealth, with gain.*

—Ecclesiastes 5:10

*You have sown much, and harvested little;*
*You eat, but you never have enough;*
*you drink, but you never have your fill;*
*you clothe yourselves, but no one is warm;*
*and you that earn wages earn wages to put them into a bag with holes."*

—Haggai 1:6

THE ENTIRE BIBLE is a treatise about right relationship, warning over and over about the sins of excess wealth, lust, power, and religious apostasy. The Old Testament is full of God telling people how to behave, explaining over and over that God *expects* responsible behavior—and the people ignoring the laws, and being punished over and over. The New Testament is about the Divine Spirit coming to earth and showing people how it's done, trying to capture their imaginations in a totally new way.... and people are still ignoring God's message.

John Woolman was very concerned about the right relationship with wealth, and right relationship among people.

> ...Look, my dear friends, to Divine Providence, and follow in simplicity that exercise of body, that plainness and frugality, which true wisdom leads to; so may you be preserved from those dangers... such as are aiming at outward ease and greatness.
>
> Treasures, though small, attained on a true principle of virtue, are sweet; and while we walk in the light of the Lord there is true comfort and satisfaction in the possession; neither the murmurs of an oppressed people, nor a throbbing, uneasy conscience, nor anxious thoughts about the events of things, hinder the enjoyment of them.

Notice that Woolman is talking about the ability to enjoy life to the fullest, when we are in right relationship with our possessions.

Woolman recalls in his Journal a discussion with a Friend who was defending the slave trade, saying it was a biblical imperative that the descendants of Cain, whom God made black in punishment for killing Abel, be enslaved:

> ...I was troubled to perceive the darkness of their imaginations, and in some pressure of spirit said, "The love of ease and gain are the motives in general of keeping slaves, and men are wont to take hold of weak arguments to support a cause which is unreasonable. I have no interest on either side, save only the interest which I desire to have in the truth. I believe liberty is their right, and as I see they are not only deprived of it, but treated in other respects with inhumanity in many places. I believe He who is a refuge for the oppressed will, in his own time, plead their cause, and happy will it be for such as walk in uprightness before him."

AS WOOLMAN TRAVELED throughout the eastern U.S. during the mid-1700s in witness against slavery, he worried about the effect of slavery on both the slave and the enslaver. He wrote in his journal "...the white people and their children so generally [live] without much labour... I saw in these southern provinces so many vices and corruptions increased by this trade and this way of life, that it appeared to me as a dark gloominess hanging over the land; and though now many willingly run into it, yet in [the] future the consequences will be grievous to posterity."

Should we hear "the murmurs of an oppressed people" or have "a throbbing uneasy conscience" as we go about our lives? Well, do we know where our electricity comes from? Do we know if people have been forced off their lands, deprived of their hunting grounds, and seen their cultures disintegrate so that we here in America can forget to turn out the lights? Do we know where our garbage goes—whose community it is buried in or who breathes the smoke from the incinerator where it is burned? Do we know whose impoverished country accepts the toxic wastes that we refuse to have on American soil? It seems to me we continue to make that age-old assumption that, in Wendell Berry's words, "it is permissible to ruin one place or culture for the sake of another." *(Home Economics)*

So we continue to struggle with "the love of ease and gain," both in our relationship with our fellow human beings and our relationship to the rest of Creation. We still reap the bitter fruits of slavery, even now, 130 years after its abolishment: How long will we reap the fruits of our treatment of the Earth? Friends are very proud of Quaker achievements in helping to right our relationship with the slaves; to hear some Friends, you'd think that abolition happened just yesterday and they'd been part of the Underground Railroad themselves! Let us turn around, Friends, and look forward into the future: In the year 2126—130 years from now—will Friends look back so proudly at Quaker achievement in righting our relationship with Creation? What are—and will be—the spiritual consequences of our disconnection from the Earth?

Realize, Friends, that we're not trying to "preserve" the Earth! That sounds like we're going to pickle it, put it neatly in a jar and keep it on a museum shelf somewhere, to be dusted off and gawked at every now and then. *That's* how we've been treating the Earth for far too long—as "Other." The Earth will likely do quite nicely preserving itself—we're trying to save *ourselves,* by bringing ourselves back into right relationship with Creation and the Creator.

Christ tells us: "Be ye therefore perfect, even as your Father which is in heaven is perfect." [Matthew 5:48]. I struggled with this word "perfect" for many years: I knew there was no way *I* would ever be perfect; that was simply unattainable for any person, and certainly for me. But then a Friend in our Meeting, who had studied Hebrew, said that another translation for "perfect" was "whole." "Be ye whole" —now *that* has potential, that gives us hope. What if we focus on wholeness—*holiness*—the bringing together of all Earth communities?

How do we begin to create wholeness? We begin in the most obvious place, ourselves. As I mentioned in the first unit, one area that seems to be out of right relationship in today's world is *time*. But this, too, is an old problem—look at that wonderful story of Mary and Martha that Luke tells. In the story, Jesus and the disciples are traveling:

> Now as they went on their way, he entered a certain village, where a woman named Martha welcomed him into her home. She had a sister named Mary, who sat at the Lord's feet and listened to what he was saying. But Martha was distracted by her many tasks; so she came to him and asked, "Lord, do you not care that my sister has left me to do all the work by myself? Tell her then to help me." But the Lord answered her, "Martha, Martha, you are worried and distracted by many things; there is need of

only one thing. Mary has chosen the better part, which will not be taken away from her."

—Luke 10:38–42

Now can't you just hear Martha muttering in the kitchen and banging pots for the next hour: "Of *course* she's got the better part; she's in there sitting on her duff while I'm in here cooking dinner for a small tribe!" What woman doesn't resonate to that story, and while fully understanding Jesus' message, still sympathize with Martha? How to balance the Mary and Martha in all our lives is crucial to coming round right with time!

And yet, I cannot help but wonder what Jesus might have to say about the dishonoring of Martha—of all that relates to the so-called feminine side of us—in today's society. Rearing children, cooking meals, cleaning the house, caring for our neighbors, tending the sick and elderly—the keeping of a home and caring for a community—are so devalued now that people who do these things full-time often apologize for not "working"! Modern society has a deep prejudice against work that does not earn a wage. After all, time is money, right?

John Woolman also wrote on right relationship with time: "So great is the hurry in the spirit of this world, that in aiming to do business quickly and to gain wealth the creation at this day doth loudly groan."

Woolman found ways to make clear his witness against slavery, such as wearing undyed cloth (so he would have no connection with the trade of indigo dye, which used slave labor), and refusing to write bills of sale for slaves. Today things seem more murky; it's often harder to make those clear witnesses. But how did Woolman know when he was not in right relationship? He listened to the Inner Light, constantly, to assess what he should do. When he was not in right relationship, he knew it: He would be "in considerable agitation of mind." If we are to discern our place in Creation, we must also take that time to listen, to be open to that "still, small voice." This is the reason I stress the need for us to get into right relationship with time.

One of my gauges for right relationship is beauty. I don't mean the way that we people usually label beauty, calling a rose "beautiful" and a tarantula "ugly." I mean the true beauty of *integrity*. If something is beautiful, there is a harmony to it—it radiates integrity, whether we speak of an animal or plant, music, a child's toy, a meal we serve. We know when we have had a beautiful day: The pieces fit together, and we flow from one part to another. If we live in a beautiful way, we know it. I think it is especially important that we surround children with true beauty—in our homes, our schools, our Meetings—that we envelope them with that integrity, both as a spiritual shield against the crumbling integrity of our wider society, and as a germ of hope.

Isaiah has a lovely, Quakerly phrase about what will happen when we are in right relationship:

17 *The effect of righteousness will be peace, and the result of righteousness, quietness and trust forever.*

—Isaiah 32:17

Ecclesiastes also reminds us of the beauty of the pattern, of being part of the inner stillness:

3 *What do people gain from all the toil at which they toil under the sun?*
4 *A generation goes, and a generation comes, but the earth remains forever.*
5 *The sun rises and the sun goes down, and hurries to the place where it rises.*
6 *The wind blows to the south, and goes around to the north; round and round goes the wind, and on its circuits the wind returns.*
7 *All streams run to the sea, but the sea is not full; to the place where the streams flow, there they continue to flow.*

—Ecclesiastes 1:2–11

WE KNOW IT IS NOT EASY to change our ways, our patterns of living. But I like to think that even our mistakes and backslidings have a use. The analogy of gardening came to my heart in worship one First Day—of how I need to root out bad habits, like I need to weed the garden. Some habits are like chickweed and easily uprooted; although they may pop up again from seed, they can again be removed. Others habits have deep taproots and grubbing them out is sweaty and difficult. How easy to remove only those parts which show on the surface, and leave

the deep roots to sprout again! Weeds will always pop up in any empty space, any place in the heart left neglected and untended. But I had a happy thought: The weeds can be thrown onto the compost heap of the soul, fertilizing one's life and adding richness and depth to the soil. It is from that compost that we grow.

Friends, let us keep these words in our hearts, let us allow them grow in our imaginations as we seek the path back to right relationship.

*You see, we are alive.*
*You see, we stand in good relation to the earth.*
*You see, we stand in good relation to the gods.*
*You see, we stand in good relation to all that is beautiful.*
*You see, we stand in good relation to each other.*
*You see, we are alive, we are alive.*

## Article 4

# What Does the Judeo-Christian Tradition Teach Us, *Earth-Wise?*

by Louis Cox

(Adapted from *Becoming a Friend to the Creation*, Quaker Earthcare Witness, 1994)

QUAKER EARTHCARE WITNESS encourages a spiritual concern for the environment because we believe that is the key to motivating people to live in ways that do not threaten the fragile ecological systems on which all life depends. In other words, if we respond only when we are impacted personally, irreversible damage will continue until it is too late for everyone.

There are encouraging signs that orientations are changing. "Environmental theology" is springing from the roots of ancient traditions, and there is growing appreciation for the store-house of sophisticated, yet earthy wisdom to be found in indigenous religions.

When it comes to specific spiritual paths or religious traditions, we tend to take a pragmatic stance that I would express this way: "Practice Earthcare or stewardship in the context of whatever faith works for you. (Religion, like language, is universal; but both are experienced in terms of particular faiths and languages, which are bound up with their respective human cultures.) Quakerism works for us, but from the standpoint of integrity of Creation we value any religious tradition or orientation that fosters benign treatment of the Earth."

But some deep ecologists, eco-feminists, and adherents of holistic philosophies have condemned the Judeo-Christian tradition for doing the opposite. Certain attitudes and values that they associate with that tradition (patriarchy, dualism, etc.) are blamed for just about every environmental and social ill. (The parallel influences of ancient Greek and Roman cultures on the attitudes and values of Western civilization tend to be overlooked in this indictment.)

Such skepticism has been fed in part by historians trying to correct what they see as serious biases in traditional portrayals of "how the West was won." Heroic pioneers have been recast as religious imperialists and environmental anarchists, quoting the Bible as they deforested the continent and pushed native peoples and native flora and fauna to the edge of extinction. But those of us who are descended from European stock and who were steeped in Judeo-Christian values from childhood doubt that blame can be laid so easily at the feet of a faith tradition. History also records responsible, even saintly, conduct that had been nourished by the same tradition. Evidently there is potential there for both good and bad. For our cultural-religious heritage is a lot like our genetic makeup: Even if we consciously disown it, *at some level it will always be part of us.* Since genetic and cultural endowments tend to be mixtures of positive and negative qualities, we can still make a difference by *focusing on what is positive*.

ELIZABETH G. WATSON, author of the Quaker Earthcare Witness booklet *Healing Ourselves and the Earth,* lists five patterns in thinking or perception, long associated with the Judeo-Christian tradition, that she believes have been destructive to the earth. But she points to other, more constructive patterns that are just as strongly grounded in biblical wisdom. For example, the hierarchical thinking that starts with Heaven above and puts the earth literally on the bottom of the heap is symbolized by "Climbing Jacob's Ladder." But we also have "Dancing Sarah's Circle" to symbolize a more egalitarian, less human-centered attitude toward the rest of Creation.

Another positive aspect of the Judeo-Christian tradition is that it does, on closer examination, appear to have a strong Earth-friendy aspect. For example, many scriptural references can be cited to demonstrate that respect for Creation was a central part of the original Covenant.

The traditional Quaker practice of studying scriptures and then holding them in the Light can also be helpful in the search for religious truth about the environment. We need look no farther than the writings of John Woolman, who studied the Bible intensively all of his life, for whom the need to protect all living Creatures was just as biblically based as his convictions against slavery:

> *I kept steadily to meetings; kept First-day afternoons chiefly in reading the scriptures and other good books; and was early convinced in my mind that true religion consisted in an inward life, wherein the heart doth reverence and love God the Creator, and learns to exercise true justice and goodness, not only toward all men, but also toward the brute creatures—That as by his breath, the flame of life was kindled in all animal sensible creatures, to say that we love God as unseen, and at the same time, exercise cruelty toward the least creature moving by his life, or by life derived from him, was a contradiction in itself."*
>
> —*Journal,* pp. 21–22

THROUGH THE INNER LIGHT, Woolman was led to a sense of the will of God for his life that was all the more compelling because it came from the Bible *as a whole* and did not rely as much on literal adherance to selected verses.

Putting ancient scriptures in historic context might help explain the fairly minor role the environment seems to play in the Old and New testament writings: By the time most of the books of the Bible were written, agricultural practices in the Middle East had already wrought significant environmental damage, but the pace of degradation was far too slow to attract attention in anyone's lifetime. So it's likely that the ancient biblical writers would have had a lot more to say on this subject if they had been confronted with the acute environmental crises that are unfolding today.

More significant than scattered scriptural references to the earth is the emergence, described in the book of Genesis, of a new kind of religion among the early Hebrew people: The descendants of Abraham are distinguished in realizing they belong to something larger and more enduring than a tribe or city-state. They are part of Creation, and thus a conscious, responsible part of the goodness it represents.

> Now the Lord said to Abram, "Go from your country and your kindred and your father's house to the land that I will show you. I will make of you a great nation, and I will bless you, and make your name great, so that you will be a blessing. I will bless those who bless you, and the one who curses you I will curse; and in you all the families of the earth shall be blessed."
>
> —Genesis 12:1–3

Yahweh's noted jealousy (Exodus 20:5) stems from intimate involvement with his people. The gift of free will is bound to the promise of a greater destiny through union with the Divine will. The Sinai Covenant is a *statement of optimism,* declaring that what people do in their daily lives has cosmic significance. Our modern Western concepts of *history, progress, and individual responsibility* can be traced in part back to this *unique consciousness of divine leadership*.

The New Testament records another historically significant spiritual breakthrough: the extension of the original Covenant from the realm of outward conduct to the *Kingdom within*. (Matthew 23:27) At the same time, the definition of the "people" called to share the new Covenant is expanded to include the entire human race. (Romans 3:29)

These basic themes and patterns of the Judeo-Christian tradition have, for better or worse, echoed throughout Western civilization and continue to have a profound impact on our environmental consciousness today, regardless of the particular belief system we may ascribe to. For example, the archetype of Creation is largely responsible for our culture's *creative orientation* to the physical world—a two-edged sword, to be sure. It has helped us develop technologies that

sometimes upset the balance of nature. On the other hand, it is one source of our deep interest in the laws of the nature, without which we could not acquire the scientific knowledge needed to identify and address environmental problems.

Creation-consciousness also accounts for our instinctive *sense of responsibility* for what is happening in the world, as well as the climate of hope and the *vision of a better world* that keep us searching for solutions.

The Judeo-Christian warnings against rebelling against the divine order explain why things have gone so wrong environmentally, especially since the Industrial Revolution: Pride, selfishness, and arrogance have led us to make gods of ourselves. We are reaping the alienation and self-destruction that result when we break our historic covenant with the Creator. As 2 Chronicles 7:14 puts it:

> *"...if my people who are called by my name humble themselves, pray, seek my face, and turn from their wicked ways, then I will hear from heaven, and will forgive their sin and heal their land.*

BUT AWAKENING TO OUR SPIRITUAL ROOTS is only the beginning. The environmental crisis is forcing us to look at religion itself in a radically new way: If the earth's life-support system is destroyed, little else that we may pursue in the name of religion will matter; if the balance of nature is lost, prospects for peace and brotherhood will go down with it. Therefore, followers of all religions need to be open to new revelations about what is truly enduring, what is sustainable in the light of modern environmental knowledge.

At the same time, environmental concerns need to be broadened to include timeless spiritual questions: Not just, "How are our actions and the substances we release affecting ecosystems?" But also "Who are we?" "Why are we here?" "What is lacking in us that keeps us from wholeness and harmony?" "How do we recover what is missing?" I believe that some partial answers to those questions can be discerned in the Judeo-Christian scriptures.

*LOUIS COX is Publications Coordinator of Quaker Earthcare Witness. He is a member of the Burlington (Vt.) Friends Meeting, where he is active in the Earthcare Commmittee. He also serves on the Earthcare Ministry committee of New England Yearly Meeting. Together with his wife, Ruah Swennerfelt, he grows much of his own food, lives in a solar-electric house, and tries to walk gently on the earth.*

## Questions for reflection

### Article 1: "Connections"

- How do we nurture our connections with one another? With Creation?
- Do I work to improve sharing of resources with everyone?
- In our witness for environmental issues, are we careful to consider justice and the well-being of the world's poorest people?

### Article 2: "Earth Process and the Wish for Human Exemption"

- What do the concepts of "dominion" or "stewardship" mean to me?
- What is my response to Keith Helmuth's article? How do I agree? How do I disagree?
- Do I accept personal responsibility for stewardship of Creation? Are we formulating and implementing an ethic for responsible care of our planet?
- How far can I transcend my theological differences with others to work together with them for the healing of the earth?
- Do I hold in the Light my own and other spiritual traditions to discover the ways they foster a cooperative relationship with the natural world?
- Do you find the following Bible quote supportive of Keith Helmuth's position?

> *For the same misfortune which befalls the sons of men befalls beasts; even one misfortune befalls the: as one dies, so dies the other; yes, they have all one breath; so that man has no preeminence over the beast;...*
>
> —Ecclesiastes 3:19

## Article 3: "Right Relationship"

- Am I careful to avoid spending and investing money in ways that result in others doing things to the earth that I would not do myself?
- Do we work together to educate ourselves about the care of Creation in order to make responsible choices?
- Do we work to improve sharing of resources with everyone?
- Am I careful to avoid spending and investing money in ways that result in others doing things to the earth that I would not do myself?

## Article 4: "What Does the Judeo-Christian Tradition Teach Us—Earthwise?"

- Do I understand that the Judeo-Christian tradition has elements that encourage respect and care for the earth as well as other elements that do not? How do I discern those that are helpful and appropriate for the issues of our time?
- Do we in our church or Meeting regularly study the spiritual foundations for caring for Creation?
- Do I treat with reverence the natural resources of the earth which all living things share interdependently?
- Do we seek to understand the spiritual consequences of our broken relationship with the rest of Creation, and how this broken relationship is affecting our human communities and the wider biological communities to which we belong?

## Illustrative activities

1. Form an Earthcare group in your church or Meeting.
2. Re-study the Bible with Earthcare in mind.
3. Study Lisa Gould's book, *Caring for Creation, Reflections on the Biblical Basis of Earthcare*, Quaker Earthcare Witness, 1999.
4. Explore Quaker Minutes on Earthcare in Appendix A.
5. Create new queries and Minutes.
6. Develop and present a sermon for children and adults.

## Prayers and responsive readings

A Call to Prayer
from Hildegard of Bingen
(1098–1179)

"God is the foundation for everything.
This God undertakes, God gives, such that nothing that is necessary for life is lacking.
The Earth is at the same time mother,
She is mother of all that is natural, mother of all that is human.
She is the mother of all, for contained in her are the seeds of all.
The earth… contains all moistness, all verdancy, all germinating power.
It is in so many ways fruitful,
All creation comes from it. Yet it forms not only the basic raw material for human kind, but also the substance of the incarnation of God's son.

—*Earth Ministry,* March 2001, back page, *www.earthministry.org*

## A Benediction Antiphon
## For All Nature's Gifts

All praise:
For our sun, and all other suns.
For rain as it comes to us, and
For drought and flood.
    For they are all natural.
For all animals, fierce or friendly.
For Birds and butterflies and reptiles and
For all species, everywhere and every kind.
    For we are all related.
For our human friends and loves:
For those we fear and those we hate.
For all saints and all murders and
For all those who are neither.
    For we are all related.
For all languages,
    For they bring the world to us.
For all the arts,
    For they restore our vision.
For all knowledge wise enough to confess ignorance,
    For that keeps us real.
…For pain and joy.
For rage and peace.
For growth and age.
For fear and courage.
    For they are all natural, and remind us we are alive.
For canyons, mountains, rivers, plains, plants and rocks,
    For they are all natural
…For every chance we have to heal another,
Ourselves, or the Earth, and
For everything that helps us find our place
And leads us home
    For all these too are natural.
    For life,
    For death…
    For Nature,
    All one,
    All accepting.
    For all of it
    —all of it—
    All Praise

—Gary Holthaus and delivered at the Sitka Symposium
Island Institute, Sitka, Alaska, June 2003.

## Unit 3. Earthcare and the Bible


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# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 4

## Ideas for programmed Meetings and churches

by Ingrid Fabianson, M.Div.

BELOW ARE a sample Sunday service, three sample sermons, and a sample Sunday School lesson. This format could be used with any of the topics in this book. Each unit includes ideas for scripture selections and hymns, and provides background material for a sermon. The person preparing the sermon may wish to look for resources in Appendix B to provide suggestions to the congregation for where to find more information. Included in Appendix A is the Friends United Meeting Minute on Caring for Creation, approved at the FUM Triennial in 1999.

Another helpful resource may be *Earthcare for Children, A First Day School Curriculum,* also published by Quaker Earthcare Witness. (See Appendix C for more information on Quaker Earthcare Witness publications.) This book may be helpful in finding age-appropriate material for the children's time during Sunday services.

Although the primary focus of the book is on adult religious education, many of the activities could be used by the whole congregation before or after services. The "Population Resources Exercise" (from Unit 13) is more engaging with a larger group participating.

### Sample Sunday service

Theme:
Appreciating and Caring for Creation

#### _____Scripture_____

*But ask the animals, and they will teach you, or the birds of the air, and they will tell you: or speak to the earth and it will teach you, or let the fish of the sea inform you....*

—Job 12:7–8

*In the Lord's hand is the life of every creature and the breath of all human kind.*

—Psalms 24:1 (NRSV)

#### _____Hymn_____

For the Beauty of the Earth

*For the beauty of the earth, for the glory of the skies*
*For the love which from our birth, over and around us lies*
*Lord of all, to thee we raise, this our hymn of grateful praise.*

*For the beauty of each hour of the day and of the night,*
*Hill and vale and tree and flow'r, sun and moon and stars and light;*
*Lord of all, to thee we raise, this our hymn of grateful praise.*

*For the joy of ear and eye, for the heart and mind's delight,*
*For the mystic harmony linking sense to sound and sight:*
*Lord of all, to thee we raise, this our hymn of grateful praise.*

## Prayer

God, enlarge within us the sense of fellowship with all living things . . . to whom thou gavest the earth as their home in common with us. We remember with shame that in the past we have exercised the high dominion of (humankind) with ruthless cruelty so that the voice of the earth, which should have gone up to thee in song, has been a groan of travail. May we realize that they live not for us alone but for themselves and for thee, and that they love the sweetness of life. Amen

—St. Basil the Great (329–379 C.E.)
As quoted in *Earth Ministry,* September-October 2000

## Devotion

OUR PLANET IS SUFFERING from overuse and a blatant disregard for the ecosystems that support life. If we, as Quakers, seek to continue growing in compassion and forgiveness, how do we use our gentle wisdom to help stop this environmental crisis? How do we attend, as agents of Divine Grace, to God's covenant for the earth? How do we cope with our own feelings of despair as we open our hearts and minds to the wounds being inflicted on nature? Where is our loving service required and how do we discover this place of action? If the Quaker ministry of right action calls us to service, then how do we effectively educate those who are ignorant and challenge those who exploit?

Psalm 104, 1–13 "Hymn to God the Creator" (NRSV)

*Bless the Lord, O my soul. O Lord my God, you are very great.*
*You are clothed with honor and majesty, wrapped in light as with a garment.*
*You stretch out the heavens like a tent,*
*You set the beams of your Chambers on the waters,*
*You make the clouds your chariot,*
*You ride on the wings of the Wind,*
*You make the winds your messengers, fire and flame your ministers.*
*You set the earth on its foundations, so that it shall never be shaken.*
*You cover it with the deep as with a garment; the waters stood above the mountains.*
*At your rebuke they flee; at the sound of your thunder they take to flight.*
*They rose up to the mountains, ran down to the valleys to the place that you appointed for them.*
*You set a boundary that they may not pass, so that they might not again cover the earth.*
*You make springs gush forth to the valleys; they flow between the hills, giving drink to every wild animal; the wild asses quench their thirst.*
*By the streams the birds of the air have their habitation; they sing among the branches.*
*From your lofty abode you water the mountains; the earth is satisfied with the fruit of your work.*

## Sample sermon

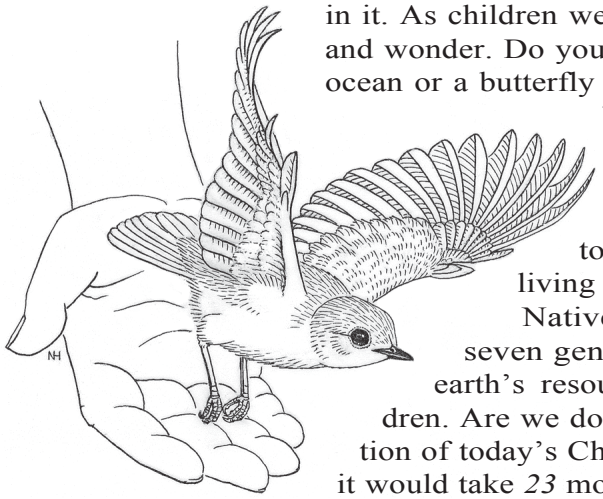
### Compassion in Service to the Earth

I CHOSE JOB 12:7-8 AND PSALM 104 for this theme because those who are close to creation are "in God's hand." Just as Saint Basil asks God to enlarge within us this fellowship with all living things, our own spiritual growth is tied to Creation and the natural world. We can be unaware of this connection and move through our days blind to the beauty of the sunrise or the dew in a spider web. If we are removed from that place we call "home," however, we remember the meadows, the bird calls, and the smell of sea air. If we recall our childhood, we experience again the scent of a spring rain on newly mown grass or the flash of a cardinal, red against the snow. These memories sustain us in times of separation and connect us to family, place, and

roots. Nature connects us to where we find meaning in our lives.

As a child, I spent long days in my father's Seattle garden. My favorite spot was under the dining room window, where the dahlias grew. I would crawl back in that green cave and watch the sunlight through the colors overhead. God once spoke to me there. God said: "Don't give up. You have important work to do." I do not remember why I wanted to give up, but I do remember the sacredness of the moment, surrounded by a sea of blazing pinks and reds with the moist earth smell at my feet. A Great Spirit and I met in that greening cave, and I was shown the Divine in the natural world.

Not all of us have mystical experiences in nature, but all of us find comfort and sustenance in it. As children we seek out the natural world and are filled with awe and wonder. Do you remember the first time you saw a mountain or the ocean or a butterfly cocoon? Can you recreate within you the sense of blessing and grace you felt when a new puppy licked your face? Creation sustains and nurtures us. We are partners in the world, different but equal. As we come to recognize the sacredness of Creation, we come face to face with our own divine nature. Our reverence for all living things becomes the key to peace and harmony within.




Native American elders have told us to live for the next seven generations. This means preserving and nurturing the earth's resources for our great-great-great-great-great grandchildren. Are we doing this? I've heard it quoted that if the entire population of today's China developed Western lifestyles equivalent to our own it would take *23* more Earths to maintain all of us. Every day we hear of one more extinction, or a new illness due to pollution, or extreme episodes of heat due to global warming. The glaciers in Glacier National Park are disappearing. What are we going to do? Creation is calling us to acts of reverence for the sake of those to come.

AS CHRISTIANS, we have made a covenant with God to live in harmony with God's created world. As Quakers, we have always been concerned that our outward life reflect inner truth. Our generation has been given the honored task of making others aware of the imbalance in the natural world, a balance undone by our own making. We can do this by honoring God's Creation and living a life of aware simplicity. This is our "important work." Lives depend on it.

Let us take time to wonder, to use our imaginations, to grasp the complexity of the web of life within which we live. We are miracles, each and every one of us, brilliant and capable of returning Creation back to the healthy state God meant for it to be.

But be warned. As we fall more in love with Creation, we become more aware of the acts of slashing and burning, polluting and flooding. We have to witness the loss of great vistas, the damming of pristine rivers, the loss of species, the draining of ponds and wetlands. Sometimes it feels as if our own skin is being cut, the pain is so deep. But we cannot hide in denial; we must do what we can where we are. Remember the old saying, "Act locally; think globally"? It still applies. At the local level we can become role models, teaching others by example. We can form groups so that we do not feel so devastated at the losses and yet share the joys of the successes.

This is my invitation to you. I encourage you to continue growing into persons of compassion and forgiveness *in service to the earth*. It will take all the strength you have. You will lose many acres of precious land before enough people have enough consciousness to recognize that their grandchildren's future is at risk. Your heart will break as you face those who are shortsighted and filled with hunger or greed. It will take all your compassion and all your forgiveness to continue to move forward, tested just as Susan B. Anthony and Elizabeth Cady Stanton were one century ago, for a battle of equal worth. You cannot do it alone. Like that great social movement that occurred before us, it will take a group of dedicated people, and then another group and another group, until the wisdom (or fear) becomes great enough to create real change.

In closing, I want to remember some of the voices that have come before us: the Celtic Christians, who so loved the earth they spoke in music like this: *Almighty God, Sun behind all*

*suns...the sunshine of thy presence is shown forth,"* or Hildegard of Bingen: *"(God says) I, the fiery life of Divine Wisdom—I ignite the beauty of the plains, I sparkle the waters, I burn in the sun, the moon, and the stars...."* Or the passion of the psalmists or the sensuality of the Song of Solomon ...the wonder of Creation reverberates down through the ages.

IN THE LAST 200 YEARS human beings have harmed the natural world to the point of possible extinction. We know it; we have to act. We can encourage others and ourselves to adopt a new attitude toward the earth, to learn to use the earth's resources wisely, to be a voice for the earth, and to honor life, the cosmos, and our connection to the universe. How we do this is for each of us to decide.

Quaker Meetings can study these questions and the testimonies, putting them into practical action, adapting them to the needs of the earth. In this way we can be God's hands in cultivating a deep respect for the creative forces that support life. Through meditation and expectant waiting, the way will open. The action that follows will ensure that our grandchildren's generation will know what we have known and see what we have seen. Are we the last generation to see glaciers in Glacier National Park? Or can we, through a creation-centered ministry and reverence toward Earth's great gifts, reverse the tide in time?

## Sample Sunday School lesson

In preparation for this lesson, I suggest the following resources and actions:

1. Have your Meeting join Quaker Earthcare Witness and order copies of all their pamphlets for your library. Read them and talk about them.
2. Discover and contemplate Meetings' queries regarding Creation.
3. Meditate on and respond to the questions below:

*What else can we do as stewards of Creation?*

In order to encourage others to honor and respect God's Creation, we must understand and respect it ourselves, as well as teach the tools needed to sustain it. The Quaker testimonies provide us with one map for teaching sustainable living. The *testimony of integrity* calls us to act with wisdom. We know we have an obligation to be responsible stewards of the earth. The *testimony of peace* recognizes that all life is sacred; we must answer to that of God in all Creation. The *testimony of equality* calls us to acknowledge that planet Earth was not created just to serve humans and thus begin to live with the right sharing of resources. The *testimony of simplicity* calls us to conserve our resources and live within our means, avoiding a practice of immodest consumption.

Living within the Quaker testimonies requires spiritual discipline and time for reflection. As we quiet our environment and our minds, our "needs" diminish and we see the value of the things around us and our place within them. Our lives can become more balanced. We find ourselves avoiding the step that would crush the last violet of summer: we become aware. "Way opens" to see the sacredness of Creation and the miracle of life. We can evolve into restored people who live sustainable life-styles, in balance with ourselves and with the planet. Our growing awareness of the holy in Creation, together with the sacred task of restoration, will deepen our compassion, give our lives meaning, and help us find our prophetic voice in the service of those who have no voice. We can thus find peace in the natural world.

In the dark of the Moon
In the dead of night
In the dead of winter in flying snow
    the world in danger
    wars raging
    families dying
I walk the rocky hillside
    sowing clover.

—Wendell Berry

## Questions

1. Do my values and my visions for the future sustain the earth and its resources?
2. What can I do at the local level to help Creation?
3. Discuss the biblical references to Creation and humans' responsibility to it.
4. Discuss the relationship of the following activities to the ministry of caring for Creation:
   - ❖ Eating habits.
   - ❖ Consumerism.
   - ❖ Population growth.
   - ❖ Global climate change.
   - ❖ Sustainable energy.
   - ❖ Right livelihood.
   - ❖ Staying aware.
   - ❖ Changing hearts in a challenging time.
   - ❖ Sustainable development.
5. Create a prayer to say on Earth Day.

## Closing

In closing, I call you into silent worship. As we enter the silence, please consider the following queries, remembering the Quaker testimonies of simplicity, justice, equality, and peace:

*Is my Meeting concerned that human interaction with nature be responsible, guided by a reverence for life and a sense of the splendor of God's continuing creation?*

*How am I helping to develop a social, economic, and political system which will nurture an environment which sustains and enriches life for all?*

*Am I aware of the place of water, air, and soil in my life?*

(Silent worship) (Thank you)

## Poem

### The Peace of Wild Things

*When despair for the world grows in me and I wake in the night at the least sound in fear of what my life and my children's lives may be, I go and lie down where the wood drake rests in his beauty on the water, and the great heron feeds.*
*I come into the peace of wild things who do not tax themselves with forethought of grief.*
*I come into the presence of still water.*
*And I feel above me the day blind stars waiting with their light.*
*For a time I rest in the grace of the world, and am free.*

—Wendell Berry, 1998, Counterpoint Press

## Prayer

Dear Mother/Father God:
Thank you for this greening Earth, for the creatures large and small. Thank you for the delicate and intricate systems that sustain us. Help us, Dear Lord, to live in harmony with Creation, honoring our covenant to you to live in balance and beauty. Help us to harmonize our longings with our needs as we encourage others to do the same. Guide us in wisdom so that we may educate as well as challenge those who are harming your design. Continue to show us your presence in all created things, in the sun and the moon, in the soil and in the air, in the unfurling leaf and in the wood drake's nest. We ask this in the name of our Lord, amen.

## Sermon 2

# Returning to Eden

by Ralph Greene

THE BIBLICAL ACCOUNT tells of how God moved through chaos to create form from formless ness, substance from the void, order from confusion, light out of darkness. The Creator made the stars, sun, planets, moon, water, sky, land, vegetation, and the creatures of sea and land in a progression which would make many scientists comfortable. God came not as a construction worker but was a creator. C.K. Chesterton observed that "the difference between construction and creation is this: that a thing constructed can only be loved *after* it is constructed; but a thing created is loved *before* it exists." When God looked over creation, God saw that it was good. Then God created humankind, charging them saying, "Be fruitful and increase in number; fill the earth and subdue it" as good stewards; never exploiting, wasting, or despoiling it but taking care of creation in the service of God. God looked over all of this and saw it was very good. God planted a garden and placed the man and woman in this bountiful place. God rested, calling on human creatures to live the sabbath life, to honor all that is holy in creation. The world could then sing songs of praise:

*Morning has broken, like the first morning,*
*Blackbird has spoken like the first bird.*
*Praise for the singing! Praise for the morning!*
*Praise for them springing fresh from the Word!*
*Sweet the rain's new fall, sunlit from heaven,*
*like the first dew fall on the first grass,*
*Praise for the sweetness of the wet garden,*
*sprung in completeness where His feet pass.*
*Mine is the sunlight! Mine is the morning.*
*Born of the one light, Eden saw play!*
*Praise with elation, praise every morning,*
*God's recreation of the new day!*

—Eleanor Farjeon

GOD GAVE THEM all the fruits of the garden. In this place there were two special trees: the tree of knowledge and the tree of life. As it turned out, it was to be a short journey to the tree of knowledge but an arduous journey to the tree of life. God commanded them never to eat from the tree of knowledge, or death would be their due. After a time, the human creatures were tempted to taste of the forbidden fruit and suddenly became aware of their nakedness. When God walked in the garden in the cool of the day, he grew very angry because of their disobedience and forced them out of the garden. And so it is that God's love can be tough love. Immediately God knew that they would suffer and come to know the darkness of the soul and death in their body, but God had compassion on them and clothed them so that they might be warm.

From that time, God became a lonely lover, walking the garden of the earth with anger, anguish, sorrow, yet holding out the gifts of hope, love, and faith that human beings could partake of the tree of life. Still, the enticing taste of the fruit of the tree of knowledge remains intoxicating. Through the amazing fruit of knowledge, humans' attempt to exercise god-like powers of life and death over creation. This great idolatry of human mind and flesh as "ruler" of the universe has unleashed untold misery on creation: destruction, wars, violence, hunger, poverty, alienation, and death. Humankind, created in God's image, found itself curiously "like God" in the desert but no longer with God in the garden. With knowledge there was a pursuit of happiness but the loss of joy; a joy which can only come from being in the presence of the Creator. So it is that God despairs but never gives up as long as there is at least one willing to journey to the tree of life.

It is said that hell is a place where there is no hope and no future. This has become a condition of impoverished peoples worldwide. This hell gives rise to violence, revolution, terrorism. A minority of people in privileged places have a unique opportunity to make a difference in creation and in the lives of others. Knowledge knows of environmental concerns, ecology, organic

living, sustainability, peacemaking, mutual concord, arbitration, mediation. Yet these ideals become lost in the fog of information and political agendas. It is as scripture teaches: Humankind has outsmarted itself having partaken of the fruit of the tree of knowledge. In spite of our technology we descend farther into the hell of violence, war, poverty, destruction, despair, and alienation.

Scripture tells us that humankind is invited to journey from the abyss to the tree of life. Out of the secular morass the journey begins with an encounter with God. The journey is undertaken not with knowledge but with wisdom. Wisdom moves in faith, not having answers but knowing that the destination is the tree of life. Walt Whitman said it well in his poem "Song of the Open Road":

> Wisdom is not finally tested in the schools,
> Wisdom cannot be pass'd from one having it to another not having it,
> Wisdom is of the soul, is not susceptible of proof, is its own proof.

WISDOM RECONCILES US with the Creator in the cool of the day, and we do not have to be afraid or feel that we have to hide our nakedness. We become humble, obedient learners in the school of Christ, where the three "R's" of repentance, redemption, and reconciliation are experienced, not taught. It is a singing of the old Shaker hymn "Simple Gifts" as we journey, finally understanding the meaning of "coming 'round right." It is giving testimony along the way, with confidence, for we can speak of community, harmony, equality, and simplicity with new insight. This encounter is life-changing and therefore is not for the faint-hearted or comfortable, who are continually tempted to eat the forbidden fruit of Eden. From our testimony comes our ministry. Our hands become the hands of God through ministries of stewardship and reconciliation.

Through wisdom we understand the fullness of Psalm 24 (the steward's psalm) for the psalm raises several queries and then gives a blessing to the steward:

> *The earth is the Lord's and the fullness thereof, the world and they that dwell therein. Who shall ascend the mountain of the Lord, Who may stand in his holy place? They who have clean hands and a pure heart, who do not lift up their soul to an idol or swear by what is false. They will receive blessing from the Lord and vindication from God the Savior.*
>
> —Psalm 24:1-5

WHO SHALL ASCEND THE MOUNTAIN of the Lord and come to this holy place? The journey takes us through the whole of scripture from Genesis to Revelation. But it is only by wisdom that humankind can come to the tree of life. We see images of what it is like to feast at the tree of life in the last few verses of Revelation. "Then the angel showed the river of the water of life, as clear as crystal, flowing from the throne of God and of the Lamb down the middle of the great street of the city. On each side of the river stood the tree of life, bearing twelve crops of fruit, yielding its fruit every month. And the leaves of the tree are for the healing of the nations. No longer will there be any curse." It is as Christ has said: "I am the Alpha and the Omega, the First and the Last, the Beginning and the End. Blessed are those who wash their robes, that they may have the right to the tree of life and may go through the gates into the city." (Revelations 21). This is holy ground, the beginning of the end; a returning to Eden.

> This is holy ground, we're standing on holy ground,
> For the Lord is present and where God is is holy.
> These are holy hands. He's given us holy hands,
> He works thru us and so these hands are holy.
> These are holy lips, He's given us holy lips.
> He speaks thru us and so these lips are holy.
> These are holy times, we're living in holy times,
> God loves thru us and so these times are holy.
>
> —Christopher Beatty

*RALPH GREENE has served as an educator and as pastor of several Quaker Meetings in Maine and Massachusetts. He is presently sojourning with St. Stephen's University in St. Stephen, New Brunswick, to develop a program of stewardship and reconciliation which is international, intercultural, and interdenominational in scope.*

## Sermon 3

# Letting Go of Fear

by Bill Stevens

WHEN I LOOK at our destruction of the earth and ask *why* we are doing what we are doing, I see two things going on:

Our plunder and pollution are partly consequences of a worldview that assumes that:

1. Nothing is sacred.
2. Nature is to be conquered, controlled, and consumed rather than revered.
3. We are masters of the universe, above nature, with no limits.
4. The world is defective (a problem to be solved).

But I think all of us would agree that something more is going on than just a worldview. Our busyness, obsession with work, and overconsumption are also part of a *spiritual issue*. Why are we so busy (paving the world over, chopping down the forests, draining the aquifers, exhausting ocean fisheries)?

It has something to do with our inner restlessness, insecurity—fear that we are not good enough or that if we stop our hectic pace, uncomfortable thoughts will intrude.

Not feeling good about ourselves, we try to earn our worth through work and accomplishment. Martin Luther called it "works righteousness." We apply this religious enterprise to the secular sphere. Or we try to prove what marvelous people we are by buying a humongous house or prestigeous car.

Further, to cope with our fear born of the fragility of life, we erect bulwarks of security: We surround ourselves with lots of things. Unfortunately, these strategies don't work; we are only fooling ourselves, and with dreadful consequences—destruction of the earth itself.

The core spiritual issue, I believe, is *fear*. All the negative and destructive things we do in life are ultimately rooted in fear. This is the conviction of Gerald Jampolsky in his little book *Love is Letting Go of Fear*. All destructive activity (war, plunder of Earth and neighbor, excessive consumption, addiction, anger, greed, hatred) all are rooted in fear.

That fear is the central issue of the destruction of the earth is suggested in Old Testament, where Adam hid from God because he was afraid. (Genesis 3:8-13)

(Note also in verses 12 and 13 Adam's resort to *blaming*, a typical indicator of *addiction*, which many observe to be another spiritual factor in the destruction of the earth.)

We think that Adam was afraid and hiding because he didn't have any clothes on, but really it was because he had been stripped of his innocence (living in simple, trusting harmony and balance with nature).

I think this chapter may be a primordial memory of what went wrong in God's good creation (the theme of Chapter 1) with the emergence of agriculture and civilization, namely the loss of simple trust and wonder, which were replaced by greed and the need to control.

Through fear, Adam and Eve were cast out of the garden paradise. That's our story as well.

(Another important environmental insight in Genesis 3:3: "Of the tree in the midst of the garden you shall not eat." This verse clearly states there are limits to our consumption; when we transgress these limits we are cast out of the garden.)

I am saying, then, that fear may be the central spiritual issue in our destruction of the earth. And overcoming fear is what the Gospel is all about.

At Jesus's birth, Luke 1:30, the angel said to Mary, "Do not be afraid, Mary, for you have found favor with God." Also, in Luke 2:8–11, the angel said to the shepherds, "Do not be afraid." At the end of Jesus's life, Matthew 28:5, the angel tells the two Marys, "Do not be afraid." In verse 10, Jesus says it to them.

It's so easy to brush over these verses as just filler, especially since they were spoken by angels (whom we may not take seriously today). Or we may think these verses are addressing the fear associated with seeing an apparition. But they are like bookends, marking the core concern of the Gospel, overcoming fear, which I believe is the core issue in the environmental crisis. I don't believe these pronouncements are accidental; they are fundamental truths.

SO, HOW IS FEAR OVERCOME? That's the great spiritual question. Jesus made it plain that it is not by amassing possessions. Only love overcomes fear, says Jampolsky in *Love is Letting Go of Fear*. True security, meaning, and worth in this life are rooted only in God's love, for only love overcomes fear. I John 4:18 states it succinctly: "Perfect love casts out fear." This link between love and overcoming fear is right there in Luke 1:30: "Don't be afraid… you have found favor with God." Surely favor is a form of love.

Letting go of our busyness and overconsumption and destructive ways means letting go of fear by receiving God's love. Here is the church's central mission, and the core solution to the environmental crisis: the proclamation of God's love. (The solution is not just a political enterprise, getting our systems and terminology rightly structured.) Our worth, value, and security are a gift of God's love. They are not based on anything we do or accumulate.

This fundamental Christian truth is beautifully expressed in Henri Nouwen's powerful little book, *Life of the Beloved*. Without a sense of belovedness, the things we do become frantic and destructive (of self, relationships, and the earth). This book was written to his secular, non-religious Jewish friend, Fred, who yearned for something to cling to.

Nouwen based this treatise about belovedness on two great transformative moments in Jesus's life where he experienced his own belovedness: His baptism and His transfiguration.

So many things in life undermine our sense of belovedness, tell us we are no good, second-rate, third-rate, or not even worth rating. They put us down, tell us we are worthless, defective.

"Becoming the Beloved is the great spiritual journey we have to make," Nouwen says. To nurture us on this journey, I'd like to share the following words from his *Life of the Beloved:*

> Aren't you, like me, hoping that some person, thing, or event will come along to give you that final feeling of inner well-being you desire? Don't you often hope: May this book, idea, course, trip, job, country, or relationship fulfill my deepest desire"? But as long as you are waiting for that mysterious moment you will go on running helter-skelter, always anxious and restless, always lustful and angry, never fully satisfied. You know that this is the compulsiveness that keeps us going and busy, but at the same time makes us wonder whether we are getting anywhere in the long run. This is the way to spiritual exhaustion and burnout. This is the way to spiritual death.
>
> Well, you and I don't have to kill ourselves. We are the Beloved. We are intimately loved long before our parents, teachers, spouses, children, and friends loved or wounded us. That's the truth of our lives. That's the truth I want you to claim for yourself. That's the truth spoken by the voice that says, "You are my Beloved."
>
> Listening to that voice with great inner attentiveness, I hear at my center words that say: "I have called you by name, from the very beginning. You are mine and I am yours. You are my Beloved, on you my favor rests. I have molded you in the depths of the earth and knitted you together in your mother's womb. I have carved you in the palms of my hands and hidden you in the shadow of my embrace. I look at you with infinite tenderness and care for you with a care more intimate than that of a mother for her child. I have counted every hair on your head and guided you at every step. Wherever you go, I go with you, and wherever you rest I will keep watch. I will give you food that will satisfy all your hunger and drink that will quench all your thirst. I will not hide my face from you. You know me as your own as I know you are my own. You belong to me. I am your father, your mother, your brother, your sister, your lover, and your spouse... yes, even your child... Wherever you are I will be. Nothing will ever separate us. We are one."

Friends, the core truth I wish to express: We are beloved of God. We don't have to earn it or prove it; just accept it. We don't have to destroy the earth looking for a substitute. Then savor life. Life is a gift to be savored, not a problem to be solved.

*BILL STEVENS, after graduating from Wake Forest University and Yale Divinity School, served for 23 years as pastor of First Friends Meeting in Greensboro, N.C. He also received a Ph.D. from Drew University. From 1993 to 2003 he was director of the Glenagape Retreat Center near Greensboro. He is currently a member of New Garden Friends Meeting in Greensboro, where he is clerk of Ministry and Counsel. This sermon was originally given as the Bible lesson at the Quaker Earthcare Witness Steering Committee meeting in the spring of 2002.*

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## Organizations

- Earth Ministry. 1305 NE 47th St., Seattle WA 98105. Newsletter: *Earth Letter.*
- Nature Conservancy. 4245 North Fairfax Dr., Suite 100, Arlington VA 22203-1606
- Quaker Earthcare Witness. 173-B N. Prospect St., Burlington VT 05401-1607. Newsletter:
  *BeFriending Creation. Website: <http://www.QuakerEarthcare.org>.*
- Quaker Eco-Witness for National Legislation (QEW-NL) 173-B N. Prospect St., Burlington VT 05401. Newsletter: *Quaker Eco-Bulletin.(QEB).*

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# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 5

## Peace on Earth, Peace with Earth

by Kim Carlyle

### Purposes of this unit

1. To make the connection between our concerns for peace and our concerns for ecological integrity. This relationship becomes clear as we approach the issues from a broader perspective and consider them in a longer time frame.
2. To see from a broader, ecological perspective that God's Creation is an interwoven fabric. Everything is interconnected and what is done to a single thread affects the whole.
3. To discern long-term causes and effects, to learn where the seeds of war were planted, how they were nurtured, how they blossomed and bore their awful fruits. With this knowledge of history, we can work at prevention.
4. To take our peace work beyond reaction (protesting government policies, trying to reconcile those with differences, attempting to limit the use and type of weapons, and working to alleviate the suffering of war) to emphasizing the reduction or elimination of conditions that can lead to war.
5. To teach the value of prevention, just as healthcare and fire-fighting professionals have done. It's time for peace activists to put this tool into their kits. War, its preconditions, and its aftermath have devastating environmental implications. Destruction of the environment increasingly is a precursor to war.
6. To become proactive, and therefore more effective, in our peace work. We must make the connections: Peace on Earth must include Peace *with* Earth.

### Sacred texts and other inspirational readings

> *The earth dries up and withers, the world languishes and withers, the exalted of the earth languish. The earth is defiled by its people; they have disobeyed the laws, violated the statutes and broken the everlasting covenant. Therefore a curse consumes the earth; its people must bear their guilt. Therefore earth's inhabitants are burned up, and very few are left.*
>
> —Isaiah 24:4–6 (NIV)

> I told (the Commonwealth Commissioners) I lived in the virtue of that life and power that took away the occasion of all wars and I knew from whence all wars did rise, from the lust, according to James's doctrine... I told them I was come into the covenant of peace which was before wars and strifes were.
>
> —George Fox, 1651

> Oh, that we who declare against wars and acknowledge our trust to be in God only, may walk in the Light and therein examine our foundation and motives in holding great estates! May we look upon our treasures and the furniture of our houses and the garments in which we array ourselves and try whether the seeds of war have any nourishment in these our possessions or not. Holding treasures in the self-pleasing spirit is a strong plant, the fruit whereof ripens fast. A day of outward distress is coming and divine love calls to prepare against it!
>
> —John Woolman, *A Plea for the Poor*, 1763–64

### Care for God's Creation

George Fox "…lived in the virtue of that life and power that took away the occasion of all wars and [he] knew from whence all wars did rise, for the lust, according to James's doctrine" (Journal/1651). It is the same lust (cravings, desires, self-centeredness) that causes violence in war, and which causes us to do violence to God's creation. The "life and power that takes away the occasion of all wars" also takes away the occasion for violence against the creation.

The concern for the care of God's creation has long been implicit in our Christian testimony. We recognize that our historic peace testimony is a testimony to living in harmony with the world in a covenant among God, humanity, and the creation (Gen. 9:8–13), a covenant the renewal of which was foreseen by the prophets as in Isaiah's vision of the peaceable kingdom (11:1–9), by Paul (e.g., Rom. 8:12–17), and in the great commission when the risen Christ told the eleven, "Go into all the world and proclaim the good news to the whole creation" (Mark 16:15 NRSV, the AV has "all creatures"). Implicit in our testimony on simplicity is the understanding that we will not take more than we need, particularly (and here we move into the testimony on justice) if it means depriving others, including future generations, of their basic needs.

We call upon Friends to examine their own lives to see if their own patterns of consumption reflect self-centeredness and greed rather than a concern for living harmoniously in the creation, that we might witness to the world that harmony. We call upon the nations of the world, and in particular our own governments, to enact laws and reach agreements which will protect the creation from the effects of human exploitation, greed, and carelessness.

—Approved at Friends United Meeting Triennial Sessions, 1999

The notion of Friends being in unity with nature is really important, but it's off to the side. This issue belongs front and center with the Peace testimony—because this degradation of the earth's ability to support creation is rapidly becoming a leading cause of war.

—Steve Curwood, host, "Living on Earth,`"National Public Radio program,
speaking at the 2001 FGC Gathering

As I watch us, the human species, destroy the earth for our own purposes, I think that we believe, mistakenly, that the planet belongs to us and that we are the masters of it. Really we belong to it.… We have to take corporate action to repeal the policies that commit structural violence against our living planet....

—Joe Volk, Executive Secretary
Friends Committee on National Legislation
speaking at the 2001 FGC Gathering

## Hymns and songs

I've Got Peace Like a River. *Worship in Song, a Friends Hymnal,* # 246.
A Song of Peace. *Worship in Song, a Friends Hymnal,* # 304.

## Issue presentations

### Living in a Radically New Way

SINCE 1955 when he registered as a conscientious objector, Karl Meyer has been an activist for peace, advocating nonviolence, organizing demonstrations, and refusing to pay taxes to finance war. Over the years, he has come to realize that an essential piece of the peace witness has been missing. Recently he wrote:

> The avaricious momentum of our culture drives us inexorably into repeated outbreaks of hot war. We cannot reverse our own participation in this process of culture simply by holding more demonstrations and events for peace… We must think about where we are going and understand how our own economic and social patterns of life contribute to the overall momentum of violence.

Our lifestyles not only contribute to the occasion of war, they also contribute to our ecological crisis. Karl Meyer also asserts that, in addition to the hot wars that erupt all too frequently, since the middle 20th century we have lived with an ongoing subtext of two quiet wars:

> One is the low intensity war of Western culture against the biological viability of our mother Earth. The other is the imperial war of U.S. culture against weaker countries for control and exploitation of the limited material resources of our planet.

These quiet wars—one of exploitation, the other of ecological destruction—are inextricably linked and provide the framework for this section. The lesson of this unit was put most eloquently, again by peace (and earth) activist Karl Meyer:

> The experience of my whole life tells me that we, in America, must learn to live in a radically different way. We must consume less, destroy less, and share the wealth of Earth with all that is alive around us, or we cannot have lasting peace with all who need to survive and thrive with us on the same planet.

Peace on Earth is peace *with* Earth.

## The occasion of war

TO LIVE in the virtue of that life and power that takes away the occasion of all wars, we must understand what conditions lead to human conflict. Throughout history, the seeds of war have always included populations in contention for scarce resources and land, as well as basic injustices and abuses of human rights. In our contemporary world, these causes are greatly magnified as 80 million people are added to the planet each year, as powerful multinational corporations require increasing levels of production and consumption, and as the limited resources of God's creation are plundered and wasted.

- The richest 20 percent of people on earth account for 86 percent of the world's private consumption.
- The poorest 20 percent of people on earth account for 1.3 percent of the world's private consumption.
- Over his or her lifetime, a child born in an industrialized country will consume more resources and contribute more pollution than 30 to 50 children born in developing countries.

The seeds of war are nourished by the burgeoning human population, by an increasing rate of consumption in the rich countries, and by an unequal distribution of wealth throughout the world.

Let's look at some specific problem areas:

### Water

AS PRIVILEGED MEMBERS of a technological culture, we often take for granted the fundamental elements of life. We turn the sink tap, open a cold drink, or shop for food in the supermarket, giving little thought to the precious water that makes so many goods and services readily available. Many of us cannot even name our local water source or explain what happens to the water that goes down the drain. Water scarcity, for us, is a temporary restriction on watering the lawn or washing the car, a minor inconvenience—at least for the present. But for the majority world, it's a completely different story. It's an occasion of war.

In *Water Wars: Privatization, Pollution, and Profit*, Vandana Shiva explains that many wars, often described as cultural clashes or ethnic conflicts, are actually water wars. Israel's extensive industrial agriculture requires irrigation from both the Jordan River and its groundwater. "The 1967 war… was in effect an occupation of the freshwater resources from the Golan Heights, the Sea of Galilee, the Jordan River, and the West Bank." After describing Israel's disproportionate share of regional water, Shiva states, "The water apartheid, demarcated along ethnic and religious lines, is fueling the already heated Israeli-Palestinian conflict."

There are scores of other water hot spots in the world. Turkish dam projects on the

Euphrates River will reduce Iraq's water allotment by 80 to 90 percent; for the ten African countries that share the Nile Basin, allocation has been a source of unending battle; and even in the United States, armed federal officers were called to quell a dispute between farmers and tribal leaders and environmentalists over the Klamath River in Oregon.

Friends concerned about peace in the world and Friends concerned about ecological integrity should be concerned about the global water crisis.

- 508 million people live in water-scarce countries; by 2025, 3 billion people will live in 46 such countries.
- The World Health Organization estimates that 1.3 billion people do not have access to clean water.
- A pound of wheat can be grown with 60 pounds of water.
- A pound of meat requires 2,500 to 6,000 pounds of water.

In the 1980s, The U.S. Central Intelligence Agency reported that wars of the 21st century would be fought over water, as wars of the twentieth century had been fought over oil.

## Petroleum

FROM THE JAPANESE INVASION of petroleum-rich Indonesia in World War II to the present hostilities in the Middle East and Central Asia, the last century has seen demand for oil resources become a primary cause of war.

The United States' economy depends on oil. Its foreign policy is driven by this dependence on oil. It requires a global military presence to ensure the flow. Part of the motivation for the events of September 11, 2001, which initiated the so-called War on Terrorism, was the presence of U.S. troops in the holy land of Saudi Arabia.

It seems that because of oil, the U.S. meddles in other nations' internal affairs to a degree that has earned it widespread enmity. Part of the motivation for the invasion of Afghanistan by the United States was to establish control so a pipeline could be built to transport natural gas and oil from central Asia to Karachi, Pakistan. U.S. Special Forces are training Georgian troops to defend the Baku-T'bilisi-Ceyhan pipeline, and are training Colombian troops to protect the Cano Limon pipeline.

These seeds of war are nourished by consumer demand for fuel to power the world's 500 million automobiles and to provide comfort, convenience, and consumer goods for the affluent. In all seasons, we can enjoy fresh fruits, vegetables, and flowers that are transported thousands of miles with petroleum energy. We think little of traveling great distances by airplane or short distance by automobile. And we think less about the consequences of our use of fuel.

- 78 million barrels of oil are consumed each day.
- Demand for oil will exceed oil production by 2014.

The burning of oil is responsible for an increase in atmospheric carbon dioxide ($CO_2$), which has intensified the natural greenhouse effect and is changing our climate.

## Global climate change

IN ITS DECEMBER 1995 SECOND ASSESSMENT REPORT, the Climate Impacts Working Group of the Intergovernmental Panel on Climate Change stated, "Climate change is likely to have wide ranging and mostly adverse impacts on human health, with significant loss of life." The adverse impacts on humanity will include changing weather patterns, rising seas, and spread of disease.

The increased moisture in the atmosphere from rising temperatures will increase storm severity—floods in some regions, droughts in others—and alter local climates. As productive agricultural regions become arid, people will suffer from disruption of food supplies and from water scarcity. Large numbers of people will be forced to migrate.

As warming seas expand and glaciers melt, the rising oceans will submerge entire island nations and inundate coastal plains. Ancient cultures will be lost, and millions of refugees will seek higher ground. Try to imagine the chaos as 25 million Muslims flee coastal Bangladesh and enter Hindu India.

Ross Gelbspan wrote about climate change in *The Heat is On*:

> Long before the systems of the planet buckle, democracy will disintegrate under the stress of ecological disasters and their social consequences….it is the poor, precarious, nations of the developing world that would face the threat of totalitarianism first. In many of these countries, where democratic conditions are as fragile as the ecosystem, a reversion to dictatorship will require only a few ecological states of emergency. Their governments will quickly find democracy to be too cumbersome for responding to disruption in food supplies, water sources, and human health—as well as to a floodtide of environmental refugees from homelands that have become incapable of feeding and supporting them.

- Since 1900, heat-trapping $CO_2$ emissions have increased 12-fold, to almost 7 billion metric tons per year.
- The earth's average temperature could increase by 10.4° F, causing a sea level rise of more than half a yard.

Since global climate change is a result of human activity, the social and ecological stresses will be exacerbated by increasing numbers of humans.

### World population

STAN BECKER, speaking on Friends' population concerns at the 2001 FGC Gathering, told a plenary audience: "I pray that the divine will infuse our hearts and minds as we consider what I believe is the greatest problem facing humanity at this time in history."

Friends' concern for population stabilization is based on love and compassion—every child brought into the world should be wanted, loved, and cared for. But increasing population is putting great stress on our ecological support systems as well as our social structures.

The poorest countries in the world are the fastest growing in terms of population. For example, Afghanistan now has 26.8 million people. It is projected that the population will reach 45.9 million by 2025, 67.2 million by 2050. Today in Afghanistan one out of seven infants die before their first birthday; seven in ten of the people are undernourished; life expectancy for men is 46 years; for women, 44 years. These people live in conditions worse than brutal. It will become unspeakably worse as their population expands.

Other countries have similar conditions, with similar projections. Many of these countries, including Afghanistan and Iraq, will have a "population bulge" of unemployed 15- to 24-year-old males in the near future. The United Nations has identified this condition among the precursors to war.

- Each day there are 200,000 more human mouths to feed.
- Each day 35,000 people (mostly children) die from starvation.
- World population will reach 8 to 10 billion by 2050.
- The 49 least developed countries will triple in population.

## War on God's Creation

WHEN WE DEGRADE THE NATURAL WORLD, we desecrate God's Creation. Given that the first and greatest commandment is to love God, we commit a crime of the first order when we dishonor God by corrupting and polluting what we were entrusted by God to care for.

Throughout human history, environmental destruction has followed in the wake of war. Recall the Romans salting the fields of defeated Carthage. But with today's warfare methods and technology, the destruction occurs before, during, and after the conflict.

Weapons testing sites, military bases, and munitions plants are notorious for their contamination of air, soil, and groundwater. Military operations devastate the environment with bombs, smoke, and chemical defoliants. The aftermath of conflict includes residual herbicides, unexploded weaponry, and ruined croplands.

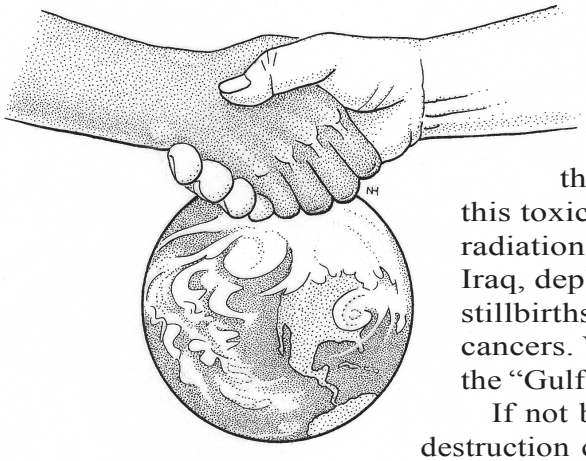
In Vietnam, the damage to ecological systems is still evident after three decades. More than 10 percent of the country was sprayed with an estimated 100,000 tons of Agent Orange, an

environmentally persistent, highly toxic herbicide. High concentrations of this defoliant still exist and have wreaked havoc on complex ecosystems, endangering wildlife and destroying half of the country's mangrove forests.

During the Persian Gulf War of 1991, more than 600 oil wells in Kuwait were set ablaze by retreating Iraqi troops. The cloud of toxic smoke blocked the sun and poisoned the atmosphere, releasing almost a half-billion tons of climate-warming carbon dioxide. Numerous oil spills, in the Persian Gulf (4 million barrels) and in the desert (60 million barrels) killed birds by the thousands and percolated into the ground water, devastating fisheries and livestock.

One hundred million land mines remain in place after the numerous regional conflicts of the last century. The Red Cross estimates that between 1,000 and 2,000 people are killed or maimed by these devices every month. Most detonations occur in peacetime, and most victims are civilians, with children being the most vulnerable.

When a heavy bomb explodes, it generates temperatures that exceed 3,000 degrees Celsius. Not only does this heat annihilate all living matter, it also destroys the lower layers of soil. Regeneration of this earth can take so long that for practical purposes it is destroyed.



A recent innovation in the technology of destruction is Depleted Uranium (DU). Because of its extreme density, shells made of DU are very effective at penetrating targets. On explosion, they release uranium oxide into the air. When inhaled, this toxic substance remains in the body, where it releases radiation for the remainder of the human's or animal's life. In Iraq, depleted uranium residue is blamed for increases in stillbirths, birth defects, childhood leukemia, and other cancers. Veterans groups in the United States blame DU for the "Gulf War Syndrome."

If not bad enough by itself, all this environmental destruction creates a snowball effect. Since the devastated land can no longer support the human population, environmentally ruinous mass migrations occur. And the concentrations of refugees put such stress on the host region that the likelihood of new conflict arises. So the environmental destruction of war begets more environmental destruction, and sows the seeds for more war.

BUT EVEN PEACETIME human activities have declared war on God's Creation. Our consumer culture demands more and more goods and services. Our unhealthy economic structures rely on growth, but growth on a finite planet is not sustainable. Especially harmful are the extractive processes: drilling, mining, and lumbering.

Around the world, the extraction of oil has devastated the environment and destroyed cultures. Roads are carved through rainforests. Drilling sites contaminate fresh water. Leaky pipelines spill millions of gallons of crude oil on pristine tundra. Indigenous people are pushed to the brink of extinction. Local economies are upset, governments are corrupted, and wealth becomes concentrated among a few. Oil refineries pollute the air, soil, and water of the impoverished communities that surround them.

The extraction of coal, notably in Appalachia, devastates entire communities, removes mountaintops, destroys watersheds, and leaves behind hundred-million-gallon toxic slurry ponds. Even so-called clean coal technologies will have to deposit coal's mercury and other toxins somewhere.

The burning of coal and oil are responsible for soot, ground level ozone, and acid rain. The air pollution exacerbates respiratory illness, especially for asthmatic children and the elderly. It has poisoned most of the lakes in the Northeast and is responsible for the decline of our Eastern hardwood forests.

Healthy forests cleanse our air and water, prevent soil erosion, and store carbon that would otherwise likely end up as atmospheric carbon dioxide, a greenhouse gas. (In fact, about a quarter of the increase in atmospheric carbon dioxide is due to deforestation.) Forests also

retain the moisture from rainfall, absorbing water like sponges. Without trees, most rainwater drains away to the rivers and oceans. Without the shade of the forests, the ground quickly dries up. The climate becomes hotter and drier. Aside from these utilitarian purposes, forests are places of spiritual renewal. Yet throughout the world, humans continue to cut the forests down. Eighty square miles of tropical forest are lost each day.

These are but a few examples of the war that humans wage against God's Creation.

## Questions for reflection

- Refer to the George Fox quotation in Section II. What does it mean in the 21st century "to take away the occasion of all wars?"
- Refer to the John Woolman quotation in Section II. In the 21st century, what are the seeds of war?
- *This is the word of the Lord God to you all, and a charge to you all in the presence of the living God; be patterns, be examples in all countries, places, islands, nations wherever you come; that your carriage and life may preach among all sorts of people, and to them; then you will come to walk cheerfully over the world, answering that of God in everyone; whereby in them you may be a blessing, and make the witness of God in them to bless you.*

  —George Fox, 1656

  Have we earned the right to walk cheerfully over the world? That is, are we patterns and examples?
- What legacy for world peace do we want to leave to our children? To their children?
- What can we do in the next five years that would increase the chances of world peace 10 to 20 years from now?

## Illustrative activities

### 1. Try whether the seeds....

a. Choose a product (e.g. athletic shoes, cut flowers, books and paper products, etc.) and describe the social and environmental costs and consequences of its production, distribution, use, and disposal. Describe how the costs and consequences might nurture the seeds of war.
b. Do the same with an item of food (banana, coffee, chocolate, asparagus in December, etc.).
c. Do the same with a recreational activity (resort vacation, golf, skiing, etc.).

### 2. War on Creation

a. Discuss and list some of the negative environmental consequences of war.

b. Discuss and list some of the negative environmental consequences of consumption of what John Woolman would call "superfluities."

### 3. Reflection

### To End All Wars

(from Karl Meyer)

*Nonviolence*
*Simple Living*
*Sharing Earth's Resources*
*Reverence for Life*
*Service to Others*

*WE BELIEVE in a unified Earth, in which we respect the life force in all other beings, and support the diversity and survival of all the many forms of life. We believe in one human community across all national boundaries. We seek to abolish war, and to live peacefully with all people.*

*To this end, we will need an equitable social economy in which every person has access to a reasonable share of land, housing, and secure means of family livelihood.*

*Because of ordinary common responses in human nature, we believe that nonviolent methods, in the hands of those who understand them, can be more effective for defense of freedom and justice than any array of weapons and force. To advance this understanding, we commit ourselves to further invention of nonviolence, and active education of ourselves and our children in the use of nonviolent methods in social and political affairs. The future of Earth will depend on those who learn to live together without killing or harming one another.*

*We must also stop destroying the natural physical and biological fabric of Earth that sustains all life. To do this we have to live lightly and simply, consuming less, and nurturing ecological systems to sustain and restore the life patterns of Earth.*

My country is the world, and my religion is to do good.

— Thomas Paine

# Unit 5. Peace on Earth, Peace with Earth

## Videos

*Environmentalists Under Fire* (21 minutes) from Sierra Club and Amnesty International's Human Rights and the Environment Campaign. *www.defendtheearth.org*; 800/213-2650.

- *God's Creation and Global Warming* (14 minutes), NCC/NRPE, (can be borrowed from Quaker
  Earthcare Witness)

## Websites

- The 2001 Quaker Peace Roundtable: Workshop: The Environment and Peace Witness; *<http://quaker.org/qpr/carlyle.htm>*.
- FWCC Peace Conference Workshop Report: "Peaceful Prevention of Deadly Conflict Taking Away the Occasion of War"; *<http://www.friendspeace.org/peace?50@93.zfqEaX11ajn.4@.ee7cc56>*.
- "Peace on Earth, Peace with Earth" pamphlet on web (and ordering information): *<http://www.quakerearthcare.org/ecowitness/peaceearth.html>*.

# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 6

## Applied Simpler Living

by Susan Carlyle

### Purposes of this unit

THIS UNIT is about making changes in our lives. It will present some concrete ways to examine the how and why of making changes that enhance the integrity of our lives and of the world we share with others. We should recognize that all of us are in different places on our personal path to simpler living and that we each have a unique set of life circumstances. We each should think about what simpler living means to us and be mindful of the many factors that influence our daily decisions.

Although all areas of our lives are interwoven, it sometimes helps to ask this question before buying something, making a trip, or becoming involved in another cause: *"Is this the best possible use of my or the world's resources?"*

### Sacred texts and other inspirational readings

*You shall have no other Gods before me.*

—Exodus 20:3

*Do not lay up for yourselves an earthly treasure. Moths and rust destroy; thieves break in and steal. Make it your practice instead to store up heavenly treasure, which neither moths nor rust destroy nor thieves break in and steal. Remember, where your treasure is, there is your heart also.*

—Matthew 6:19–21

*If you seek perfection* [wholeness]*, go, sell your possessions, and give to the poor. You will then have treasure in heaven.*

—Matthew 19:21

*No one can serve two masters; for a slave will either hate the one and love the other, or be devoted to the one and despise the other. You cannot serve God and wealth.*

—Matthew 6:24

I saw that a humble man with the blessing of Providence might live on a little, and that where the heart was set on greatness, success in business did not satisfy the craving, but that in common with the increase of wealth, the desire of wealth increased. There was a care on my mind to so pass my time that nothing might hinder me from the most steady attention to the voice of the True Shepherd.

—John Woolman, *A Plea for the Poor*, 1743

Be patterns, be examples in all countries, places, islands, nations, wherever you come; that your carriage and life may preach among all sorts of people, and to them. Then you will come to walk cheerfully over the world, answering that of God in everyone.

—George Fox

I wish I might emphasize how a life becomes simplified when dominated by faithfulness to a few concerns.

—Thomas Kelly, *A Testament of Devotion*

## Hymns and songs

Teach Me to Stop and Listen. *Worship in Song*, *A Friends Hymnal,* #137.

"What On Earth Are We Doing?"

*What on Earth are we doing today for tomorrow?*
*Where on Earth are we going if we don't find a better way?*
*Every little thing we do really makes a difference.*
*What on Earth are we doing for tomorrow, today?*

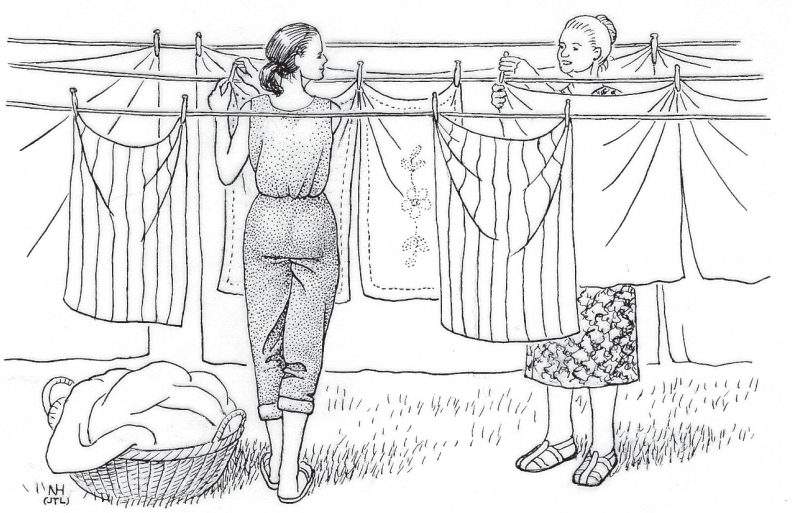
*We have the power to claim the future.*
*We have the knowledge to change our path.*
*We have love enough to move us*
*To a vision that can last.*

*What on Earth are we doing today for tomorrow?*
*Where on Earth are we going if we don't find a better way?*
*Every little thing we do really makes a difference.*
*What on Earth are we doing for tomorrow, today?*

*Today is only a fleeting moment.*
*It will be gone in the blink of an eye.*
*But tomorrow goes on forever,*
*As do the footprints of you and I.*

*What on Earth are we doing today for tomorrow?*
*Where on Earth are we going if we don't find a better way?*
*Every little thing we do really makes a difference.*
*What on Earth are we doing for tomorrow, today?*
*What on Earth are we doing for tomorrow, today?*

—Joyce Johnson Rouse
From the CD "Love Large"
©1995 Rouse House, LLC (ASCAP)
Earth Mama™ Projects
*www.earthmama.org*
615/370-4032



## Issue presentations

BEING A FRIEND for 30 years has given me support for my leading, but the basis of my leading comes from long ago. My parents were role models for fairness, compassion and faith. My college roommate in 1964 was a Quaker who taught me about putting belief into action. A trip to South Africa in 1990 made me re-think how I was to spend my time, money and energy in the future. Over the last 10 years, my husband Kim has been a role model for me by living lightly with ecological integrity. We challenge each other to practice together the Friends testimony on Simplicity.

## Article 1

# Ten Reasons for Choosing a Simpler Life-Style

by Jørgen Lissner

(Reprinted with the author's permission)

TODAY'S GLOBAL REALITIES call for comfortable Christians to review their lifestyles. Guidelines for a simpler style of life cannot be laid down in universal rules; they must be developed by individuals and communities according to their own imagination and situation. The question of lifestyle changes has major importance in a world where justice has to be understood as eco-justice. The ecological peril has become the context in which justice as equitable distribution must be sought.

*[One person can read this introductory paragraph to the group, and then each of the following reasons can be read aloud, going around the circle. Pause between each one for a moment or two. When all have been read, comments and discussion can follow.]*

1. As an act of faith performed for the sake of personal integrity and as an expression of a personal commitment to a more equitable distribution of the world's resources.
2. As an act of self-defense against the mind- and body-polluting effects of overconsumption.
3. As an act of withdrawal from the achievement-neurosis of our high-pressure, materialistic societies.
4. As an act of our solidarity with the majority of humankind, who have no choice about lifestyle.
5. As an act of sharing with others what has been given to us, or of returning what was usurped by us through unjust social and economic structures.
6. As an act of celebration of the riches found in creativity, spirituality, and community with others, rather than in mindless materialism.
7. As an act of provocation (ostentatious under-consumption) to arouse curiosity, leading to dialogue with others about affluence, alienation, poverty, and social injustice.
8. As an act of anticipation of the era when the self-confidence and assertiveness of the underprivileged force new power relationships and new patterns of resource allocation upon us.
9. As an act of advocacy of legislative changes in present patterns of production and consumption, in the direction of a new economic order.
10. As an exercise of purchasing power to redirect production away from the satisfaction of artificially created wants, toward the supplying of goods and services that meet genuine social needs.

THE ADOPTION OF A SIMPLER LIFESTYLE is meaningful and justifiable for any or all of the above reasons alone, regardless of whether it benefits the underprivileged. Demands for "proof of effectiveness" in helping the poor simply bear witness to the myth that "they the poor" are the problem and "we the rich" have the solution.

Here is a list of things that have worked for me. You can try some:

- Embracing silence daily.
- Connecting with nature and the planet.
- Staying home more and being less busy.
- Driving less and advocating for better transportation options.
- Being a non-consumer.
- Spending mindfully and locally.
- Giving stuff away—less to care for or insure.
- Eating food in season, grown locally.
- Unplugging the T.V.
- Installing a clothesline.
- Sharing tools and seeds.
- Using less water.
- Buying energy-efficient appliances.
- Using non-toxic cleaning materials.
- Exploring low-cost leisure, such as hikes and potluck meals.
- Buying in bulk to minimize wasteful packaging.
- Using compact fluorescent bulbs.
- Fixing instead of replacing.
- Examining all holiday practices to see if they are in line with my values.
- Being grateful.
- Getting support from others.

## Article 2

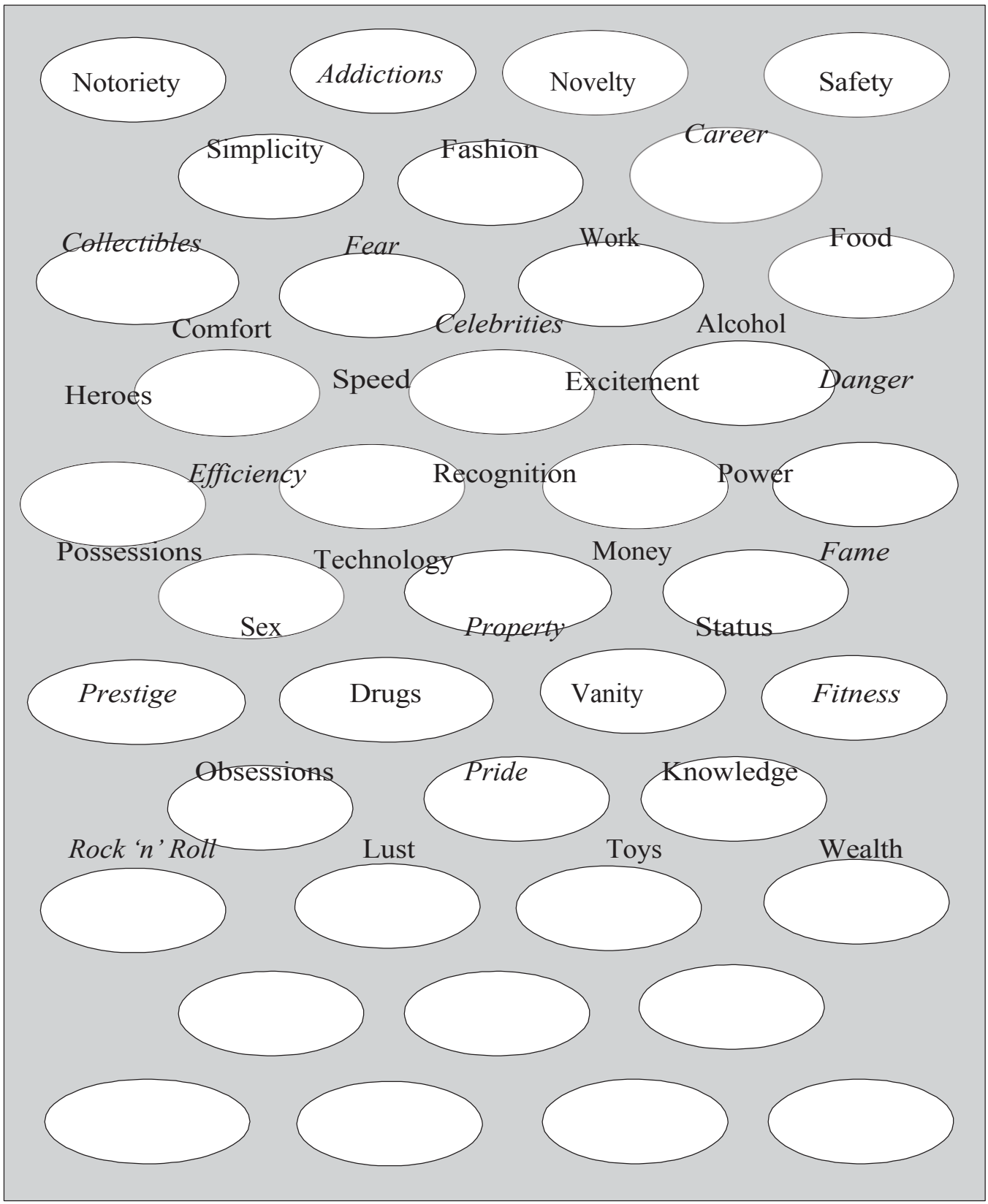
# Patterns and attitudes of simpler living

THERE IS NO "RIGHT" WAY to live more ecologically. Although there is no formula for defining a life of conscious simpler living, there is a general pattern of behaviors and attitudes that is often associated with this approach. Those choosing simpler living tend to:

- Invest time in partners, children, family, volunteering, and civic affairs.
- Work on all of their potential: physical, emotional, mental, spiritual.
- Feel an intimate connection with the earth.
- Have compassion for the world's poor and have concerns for social justice.
- Lower their level of personal consumption.
- Buy things that are durable, repairable, less polluting, and energy efficient.
- Shift their diets from processed foods and meat.
- Reduce clutter and complexity by giving things away.
- Use consumption politically through boycotting.
- Recycle and reduce the need for material resources.
- Pursue right livelihoods.
- Develop skills for self-sufficiency.
- Prefer smaller dwellings and work-places.
- Creatively adapt male-female roles.
- Appreciate silence and non-verbal communication.
- Participate in holistic health care.
- Involve themselves in compassionate causes.
- Adopt more efficient transportation modes.
- Better integrate their inner/outer lives.

## "False gods"—worldly distractions from our spiritual life

"False gods" interfere with our spiritual life: The craving for and attachment to worldly things can lead to injustice and great human suffering. Simpler living enables us to establish proper priorities. Discuss in small groups how we might keep these idols out of our own lives. What other such "false gods" get in your way?



Article 3

# Freeing Ourselves from Possessions

by Tom Small

(Reprinted from "Leadings," Vol. 1, No. 3, October 1994,
*BeFriending Creation* readers sharing their thoughts on spirit-led action)

> Simplicity does not seek the security of things but opens the soul to both the vulnerability and wonder of creation.
>
> —Michael Hechmer, Burlington (Vt.) Friends Meeting

FOR SOME TIME now, my house has been becoming more transparent. I can see across it, sometimes almost through it. There's a little more clarity. More space.

Every few days I walk through it, very slowly. It's a kind of spiritual exercise: I try to see more clearly a few of the things that are in it, without the veil of custom that ordinarily obscures them. I ask them a few nosy questions: What are you? What do you mean? Who do you belong to? Perhaps I move something away, into some other space; then I check a few days later to see how much of a shadow it left behind. Or perhaps the space it occupied has now become clear, transparent.

I discovered that many objects in my house have become accidental. They no longer belong here or to me (perhaps they never did). They are images of a self that I dreamed, a self that never fully emerged from the shadows. Once I know this, I'm free—to give the image away, as a gift for the person it really belongs to: my stepdaughter, my neighbor, the poor person on the street. Or I can exchange it for something I need.

## "Such Stuff as Dreams"

WE DREAM many selves during our lives. We accumulate objects/images which make these selves visible; thereby we gain status. It's difficult, then, to part with the image, even if the self for which it stands has always been only a dream. "We are such stuff as dreams are made on," says Shakespeare's Prospero; and our "stuff" is made from dreams. When the dream, however, becomes only an object filling space, then it stands in our way.

Gifts, too, are embodiments of dream—somebody else's dream of who we are. Perhaps we keep the gift in recognition of the giver and her dream. But the ancients were wiser. For the receiver of a gift to retain it for his own aggrandizement is to invite misfortune. The gift is in the giving, the action, not the thing itself, which must move. Or else lose its identity as *gift*.

An object is static; a relationship grows. Not to change is to falsify and atrophy. And yet the images that we dream or that dream us are so potent that we are charmed by them, transfixed. We are addicted. "All change is a miracle to contemplate," says Thoreau; "but it is a miracle which is taking place every instant." How shall we participate in this miracle? How shall we escape our addictions? Possibly the same way that I stopped smoking some years ago: I changed my image of myself and so changed my behavior. Can we re-imagine our status as depending not on things but on space, open to action and possibility?

What then shall we do with our surplus of images?

## The Art of Transparency

- Try a spiritual journey through your home, just for the exercise. Meditate on your space as an ecosystem, a complex entity that consists entirely in relationships and endures by changing.
- Look past the shadows. Try to see through the object, into the space it displaces. Possibly the walls will seem farther away, clearer, even transparent. Perhaps you will breathe more easily. Perhaps you will be free to act.
- Simplicity is not a noun; it's an active verb.

- ❖ Discover who these things that stand in your way belong to now. The coat that won't fit in the closet: It belongs to the poor. The antique too precious to use: That's for the museum, for everyone. The boxes you never unpacked: straight to the fund-raising rummage sale.

Most times it's not so easy; it takes a shock to make us see. A dozen years ago a visiting Episcopalian abbot, admiring my house, commented on how many "icons" I possessed. Startled to hear them so described, I worried, for a long time, over what he meant. It was a much greater shock when, a few years ago, I returned from travel in Africa to find that my ex-wife had moved out half the contents of the house. I was stunned. I made up lists of things I had to have back. Three weeks later I tore up all the lists—I realized I didn't need any of those things.

Such shocks seem extraordinary, but I think they come to us often: an unexpected word; a sudden change, loss, or separation; a flash of insight. If we open ourselves to its ministry, the shock releases energy, a new possibility. Suddenly we see things in a new light.

What has all this to do with the environment? Everything is environment. Our home. We must find out who it belongs to. Long before we die, we are called on to pass it along to our heirs—even to the seventh generation. ❖

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## Questions for reflection

- ❖ Do any of my interests, important though they may appear, unduly absorb time and energy and interfere with my growth in grace and my service to God?
- ❖ Do I make a place in my daily life for inward retirement and communion with the Divine Spirit? Does my daily schedule need review and revision at this time? To what extent am I trying to make changes?
- ❖ Do I choose those activities that will strengthen me physically, mentally, and spiritually and avoid those which are harmful to me and to others?
- ❖ Am I careful to wait upon the guidance of the Holy Spirit in all my ways? Have I learned to distinguish inspiration from impulse?

## Illustrative activities

### An examination of needs versus wants

WE HAVE NEEDS that are essential to our basic health and survival. We also have needs that help us reach our full human potential. Then we have wants. Make a list of those essential, survival needs. Make a second list of the needs for full human potential. Then begin a list of wants. Ask the following questions of the wants:

—How will I feel when I get it?
—What are its costs in terms of time and finances?
—Is there a "greener" alternative?

### General queries

How do these needs and wants affect the environment? My relationship to others? My spiritual life?

### Consumption audit

THIS IS AN EXERCISE that can be done by individuals or by groups. It is a method of looking at our use of resources. It looks at where the resources come from, how they are used, and then how they are disposed of. All the products and services we use have costs other than dollars. It is a sort of "before, during, and after" look at the things that we use in all phases of our lives. The form can be used to examine an individual household or a meetinghouse, or a school or workplace. This is a "free form" form. Use the blank spaces to make notes, enter dollar amounts, kilowatt-hours, miles driven, miles per gallon, quantities, etc. Add more items as needed.

| Consumption Audit | | | |
|---|---|---|---|
| **Item** | **Before:** When and how was it made? How much energy was used? How did it get to you? What are the alternatives? | **During:** What is your daily usage? Monthly? Yearly? Can you get by with less? What are the effects of its use? | **After:** Where and how is it disposed of at the end of its useful life? How much energy is used? What are the effects on future generations? |
| **Food and drink** | | | |
| produce | | | |
| meat | | | |
| fish | | | |
| processed food | | | |
| beverages | | | |
| packaging | | | |
| **Paper products** | | | |
| stationery | | | |
| toilet paper & towels | | | |
| periodicals & books | | | |
| junk mail | | | |
| diapers | | | |
| copy & computer | | | |
| **Ongoing** | | | |
| cleaning products | | | |
| lawn & garden | | | |
| other | | | |
| **Personal** | | | |
| clothing & shoes | | | |
| cosmetics | | | |
| other | | | |
| **Energy & utilities** | | | |
| water | | | |
| electricity | | | |
| propane/natural gas | | | |
| gasoline--home | | | |
| gasoline--auto | | | |
| other | | | |
| **Appliances/furnishings** | | | |
| kitchen | | | |
| laundry room | | | |
| garage/workshop | | | |
| recreational | | | |
| other | | | |
| **Transport & travel** | | | |
| automobile | | | |
| local transit | | | |
| airplane | | | |

Applied Simpler Living

# Steps that I can take to move toward simpler living

(Try making one change each month.)

| | Right away | Within six months |
|---|---|---|
| 1. Home | | |
| 2. Food | | |
| 3. Time/money/work | | |
| 4. Transportation/ recreation | | |
| 5. Institutions | | |
| 6. Disconnecting from the consumer culture | | |
| 7. Habits that conserve natural resources | | |
| 8. Becoming self-reliant and community-oriented | | |
| 9. Buying habits and possessions | | |
| 10. Enlisting the understanding/ cooperation of family members and friends | | |

## Prayers and responsive readings

God, it is so difficult not to worry.
Help me to trust in you and to seek your Kingdom first.
Help me seek the ways that I might respond to your call in my life.
Help me to know that "enough is enough and balance is best."
Help me to not fear change.
Grant me stillness, turn me from frantic striving, and calm me.

The Lord is my shepherd, I shall not want.
He makes me lie down in green pastures;
He leads me beside still waters; he restores my soul.
He leads me in right paths for his name's sake.
Even though I walk through the darkest valley,
I fear no evil;
For you are with me;
Your rod and your staff—they comfort me.
You prepare a table before me in the presence of my enemies;
You anoint my head with oil; my cup overflows.
Surely goodness and mercy shall follow me all the days of my life,
And I shall dwell in the house of the Lord my whole life long.

—Psalm 23

# Unit 6. Applied Simpler Living

*50 Simple Things You Can Do To Save The Earth.*. 1989. The Earth Works Group, Earthworks Press, Berkeley, Calif.

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Dominguez, Joe and Vicki Robin. 1993. *Your Money or Your Life: Transforming Your Relationship With Money and Achieving Financial Independence*. Penguin Group, New York.

Durning, Alan. 1999. *How Much is Enough? The Consumer Society and the Future of the Earth* The Worldwatch Environmental Alert Series, WW Norton & Co., New York.

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## Websites

- Center for a New American Dream, <*http://www.cnad.org*>.

# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 7

## Healthy Food, Healthy Planet

by Molly Anderson

### Purposes of this unit

1. To celebrate ecosystem integrity as the expression of Spirit in nature.
2. To consider the inseparability of traditional Quaker testimonies and ecosystem integrity and highlight the importance of food choices in creating ecosystem health.
3. To seek greater congruence between Quaker values and food choices.

### Sacred texts and other inspirational readings

*Go and ask the cattle, ask the beasts of the air to inform you, or tell the creatures that crawl to teach you, and the fishes of the sea to give you instruction. Who cannot learn from all these that the Lord's own hand has done this? In God's hand are the souls of all that live, the spirits of all human kind. Wisdom and might are his, with him are firmness and understanding. If he pulls down, there is no rebuilding; if he imprisons, there is no release. If he holds up the waters, there is drought; if he lets them go, they turn the land upside down. Strength and success belong to him, deceived and deceiver are his to use.*

—Job 12:7–16

*When you reap the harvest in your field and forget a swathe, do not go back to pick it up; it shall be left for the alien, the orphan, and the widow, in order that the Lord your God may bless you in all that you undertake. When you beat your olive trees, do not strip them afterwards; what is left shall be for the alien, the orphan, and the widow. When you gather the grapes from your vineyard, do not glean afterwards; what is left shall be for the alien, the orphan, and the widow. Remember that you were slaves in Egypt; that is why I command you to do this.*

—Deuteronomy 24:19–21

*My brothers, what use is it for a man to say he has faith when he does nothing to show it? Can that faith save him? Suppose a brother or a sister is in rags with not enough food for the day, and one of you says, Good luck to you, keep yourselves warm, and have plenty to eat, but does nothing to supply their bodily needs, what is the good of that? So with faith; if it does not lead to action, it is in itself a lifeless thing.*

—James 2:14–17

### Hymns and songs

All Beautiful the March of Days. *Worship in Song, A Friends Hymnal,* #39.
Now is the Cool of the Day. *Worship in Song, A Friends Hymnal,* #308.

## Issue presentations

### Article 1

# Quaker testimonies, ecosystem health, and food

ONE OF THE MOST NOTEWORTHY characteristics of the Religious Society of Friends is the courage and consistency with which Friends have sought how to act with integrity in various aspects of their lives, even when this action placed them at odds with contemporary social mores or laws. Inspired by their reading and interpretation of the words of Jesus, of George Fox, and of later Friends, Quakers have refused to bear arms or defer to secular authorities. They adopted habits of dress, speech, and daily business that set them apart from their society.

What we recognize as testimonies at the core of Quaker faith and practice crystallized from individual and corporate leadings toward greater integrity with New Testament teachings.

The origin of the word "integrity" is Latin *integritas*, meaning "wholeness" or "completeness." The testimonies thus can be seen as guideposts toward a more seamless unity within our own lives and between our lives and the Spirit working in the world. Testimonies that have been important to Quakers through the centuries—peace and nonviolence, equality, simplicity, honesty—arose from the particular circumstances and contradictions of the social setting of early Friends. The *peace* testimony was (and is) a response to an aggressive national power that conscripted young men into serving its aims of dominating other countries. The *equality* testimony arose in a hierarchical society that did not recognize human rights of women and people of color. The *honesty* testimony arose during a period of rapidly increasing population, where business transactions were carried out more and more frequently between strangers, who were not necessarily bound by obligations of fairness that kinship or sustained social interaction tend to foster. The *simplicity* testimony arose in the context of early capitalism, in a colonial nation using its military strength to seize other nations' resources. Expensive clothing, sprawling estates, and ornate material goods were outward manifestations of financial success, clearly distinguishing the person who could appropriate the products of other people's labor from those who struggled to gain basic necessities for themselves and their families.

## Quaker Testimonies today

THESE TESTIMONIES continue to evolve. The recognition of "that of God" in each person that led early Quakers to oppose slavery and to support women's right to vote now leads Friends to fight more subtle forms of racism and discrimination. Peacemaking has become even harder in a world of continuous war, when the United States has a "defense" budget larger than the combined military expenditures of Russia, China, Iran, Iraq, and North Korea, as well as its European allies. Simplicity has become more complex in a society that virtually requires the acquisition and use of sophisticated technology—automobiles, computers, cell phones, fax machines—to earn income. Securing life's necessities, such as food, water, shelter, and healthcare, requires that we participate in an economic system propped up by overconsumption of material goods. The negative effects of overconsumption are obvious in the disproportionate use of resources by the United States and the vast amount of waste generated. With less than 5 percent of the world's population, the United States uses more than a fourth of its nonrenewable resources—26 percent of the oil, 25 percent of the coal, and 27 percent of the natural gas. The lack of proportion in consumption is apparent at the personal level, in the growing worldwide incidence of obesity and related diseases.

*There is a clash between humans and the natural world to which we belong and which feeds and nurtures us.*

What does the search for greater integrity and wholeness in our lives require of us today? We are becoming more aware of the devastating impacts of human actions on the biosphere, that interdependent web of living creatures and natural systems that sustains a healthy, livable world. We have clear evidence that human actions are warming the earth, causing massive species extinctions, and disrupting global cycles of nitrogen through plants, animals, water, and soil. Humans have appropriated more and more of the natural world for our own use, trans-

forming it so that other creatures cannot survive. We have slaughtered other species, encroached on their habitat, and contaminated the air, water, and soil that they need. The result is a clash between humans and the natural world to which we belong and which feeds and nurtures us.

Humans seem bent on destroying the health of the entire planet, even though that will destroy our species as well. This gaping lack of integrity between human actions and planetary health calls for a testimony that weaves together many of the earlier Quaker testimonies. How can we possibly live with integrity on a planet that we have sickened almost to death? If "that of God" exists in all of God's creation, then protection of ecosystem health and integrity moves from being "merely" a matter of human survival to a core moral obligation of our time.

*How can we possibly live with integrity on a planet that we have sickened almost to death?*

## The centrality of our food choices

THE CHOICES WE MAKE about food are among the most significant ways that we affect planetary health, in addition to more obvious consequences on individual health. This is true in part because food production, processing, and distribution use so much of the available land and water on the planet. About 26 percent of the total land area is given over to croplands and managed pastures. The amounts of freshwater used in agriculture vary from region to region, but worldwide 71 percent of available freshwater is devoted to food production. The planetary impacts of food supply are exacerbated by the particular choices that societies have made about the interconnected technologies and processes by which food travels from seed to plate, and by rapid population growth, which ratchets up the pressure to exploit ecosystems. Our current food system has a devastating toll on land, water, air, oceans, and other species. Given the globalization of both food supply and its environmental impacts, we can legitimately call it a single global food system.

- Soil erosion continues to remove precious fertile topsoil that took millennia to form. In northwestern China, overgrazing by sheep and goats has created a Dust Bowl much more severe than the U.S. Dust Bowl that forced about 2.5 million people off their land in the 1930s. Although China is the most urgent looming crisis, soil loss continues in the U.S. as well: 1.9 billion tons of topsoil were lost to wind and water erosion in 1997.
- At least 75 percent of the world's commercially valuable fish species are fully exploited or overexploited. Ten percent of fish stocks have become significantly depleted to the extent that they are far less productive.
- Agricultural pollution—mainly nutrients and sediment—is the leading cause of water quality damage in U.S. lakes, streams, and rivers. Rivers and underground aquifers in some of the most heavily used agricultural regions are drying up because more water is being removed than returned. The Colorado River seldom reaches the Pacific Ocean now, and recently the Rio Grande has been drying up. The Ogallala Aquifer under the Great Plains is over-pumped: the U.S. Department of Agriculture reports that the underground water table has dropped more than 100 feet under parts of Texas, Oklahoma, and Kansas.
- The food system uses fossil fuels at every step, producing gases that contribute to global warming. Methane, one of the worst greenhouse gases, is a by-product of rice and livestock production.
- Conversion of forested land and grassland to cropland and managed pastures has been the biggest contribution to the wave of species extinctions the earth has experienced. Agriculture has displaced one-third of temperate and tropical forests and one-quarter of natural grasslands.

## The toll on humans



THE DAMAGE CAUSED by the food system extends to humans too. Farmers and farm-workers have higher rates of diseases such as non-Hodgkin's lymphoma, which is associated with exposure to pesticides. Meatpacking is the most dangerous occupation, and agriculture generally is more dangerous than any other group of occupations except mining. Farmworkers frequently have substandard housing and poor working conditions. Farmworkers do not even enjoy the same legal rights as workers in other occupations. For example, farm work does not have a legal minimum wage or a requirement that overtime hours receive overtime pay. Farmworkers and low-wage workers in the food industry frequently are prohibited from forming unions. No wonder that more than half of all farmworkers live below the poverty threshold for a family of four.

The global food system is not even feeding the entire population adequately. In 2001, 33.6 million people in the U.S.—including 12.7 million children—lived in food-insecure households. Of these, 6.1 million adults and 3 million children lived in households where someone experienced hunger during the year because of food insecurity. People in poor countries are faring much worse: More than 840 million people in the world are malnourished, and more than 153 million of these are under the age of five. Six million children die of hunger each year. Yet more than enough food is produced each year to feed everyone an adequate diet. Most countries have the potential to feed their own populations (although water shortages due to over-pumping and droughts due to global warming are pushing many countries closer to being net importers of food).

Contrary to the widely held belief that its farmers feed the world, the United States imports food from many countries that cannot feed their own people enough. Unfair agriculture and trade policies are partly to blame for the gross inequities in the food system. Wealthy industrialized countries, especially the U.S., the European Union, and Japan, demand that poor countries remove barriers to importing manufactured goods, while refusing to allow reciprocal free access of agricultural products from other countries. For example, in 2001, when the availability of Vietnamese catfish in U.S. markets began to drive down prices, the U.S Senate approved a last-minute amendment by Southern senators to the agricultural appropriations bill, prohibiting the U.S. Food and Drug Administration (FDA) from allowing imported fish to be labeled "catfish" unless it comes from the North American catfish family. There are at least 2,500 species of catfish, and the Vietnamese were exporting two of these other species.

Agricultural subsidies in the U.S. consistently favor the largest farms and international corporations that trade grain, feed, and meat. By paying farmers to overproduce crops such as corn, soybeans, and cotton, the U.S. government encourages world market prices to fall. Only the largest farmers receive enough from subsidies to survive these rock-bottom prices. Surplus crops are "dumped" in developing countries at prices below the cost of local production and erode demand for locally produced food. Thus U.S. policies not only support the concentration of land and food power in this country, they are pushing small farmers out of business around the world.

## What can Friends do?

HOW CAN WE AS FRIENDS live within the constraints that nature imposes and learn to share the planet with its other inhabitants, while providing food for all? The problems in our food system are deep-rooted and far-reaching. Fixing them will require a fundamental reorientation

in the purposes and values that this system expresses. The concepts of food rights and food sovereignty are good starting places for thinking about systemic changes. The right to food is supported by several international agreements, including the 1948 United Nations Declaration on Human Rights and its 1966 extension in the International Covenant on Economic, Social, and Cultural Rights. Rights to food and water are considered as basic in some places as civil and political rights. In fact, civil and political rights can be exercised only if people have enough food, water, and other necessities of subsistence.

"Food sovereignty" includes not just access to food but control over a country's food system. A food-sovereign nation could refuse to comply with international trade policies that harm food security, and the people living in that country would be able to make democratic decisions about the ways their food was produced, labeled and marketed. The Final Declaration of the World Forum on Food Sovereignty (held in Havana, Cuba, in 2001) defines food sovereignty as:

> *"the right of peoples to define their own food and agriculture; to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives; to determine the extent to which they want to be self-reliant; [and] to restrict the dumping of products in their markets....Food sovereignty does not negate trade, but rather, it promotes the formulation of trade policies and practices that serve the rights of peoples to safe, healthy, and ecologically sustainable production."*

In the U.S., food is not perceived and treated as a right but as a commodity for sale to those who have sufficient money. The food programs sponsored by the U.S. Department of Agriculture, such as food stamps and the Women, Infants, and Children (WIC) program, are based in a charity framework rather than on human rights. These programs dole out food, or coupons that can be exchanged for food, to people who have proved that they are poor yet "deserving" under state or federal standards. Compare this to the framework we use for civil and political rights: Imagine a person being told she can vote only if she can pay for the privilege, or prove that she is too poor to pay. Imagine a person who is being mugged and beaten knowing that he will receive police protection only if he can pay for it. Imagine if the right to free speech applied only to people who can buy up TV stations or newspaper companies, and control what employees say and write.

*Rights to food and water are considered as basic in some places as civil and political rights.*

Civil and political rights are not always enacted fairly, and the U.S. court system continues to define what each right entails. However, public opinion in this country supports these rights in concept, and we react with outrage when they are violated. Examining food as a basic right, similar to the civil and political rights recognized in the U.S., could help us to see a path toward a food system with greater integrity that will protect and actually enhance ecosystem health.

## Article 2

## Congruence between Quaker values and food choices

REFLECTIONS on Friends testimonies have led many Meetings to actively protect the integrity of Earth's ecosystems. For some Friends, the leading to resist the violent destruction of the natural world and other species is as powerful as resisting violence against other humans, and has assumed the same weight as earlier Friends' resistance to slavery. Even modest changes in food choices can lead to significant improvements in the environmental and social impacts of agriculture and fisheries.

A recent book from the Union of Concerned Scientists, *The Consumer's Guide to Effective Environmental Choices,* attempted with careful research and documentation to show which actions can significantly affect one's environmental impacts and which are relatively trivial. Food ranks second only to transportation as a source of environmental problems, mainly because of habitat conversion, water use, and pollution due to cultivation. Meat and poultry production are more harmful than fruits, vegetables, and grains. Mathis Wackernagel at Redefining Progress and a team of other researchers published a paper around the same time

showing that human use of the natural environment has been exceeding its regenerative capacity since the 1980s. Wackernagel is one of the creators of the "ecological footprint" concept, the area required for the production of food and other goods and the absorption of waste.

## Your food ecological footprint

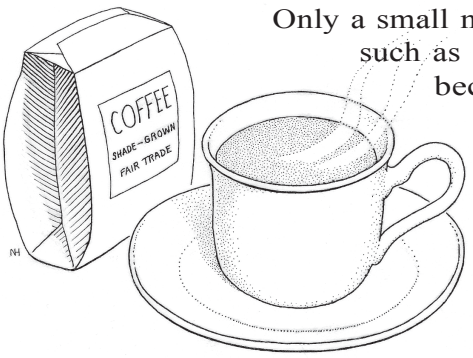
YOU CAN REDUCE your ecological footprint in many ways. Some of the food options are:

- Eat lower on the food chain: more vegetables, fruits, and grains and less meat.
- Reduce "food miles," the distance that food travels to reach your home. By choosing food grown close to home, or growing it yourself, you not only eliminate the cost of transporting it but the costs of packaging and cooling it to survive its long trip. FoodRoutes is a national organization formed to help people find sources of local food and better under- stand its advantages *(http://www.foodroutes.org/buylocal.jsp)*.
- Buy foods raised by farmers who try to mimic natural methods of achieving soil fertility and pest control. The simplest way to do this is to purchase food that is certified organic. However, the environmental costs of shipping certified organic food from the other side of the country or halfway around the world outweigh the benefits to the environment. It is better to look for foods raised in your region, grown organically or with Integrated Pest Management to reduce synthetic pesticide use, or grown with "natural" methods.
- Eat less! Overconsumption and obesity are more prevalent in the U.S. than food insecurity. While they are complex problems aggravated by advertising and availability of junk food, you do have considerable control over what you eat. Eating out less and eating fewer processed foods allows you to more easily keep track of how much you are eating and its nutritional value.

## Fair trading

IT IS VITAL THAT Friends go beyond individual actions and changes in shopping habits, to build a more just food system. As Friends, we are concerned with social justice as well as eco-system integrity and health. Fortunately, it is possible to make food choices that are good for other people as well as being good for the planet. One way to do this is by looking for "fair-trade" products, certified to give producers a decent wage.

- Buy fair-trade products. Equal Exchange Interfaith Program describes the benefits of fair-trade coffee, tea, and cocoa and allows direct ordering from its online store: *http://* <*http://www/equalexchange.org/interfaith*>.



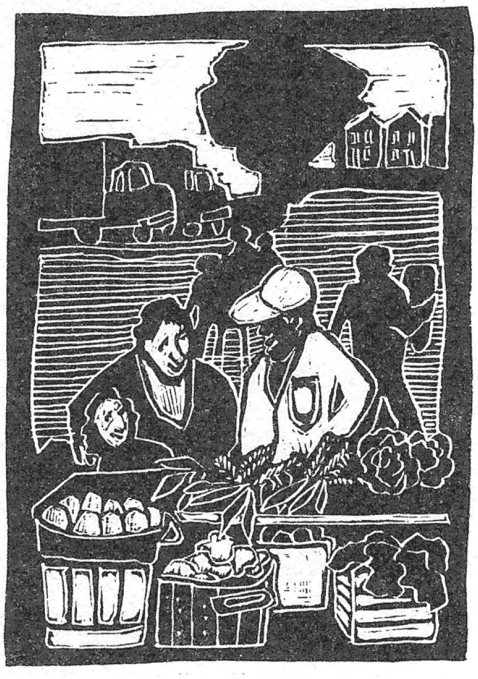

Only a small number of food products prominent in international trade—such as coffee, tea, and chocolate—are fair-trade certified at present, because the primary impetus for developing fair-trade standards has been to alleviate poverty and labor exploitation that are part of the international agricultural trading system. For instance, the price of coffee on the international market fell between 2000 and 2003 to a 30-year low, threatening the livelihoods of 25 million coffee producers around the world. This is not due to some miraculous technological breakthrough that allows farmers to produce coffee much more cheaply. It is because farmers in developing countries, mostly poor smallholders, now sell their coffee beans for much less than they cost to produce, while middlemen who buy, roast, package, and sell the beans are making higher profits. With full globalization of markets and the consolidation of companies that trade foods, buyers can force down world prices. Frequently this means buying from countries that are in economic crisis or political upheaval and lack standards on fair wages and safe working conditions—including prohibitions on child labor and slavery—for those who work in the fields. The top suppliers of coffee in the world in 2000–2001 were Brazil, Vietnam, and Colombia. For cocoa, the top suppliers were Ivory Coast, Ghana, and Indonesia. In 2002, while news stories about the prevalence of child slavery in the cocoa industry were breaking, Nestlé S.A. had the

highest revenue (over $57 billion) of all worldwide food and beverage companies and was the 85th largest economic entity in the world, just below New Zealand. Fair-trade certification is the best possible guarantee that goods are produced without exploitation.

## Community-supported agriculture

OUR FOOD DOLLARS CAN HELP to support a more just food system within the U.S. too. Community-supported agriculture (CSA) is an increasingly popular option, in which customers buy "shares" in a farm's production before the growing season begins.

- Join a CSA (check for possibilities in your geographic region through a national database maintained by the Alternative Farming and Sustainability Information Center, the Robyn van En Center for CSA Resources, the U.S. Department of Agriculture's Sustainable Agriculture Network, and others *http://www.nal.usda.gov/afsic/csa/csastate.htm)*.
- Buy directly from local farmers at farmstands and farmers' markets.
- For products that aren't available locally, check online for family farmers who can sell them directly to you through the Supermarket Coop *(http://www.ruralcoalition.org)*.



Each CSA operates a bit differently, but the most common pattern is for shareholders to receive a box of fresh produce each week during the growing season. This system allows customers to share some of the risks and unpredictability of farming while also developing a relationship with a local farmer and learning how to eat more seasonally. Buying directly from farmers, at farmers' markets or farmstands, lets them keep all of the gross returns instead of whatever is left after middlemen take their cuts. Rural Coalition has started an online Supermarket Project that lets customers buy straight from family farmers, even if they don't live close by.

## Responsible investing

- Invest in socially and environmentally responsible food businesses, and participate in shareholder resolutions to improve company policies.

Socially responsible investment (SRI) is another way to support fair business practices in the food industry. Food and agriculture are huge industries, and several companies offer stock options. After petroleum, coffee is the world's next most heavily traded commodity. A financial consultant who specializes in SRI can steer Friends with money to invest toward businesses that have superior environmental, labor, and corporate governance records and policies, and toward Community Investment Notes that allow micro-loans to local businesses. Friends who decide for any reason to keep stock in a company with a poor environmental or labor record can vote in shareholder resolutions to change that company's policies.

## Questions for reflection

After reading at least one of the selections above, reflect on the following questions:

- Do I act in the assurance that food and drinking water are rights? How do I protect this right for others? How do I respond when I see a violation of these rights?
- Do I respect life and treat it with reverence?
- Who grew and prepared my food? Did others suffer so that I could eat? How can I remove suffering from my own food chain?

## Illustrative activities

1. If consideration of food system problems is new to your group, you might want to learn more about the specific mechanisms by which we are hurting biodiversity, the natural environment, and other countries by our food choices. You can begin with information available online and in print from some of the sources listed in Appendix B. Several faith communities have published statements or study guides about food. One of the best is *Food and Faith,* a 2002 reader edited by Michael Schut about the environmental, ethical, and social impacts of food choices and what can be done. Another good compilation that offers food for thought is the *Fatal Harvest Reader* (Kimbrell 2002).

2. Share within your group various ways that individuals have changed their eating habits, as they have attempted to be more environmentally and socially responsible. In addition to sharing specific actions, talk about barriers that have been encountered, such as short growing seasons that restrict access to local fresh fruits and vegetables; lack of markets that carry locally produced, fair-trade, and organically grown foods; or time pressures that make cooking from scratch more difficult.

3. Think about ways that your individual actions can be linked to build strong, viable alternatives to exploitative food systems. Play the *Community-based Food Game* (see below) to open up discussion of some of these alternatives. How might a Meeting help to support its own members as they try to make food choices with greater integrity, and create a locus within a neighborhood or community for healthier food-system alternatives? Examples might include starting a study circle on food and environment, sponsoring a farmers' market on Meeting grounds, "adopting" a local farm that wants to use the community-supported agriculture model, buying fair-trade coffee and tea for Meeting fellowship events, and supporting local organizations that provide nutritious food to homeless people and low-income children and parents.

4. Use the *Community-based Food System* game. For a free copy contact Molly Anderson at *mollydelcarmen@hotmail.com*.

5. Play *What Does the World Eat?* Purpose: Understand the vast difference in food availability and diet among different countries in the world, and appreciate the special qualities of the foods used by different cultures. Instructions: From a world map, have each per- son in your group pick one developing country and include as many continents as possible among the group. Ask each person to investigate what people in that country eat, and supplement this with data on the extent of malnutrition among adults and children in that country. This data is available online from the Food & Agriculture Organization of the United Nations: *http://www.fao.org/docrep/005/y7352e/y7352e07.htm#.* Plan a meal for the group in which each person prepares a typical food from his/her selected country.

6. Play *How Did Your Food Get to You?* Purpose: Understand the multiple stages of the U.S. food system. Instructions: Divide the group into two parts, each with access to a large sheet of newsprint or a blackboard/whiteboard. Select a breakfast food item, such as oats or milk or bacon. In each group, one person will draw and the rest of the people will be coaches. Draw the different places that this food item might have gone through on its way from field to table. Include producers, truckers, processors, distributors, wholesalers, retailers, and waste handlers. Discuss the positive and negative aspects of this complex system.

## Prayers and responsive readings

### U.N. Environmental Sabbath

How wonderful, O Lord,
are the works of your hands!
The heavens declare Your glory,
the arch of sky displays Your handiwork.
The heavens declare the glory of God.
In Your love You have given us the power
to behold the beauty of Your world, robed
in all its splendor.
The sun and the stars,
the valleys and hills,
the rivers and lakes
all disclose Your presence.
The Earth reveals God's eternal presence.
The roaring breakers of the sea
tell of your awesome might
the beasts of the field
and the birds of the air
bespeak Your wondrous will.
Life comes forth by God's creative will.
In Your Goodness You have made us able to hear
the music of the world.
The raging of the winds,
the whispering of trees in the wood,
and the precious voices of loved ones
reveal to us that You are in our midst.
A divine voice sings through all creation.

—U.N. Environmental Program

### God's Grandeur

The world is charged with the grandeur of God.
It will flame out, like shining from shook foil;
It gathers to a greatness, like the ooze of oil
Crushed. Why do men then now not reck his rod?
Generations have trod, have trod, have trod;
And all is seared with trade; bleared, smeared with toil;
And wears man's smudge and shares man's smell: the soil
Is bare now, nor can foot feel, being shod.

And, for all this, nature is never spent.
There lives the dearest freshness deep down things;
And though the last lights off the black West went
Oh, morning, at the brown brink eastward, springs—
Because the Holy Ghost over the bent
World broods with warm breast and with ah! bright wings.

—Gerard Manley Hopkins

# We Are the Earth

We are the earth.

Earth is stardust-come-to-life, a magic cauldron where the heart of the universe is being formed. In me, the Earth and its creatures find their voices. Through my eyes the stars look back on themselves in wonder.

I am the earth. This is my body.

We are the air.

Air is the breath of the Earth, the movement of life, the quick, violent storm, and the slow, caressing breeze. In my breathing, life is received and given back. My breath unites me to all things, the creatures that make the oxygen, and to the people that share the same breath: yesterday a victim of AIDS; today a soldier in the Middle East; tomorrow, a poor woman in the Third World.

I am air. This is my breath.

We are fire.

Fire is the energy of the universe, the source of power and new life. In my thoughts burn the fires of the original eruption of life; in my emotions, lightning flashes; in my love, new life is conceived. I participate in power. I share in the energy of the universe, to keep warm, to fuel my body, to create my relationships.

I am fire. This is my power.

We are water.

Water is the womb of the Earth, from which all life is born. The oceans flow through the Earth, bringing abundance; the oceans flow through me, carrying food, recycling waste, expressing emotions.

I am water. This is my life.

—Daniel Martin, Director
International Communities for the Renewal of the Earth

## Unit 7. Healthy Food, Healthy Planet

Brower, Michael and Warren Leon. 1999. *The Consumer's Guide to Effective Environmental Choices.*
Three Rivers Press, New York.

Brown, Lester R. 2003. *Plan B. Rescuing a Planet under Stress and a Civilization in Trouble.* W.W. Norton & Company, New York.

Kimbrell, Andrew, ed. 2002. *The Fatal Harvest Reader. The Tragedy of Industrial Agriculture.* Foundation for Deep Ecology and Island Press, Washington, D.C.

Schut, Michael, ed. 2002. *Food and Faith: Justice, Joy and Daily Bread.* Living the Good News, Denver.

## Periodicals

- *Alternatives, <http://www.alternativesmagazine.com>.*
- *Creation Care* (Environmental Evangelical Network), *<http://www.creationcare.org/magazine/>.*
- *EarthLight <http://www.earthlight.org>.*
- *New Internationalist, <http://www.newint.org>.*
- *Yes! A Journal of Positive Futures, <http://www.yesmagazine.org>.*
- *World Watch* Magazine, *<http://www.worldwatch.org>.*

## Ecumenical organizations

- Bread for the World is a nationwide Christian citizens movement seeking justice for the world's hungry people by lobbying our nation's decision makers. 50 F St., NW, Suite 500, Washington DC 20001; 202/639-9400; 800-82-BREAD; *<http://www.bread.org>.*
- Earth Ministry helps connect Christian faith with care and justice for all creation. Their work
  engages individuals and congregations in knowing God more fully through deepening relationships with all God's creation. They believe that through this experience both personal lives and cultures can be transformed. These transformations include discovering a worldview that sees creation as a revelation of God, practicing simplified living and environ- mental stewardship, and seeking justice for all God's creation. 6512 23rd Ave., NW Suite 317, Seattle WA 98117; 206/632-2426; *<http://www.earthministry.org>.*
- National Farm Worker Ministry is an interfaith organization that supports farm workers as
  they organize for empowerment, justice, and equality. Member organizations include nearly 40 national, state and local religious bodies. Their website lists Action Alerts, disaster response, news and resources. 438 N. Skinker Blvd., St. Louis MO 63130; 314/726-6470; *http://nfwm.org.*
- The National Religious Partnership for the Environment is a formal alliance of major faith
  groups and denominations across the spectrum of Jewish and Christian communities and organizations in the United States. Its four founding partners are the U.S. Catholic Confer- ence, National Council of Churches of Christ, Coalition on the Environment and Jewish Life, and Evangelical Environmental Network. The Partnership integrates care for God's creation throughout religious life: theology, worship, social teaching, education, congregational life, and public policy initiatives. 49 South Pleasant St., Suite 301, Amherst MA 01002; 413/253- 1515; *<http://www.nrpe.org>.*
- Presbyterian Hunger Project of the Presbyterian Church (USA) has a great website as part of
  its "Food and Faith" Program, with lots of information and links to other organizations;

*http://www.pcusa.org/pcusa/wmd/hunger/food/why*>.

- Web of Creation is a website with good information, including a page entitled "Sustainable Diet," with helpful book and Internet resources; <*http://www.webofcreation.org*>.

## Additional (secular) Fair Trade resources

- Oxfam America's *Make Trade Fair* global campaign includes information and links about unfair global trade policies and how fair trade can be strengthened. The Advocacy/Campaigns section of its website also links to resources about how to contribute to a better U.S. food system; <http://*www.oxfamamerica.org/advocacy/art308.html*>.
- TransFair USA is the only independent, third-party certifier of Fair Trade practices in the

United States. Through regular visits to Fair Trade farmer cooperatives conducted by

Fairtrade Labeling Organizations International (FLO), and partnerships with US companies, TransFair verifies that the farmers who produced Fair Trade Certified products were paid a fair price; <*http://www.transfairusa.org*>.

## Other resources


- Food and Agriculture Organization (UN), <*http://www.fao.org/*>. Source of information on the status of fisheries in the 2002 State of World Fisheries and Aquaculture (SOFIA) report and on international trade in food.
- Food and Agricultural Service, U.S. Department of Agriculture, <*http://www.fas.usda.gov/ustrade*>. Source of information on international trade of commodities.
- Global Policy Forum, <*http://www.globalpolicy.org/socecon/index.htm*>. Source of information on the catfish labeling dispute.
- Mock, Gregory. 2000. Domesticating the World: Conversion of Natural Ecosystems. In: *World Resources* 2000–2001. Available at <*http://www.wri.org/*>. Source of information on the percentage of forest and grassland converted to agricultural use.
- U.S. Conference of Catholic Bishops. November, 2003. *For I Was Hungry and You Gave Me*

*Food* (Mt 25:35). Catholic Reflections on Food, Farmers and Farmworkers, <*http://www.usccb.org/bishops/agricultural.htm*>.

# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 8

## Earthcare and the Right Use of Things

by Louis Cox

### Purposes of this unit

1. To call attention to the significant ecological impacts of North Americans' lifestyles, particularly our choices in transportation and housing.
2. To identify those short-range and long-range steps that Friends in different life circumstances can begin taking now to reduce their "ecological footprints" in meeting their transportation and housing needs.
3. To focus on current trends in energy use that call into question the long-term sustainability of our society's materialistic orientation.
4. To examine our dilemmas regarding these and other lifestyle choices in light of Quaker principles and values.

### Sacred texts and other inspirational readings

*And everyone who hears these words of mine and does not act on them will be like a foolish man who built his house on sand. The rain fell, and the floods came, and the winds blew and beat against the house, and it fell—and great was its fall!*

—Matthew 7:26–27

Do I, in all my proceedings, keep to that use of things which is agreeable to universal righteousness?

—John Woolman (1720–1772)

May we look upon our treasures, the furniture of our houses, and our garments, and try whether the seeds of war have nourishment in these our possessions. Holding treasures in the self-pleasing spirit is a strong plant, the fruit whereof ripens fast. A day of outward distress is coming, and Divine love calls to prepare against it.

—John Woolman, *A Plea for the Poor,* p. 241

It would go a great way to caution and direct people in their use of the World, that they were better studied and known in the Creation of it. For how could Man find the Confidence to abuse it, while they should see the Great Creator stare them in the Face, in all and every Part thereof?

—William Penn (1644–1718)

...Two roads diverged in a wood, and I—
I took the one less traveled by,
And that has made all the difference.

—Robert Frost

from "The Road Not Taken," *Mountain Interval,* 1920

### Hymns and songs

Love Was the First Motion. *Worship in Song, A Friends Hymnal,* #219.
Simple Gifts, *Worship in Song. A Friends Hymnal,* #271.
Within the Shelter of Our Walls. *Worship in Song*, *A Friends Hymnal,* #274.
Vine and Fig Tree, *Worship in Song. A Friends Hymnal,* #300.

## Issue presentations

### Article 1

# Visualizing the Better World That Is Possible

by Louis Cox

WHILE CASTING ABOUT for ways to introduce this article about changing wasteful lifestyles, an old movie broke to the surface: *A New Leaf* (1971, ★★½) is about a middle-aged playboy (Walter Matthau) who has recklessly squandered his inheritance on high living. The crisis erupts early in the film, when the spendthrift's accountant tries to explain to him that, after years of warnings, he has just drawn down the last of his invested funds. *As before, the over-indulged man has no real concept of what it means to run out of something essential.* It is only when the butler quits and movers start hauling out the furniture that fiscal reality starts to sink in.

As a comedy, the story has a happy ending: Our hero pursues, then marries a rich heiress (Elaine May) and continues living in comfort—but only after "turning over a new leaf" and coming to terms with the financial facts of life.

What does this story teach about changing wasteful lifestyles? For me it mirrors with startling clarity our high-living society's reckless consumption habits. Like the movie's clueless hero, our leaders and public alike seem unable to grasp the idea that the world is finite and that a sustainable future is possible only if we discipline ourselves to live on interest (renewable resources) while carefully conserving our natural and social capital. As in the movie, we narrowly escaped self-inflicted ruin once: After decimating the forests of Europe and North America, we were able to rescue our foundering industrial enterprise by "marrying into" fossil fuels.

But that was our last chance—and it looks like we're going to blow this one too. We need to turn over a new leaf and come to terms with the ecological facts of life.

Paralleling the role of the movie's panicky accountant is the group of 1,700 of leading scientists, including the majority of Nobel Laureates, who issued the "World Scientists' Warning to Humanity" in 1992, in connection with the U.N. Earth Summit in Rio de Janeiro.

From the document's introduction:

> Human beings and the natural world are on a collision course. Human activities inflict harsh and often irreversible damage on the environment and on critical resources. If not checked, many of our current practices put at serious risk the future that we wish for human society and for plant and animal kingdoms, and may so alter the living world that it will be unable to sustain life in the manner that we know. Fundamental changes are urgent if we are to avoid the collision our present course will bring about.

Now, a rational person might expect such a warning to be trumpeted by all the news media the story of the millennium, the equivalent of World War III. Would you believe, the scientists' warning generated only a few column inches in the back pages of a handful of major newspapers before it dropped out of sight?

And now, after another 12 years that the scientists said we couldn't afford to waste, are we any wiser? Will we wait until nature's movers start hauling out the furniture? If cold scientific facts can't seem to shake us out of our blissful denial, what will?

I don't have the answers, but I do find clues in the work of film makers, writers, artists, and poets, whose specialty is cultivating the human imagination. Before we can make a sustainable world, we need to *visualize* it.

Here are a few creative works that have helped me:

## *Material World*

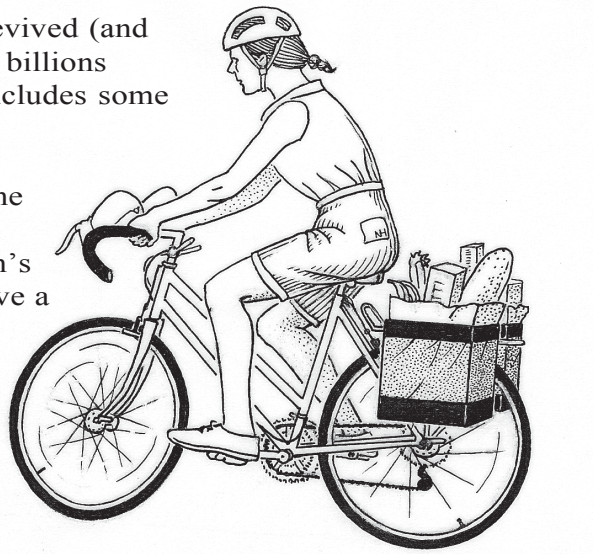
PHOTOGRAPHER Peter Menzel visually confronts industrial society with its disproportionate share of material wealth in his 1994 Sierra Club book *Material World, A Global Family Portrait.* Menzel undertook this project not only to help us appreciate that we all are part of a global family, but also to help us *see* how differently the rest of the world lives. Typical families from 30 different countries agreed to pose for photographs in front of their houses, with all their household goods spread out around them. Subjects ranged from African peasants living in crude mud huts to North Americans in roomy, climate-controlled suburban manors.

I can imagine a sequel to this book called *Energy World,* for energy was used to transform materials into the household goods shown in these photos. The widening gap between rich and poor therefore has a lot to do with people's access to energy. While the majority of the world has to get by on limited human and animal muscle power, we the comfortable, affluent minority have an enormous advantage in our ability to make extensive use of petroleum and other fossil fuels.

But the long-term answer to closing this gap in material well-being is not to extend to "un-developed" countries the financing and technology to make greater use of fossil fuels. The consensus of world atmospheric scientists is that severely disruptive climate changes lie ahead unless emissions of $CO_2$ and other greenhouse gases are curbed drastically. *[See Unit 14 on climate change.]* We need to start immediately making a transition to a world that not only promotes peace, justice, and material well-being for all members of the global family, but also greatly *reduces* our use of fossil fuels. This means learning to live well on much less energy, since alternative fuels necessarily will be scarcer and more expensive. An *Energy World* sequel could give us a clearer idea of what such a world would look like.

## *Living the Good Life*

PERHAPS the most pointed challenge to the American Dream in modern times came from Scott and Helen Nearing, whose 1950s book, *Living the Good Life, How to Live Sanely and Simply in a Troubled World,* described their homesteading experience in rural New England. Through hard work, careful management, and Yankee ingenuity, they were able to live simply and richly with few material possessions and little fossil fuel consumption. Family snapshots reproduced in the book show them building stone walls, gardening, and maple sugaring, while finding ample time for simple pleasures. These images reinforce the book's message that a gentler way of living on the earth *is possible* for anyone convinced of the need for it. Thoreau walked away from his experiment in simple living at Walden Pond after only two years; the Nearings kept at it for nearly 50 years.



The traditional country living skills that the Nearings revived (and the new ones they pioneered) may not be applicable to the billions today who are settled into urban living. But their legacy includes some helpful lessons:

First, by "living as independent as possible of the commodity and labor markets," the Nearings anticipated the kind of "eco-economics" that is the focus of attention in today's environmental "think tanks," such as Lester Brown's Earth Policy Institute. Through their living example, we have a better idea of what Thomas Berry meant when he said that the human economy must be based on "The Great Economy." As the late Donella Meadows observed, "We don't get to choose which laws, those of the [market] economy or those of the earth, will ultimately prevail. But we *can* choose which ones we will probably live under—whether to make our economic laws consistent with planetary ones, or to find out what happens if we don't."

The second lesson is about the *spirit* in which we choose how to live on this planet. The Nearings' move to the land in the depths of the Great Depression of the 1930s wasn't something they particularly *wanted* to do. As "outcasts of a dying social order," they were just looking for a way to survive, physically and psychologically. In the process they discovered habits and skills that turned out not only to be good for their health and happiness but good for the well-being of the planet.

I grew up listening to my parents, grandparents, and others of that generation tell their own stories of what it was like to go through the Great Depression. It was interesting to note that those stressful times affected people differently. Some saw the stock market crash as merely a bad pile-up on the highway to the American Dream. As soon as possible they resumed their pursuit of material consumption and personal wealth. Others were more cautious and humble.

For them the Depression had proved the folly of storing up treasures on earth and forsaking the true values of thrift, hard work, and honesty. Like the Nearings, they persisted in their frugal habits, believing that the Depression was the bitter fruit of the kind of human pride that builds economic towers of Babel.

As the authors of Unit 15, "Economics and Earth Process," point out, modern society continues under the sway of an economic system "built on sand." Ultimately it will fall unless we move quickly to put it on a new foundation of ecological realities.

Like the speaker in Robert Frost's poem, "The Road Not Taken," we have come to two diverging roads into the future of the planet. I believe that humanity has the ability to consciously and rationally choose "the road less traveled by." It depends, I think, on whether this crisis in sustainability, this threat to our very survival, calls forth the "higher" or the "lower" aspects of our human nature. There is in each of us a strong, natural desire to take the lower path of clinging to the physical comforts and conveniences that we have become accustomed to. There is also a part of us that loves plain truth more than illusion, that takes genuine pleasure in living according to what Woolman called "universal righteousness." The Nearings provided one example of what that choice can mean—a good life for everyone, based on thrift, integrity, responsibility, and compassion—virtues that undergird true happiness and sustainability.

### *The End of Nature*

PUBLISHED IN 1989, *The End of Nature* is Bill McKibben's passionate response to early evidence of major global climate change. He concludes that we have *no choice* but to cut way back on the use of fossil fuels and to *reduce*, not just stabilize, human population if civilization as we know it is to survive beyond this century.

Within that imperative, we face some basic choices, McKibben suggests: 1) We can continue the "defiant" approach toward nature and its limits that has characterized the industrial age so far; we can assume that as technology creates problem after problem we can keep one step ahead with more technological fixes. 2) We can adopt a more humble style, characterized by simpler living, appropriate technology, and respect for the intricate web of nature. To those who say humans aren't built for such a role, McKibben points to numerous other cultures over the millennia who have survived by following such a path. In the final analysis, he says, we can't have both a thriving natural world and an economy based on growth, insatiable consumption, and technological domination.

McKibben admits that we are more inclined to choose the "defiant" approach because it is much harder in our culture to imagine simpler living in positive terms. "The difficulty is almost certainly more psychological than intellectual—less that we can't figure out major alterations in our way of life than that we simply *don't want to*. Even if our way of life has destroyed nature and endangered the planet, it is so hard to imagine living in any other fashion... Changing the way we think is at the heart of the question. If it ever happens, the actions will follow," he says.

The odds of this happening seem slim, McKibben admits. But he finds hope in the positive models of people like Thoreau and Gandhi, who planted powerful positive visions of humble thinking and living in the popular imagination. "Should we choose, we could exercise our reason to do what no other animal can do: We could limit ourselves voluntarily, choose to remain God's creatures instead of making ourselves gods. What a towering achievement that would be."

## Article 2

## "The Creation at This Day Doth Loudly Groan"

by Keith Helmuth

(Adapted from *If John Woolman Were Among Us—Reflections on the Ecology of Flush Toilets and Motor Vehicles*)

FROM OUR own age of speed and materialism it is interesting to look back at John Woolman's reaction to the moral cost of stage coach services going "upwards of one hundred miles in twenty-four hours." The achievement did not impress him. "So great is the hurry," he wrote, "in the spirit of this world, that in aiming to do business quickly, and to gain wealth, the creation at this day doth loudly groan."

Imagine what metaphors he would have to reach for to represent the effect on Creation of our present motor vehicle transportation system.

Like the technology of slavery in the past, the motor vehicle system of today is considered to be an instrument of freedom, making possible a life that yields both wealth and ease. In the case of slavery, we can see how the evolution of moral sensibility came to alter this positive valuation of the slave system. I am suggesting that we consider whether further development of moral sensibility should, likewise, alter our positive valuation of the motor vehicle system. I know the suggestion sounds outrageous, but bear with me a bit further.

In 1949, conservationist Aldo Leopold suggested in *A Sand County Almanac* that the next major step in the evolution of moral sensibility would be the development of a "land ethic." He offered, as a new ethical standard, the preservation and enhancement of ecosystem stability: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."

One of the shibboleths of industrial-commercial culture is that technology is neutral and that only human use gives it direction for good or ill. This is simply incorrect. All technologies are biased; they all have a natural bent toward a specific use or range of uses. Just as bulldozers are biased toward landscape alteration, private motor cars are biased toward high mobility. These are not moral judgments but simply identifications of inherent tendencies. We are obligated, having identified the bias of a technology, to judge the social and ecological consequences of its application.

In the case of motor vehicles:

1. The internal combustion engine has produced a tidal wave of ecosystem exploitation and biospheric toxification, which is literally unraveling the structural complexity thus far achieved by organic evolution.
2. The internal combustion engine is the principal device which has turned farming from an activity of ecosystem preservation into an activity of industrial extraction, from community accountability to market accountability. The health of the farm has become the health of the balance sheet. Motor-driven traction machines, combined with long-distance truck transport, have placed food security within the production and distribution system, which makes decisions only on the basis of cash profitability.
3. Motor vehicles have ruptured the orderly development and self-renewing patterns of human settlements. First of all, they have depopulated rural areas by concentrating employment in the city. Subsequently they have permitted a new social hybrid: rural residents who practice no rural skills, being entirely dependent on their motorized connection with urban environments. Motor vehicles have undercut family solidarity and the social life of neighborhoods. They have fostered the sense that social problems can be solved by movement in space rather than movement in mind and heart. They have addicted us to a pattern of deficit financing, which in turn preempts our time, energy, and skills, into the quest for a large cash flow. They have addicted us to an unreasonable need for motorized transport, while at the same time depriving us of self-powered mobility, by organizing social and economic life around their required use.
4. The motor vehicle system has allowed and promoted the development of a highly irrational and grossly wasteful economic style. It has fostered the habits of consumerism to the point where they have now, in effect, become a complete political-economic ideology, subverting and supplanting the ideals of liberty and justice.
5. Motor vehicles, far from being simply conveniences, impose new and previously unknown levels of mental and physical labor on us. They not only consume more time than they "save," they preempt a large segment of human intelligence and energy in their design, manufacture, service, and repair, which could be more creatively employed developing a rich social life and in meeting genuine human needs.
6. Motor vehicle exhaust is the single largest source of particulate matter, which combines with atmospheric moisture to become acid rain, snow, and fog. Motor vehicles are a major human health hazard through direct atmospheric pollution. Motor vehicles are a major contributor to the greenhouse effect. Sixty to 80 percent of all air pollution is from vehicle exhaust.

7. The loss of life, injury, and property damage we sustain through indulgence of the motor vehicle system is the annual equivalent to a major war. In the United States alone this amounts to 24 million accidents, 5 million human injuries. 50,000 human deaths, and 365 million animal road kills.
8. In 1989 the consumptive requirements of the motor vehicle system for natural resources were already of vast proportions. In the United States alone it used half of all the petroleum, 74 percent of all rubber, 63 percent of all lead, and 60,000 square miles of paved-over land. The numbers have increased since 1989. Today there are 2,336,000 miles of paved roads.

I HAVE CHOSEN THIS FOCUS on the motor vehicle system because it provides a good example of how great a difficulty we have gotten ourselves into with respect to ecologically sound adaptation. We stand in a condition where to suggest we might come to live without motor vehicle transport, or even significantly reduce our reliance on it, makes one seem odd and out of touch with the so-called "real world." I would suggest, however, that if we take biospheric health, or even just human health, as our governing focus, it is the motor vehicle system which is out of touch.

The motor vehicle is in the category of "invisible technology." We cannot even begin to see how it would be possible to live without it. Its position in the production and monetary systems is so pervasive and entrenched that any suggestion of restriction or withdrawal conjures up visions of socio-economic disaster. It will be most interesting to see what happens when the price of oil begins its final precipitous climb, and supplies dwindle to the rationing level.

The motor vehicle system has come to occupy our consciousness with the force of a natural phenomenon. It has cast a mental and emotional harness over both personal and social life. We need constant reminders that this has been done by design, by specific acts of human agency. We know, for example, that General Motors deliberately bought out the electric trolley system of Los Angeles, tore up the tracks, junked the cars, and installed diesel buses. It was just good business. Firestone and Standard Oil got into the act, and the electric trolley was virtually wiped out, or never given a chance, in North America. I tell this story because I want to plant a seed of doubt about the inevitability and necessary continuance of the motor vehicle system.

We are in quite the same position with respect to our motor vehicles as John Woolman found many Quakers to be in with respect to their slaves. He wrote:

> Many Friends who keep slaves are under some exercise on that account, and at times think about trying them with freedom, but find many things in their way. And the manner of living and annual expenses of some of them are such that it is impractical for them to set their slaves free, without changing their way of life.

Those who can design the motor car out of their living and working arrangements are probably making a better contribution to the health of the biosphere than those of us who grow organic market gardens but still run around the countryside in pickup trucks.

The way out of the high energy, industrial market economy trap is, of course, the design and creation of a comprehensive conserver society. In John Woolman's terms, it means *turning away from the snare of "outward greatness"* and, I would add, the dream of perfect convenience, to a way of life which appropriates and uses the gifts of Earth in an ecologically sound manner.

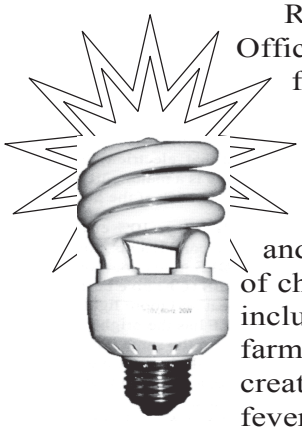
Article 3

# Seeking a New Light

by Kim Carlyle

(Reprinted from *BeFriending Creation,* March-April 2001)

READERS OF *BEFRIENDING CREATION* are well aware of how wasteful our culture is in its use of energy: The average U.S. citizen uses *four times* the energy of his Majority-World counterparts in the poorer countries. And most of this energy comes from fossil fuel combustion, whose carbon emissions are causing our planet's climate to change. Certainly, this is a major cause for concern. But should our energy use and the resultant global warming be a matter for the spiritual community that reads this publication?



Recently I heard the Rev. Richard Kilmer, Director of the Environmental Justice Office of the National Council of Churches of Christ, tell the North Carolina Interfaith Climate Change Project that global warming is a concern for spiritual communities because "it is an issue of survival; it is an issue of justice; and it is an issue of life-style."

I agree. The United Nation's Intergovernmental Panel on Climate Change (IPCC) now predicts warming of 2.5 to 10.4 degrees Fahrenheit between 1990 and 2100. While the types of changes cannot be predicted with certainty, the fact of change is certain. And change will occur much too rapidly for life forms, including humans, to adapt without great suffering and loss of life. Productive farming regions may turn into deserts; flooding caused by rising sea levels will create refugees by the millions; tropical diseases, such as malaria and dengue fever, have already begun to spread to locations where they were previously unknown.

Commenting on the latest ICCP report, Klaus Toepfer, the head of the UN's Environment Program, said, "The scientific consensus presented in this comprehensive report about human-induced climate change should sound alarm bells in every national capital and in every local community."

Global climate change is an issue of survival.

The richest countries of the world, the over-developed nations, are primarily responsible for the problem and the poorest countries, the Majority World, will be the first to suffer. The United States, with 4 percent of the world's population, contributes 22 percent of the world's greenhouse gases. A conservative estimate is that Bangladesh will have 26 million people displaced by the rising sea levels. The rich will, at least temporarily, have the resources to deal with some of the changes. The poor will suffer.

Global climate change is an issue of justice.

The affluent of the world have created the problem through the extravagant use of energy. Fossil fuels are used to provide indoor comfort, transportation, and power for the industries that provide our (mostly disposable) consumer goods. We must examine our practices of consumption. We must reduce; we must seek alternatives; we must simplify.

Global climate change is an issue of life-style.

Yes, we'll need to make adjustments in our manner of living, but the changes need not be restrictive, prohibitive, or depriving. It is estimated that a 30 percent reduction in greenhouse gases could be achieved through simple energy conservation: home heating, air conditioning, and water heating efficiencies; smarter local and long-distance travel choices; and informed decisions that will reduce the energy costs of consumer goods. And of course, we'll need to see things in a new light.

While energy-saving measures such as insulation, weather-stripping, programmable thermostats, and carpooling provide great results with little effort, nothing is as simple as changing a light bulb.

Since 1880, there hasn't been much change in the technology of Edison's invention. The incandescent light bulb is as inefficient as ever. If this device were used for what it does best,

we would cup our frigid mitts around it in cool weather and call it Edison's "hand-warmer." These bulbs convert only ten percent of electricity to light; 90 percent becomes waste heat. In fact, incandescent means "glowing with intense heat."

The efficient replacements for these energy hogs are compact fluorescent lights (CFLs). Fluorescent means "producing light while glowing with radiant energy." (That has a Friendly, spiritual ring to it, doesn't it?) These energy-saving CFLs screw into the same sockets as the "hogs," and use about a quarter of the energy to produce the same amount of light. In fact, the 15-watt CFs that I use to replace 60-watt "hand-warmers" produce more light (measured in lumens). And the new bulbs last ten times longer!

The initial cost scares many folks away—they're costly even after you consider that one CFL (over its life) will replace ten incandescent lights. But after factoring in the energy savings over the 10,000-hour life, the frugal, ecologically enlightened (catch the pun?) consumer is about $34 to the good, when replacing a single 60-watt "hog." And the environment is spared 450 to 500 pounds of carbon dioxide—the leading greenhouse gas—not to mention all the other fossil fuel pollutants.

Sure, the savings in money and in pollution will vary with the local utility's rates and mix of energy sources: coal, oil, gas, nuclear, hydro. But I think you are beginning to see the light (yes, I couldn't resist).

A FEW WORDS OF ADVICE: CFLs come in a variety of shapes, sizes, and colors. Some are attractive enough for use in hanging fixtures; some demand to be covered by shades. Some might require a special harp (the wire loop thing that holds the shade to the lamp) to fit into your favorite lamp. Some are "cool white"; some are "warm white." You may want to experiment. Sources: The best selections are found in those dreadful hardware supermarkets. Or you may want to do business with Backwoods Solar, run by a Quaker couple in Idaho *(steve@backwoodssolar.com)*.

Certainly other measures, such as alternative energy sources and international agreements on emissions, are necessary and urgent, but an important first step is to conserve energy at home. So, I encourage *BeFriending Creation* readers to seek a new light—one glowing with radiant energy. And be sure to tell your friends and Friends.

## Article 4

# Earth-Friendlier Shelter, Food, and Transportation

by Ruah Swennerfelt

IN HIS BOOK *Wilderness Spirituality: Finding Your Way in an Unsettled World*, the Reverend Dr. Rodney Romney (retired senior pastor of Seattle First Baptist Church) writes "I believe we can achieve the Promised Land, not by railing against or destroying our various wildernesses but by moving through them in joyful and deep concern for the health and welfare for our planet and all its life-forms and with a personal resolve to take individual responsibility for our own strength and growth."

Trying to make decisions about how we travel, how we heat our houses and our water, how we use our water, or how to make responsible purchases has become almost a full-time job. At times I feel inundated with information. I just want to close my eyes and hope it all goes away! But it's not going to go away. With each decision that involves the use of fossil fuels, I must ask myself whether I am acting in accordance with Quaker Testimonies or other sources of my faith. Most petroleum geologists are predicting that global oil production will peak by 2012. As supply declines, demand will continue rising, resulting in sharply increasing prices. How will we function as a society when energy is no longer so cheap and abundant? What are my responsibilities to help make a peaceful and orderly transition?

I'd like to begin with where I am now and think how I might change to be living more lightly. In many ways my husband and I are modeling practices that would greatly reduce humanity's burden on the environment if everyone lived as frugally and carefully. But we know that even this is not enough to secure a sustainable, fulfilling future for our children and grandchildren. There are many tough questions that we must face for their sakes.

We live in the country, in a beautiful, serene place where we enjoy being close to nature. Hey, we can see the stars at night! We are grateful for this privilege, but it is a mixed blessing. We watch with dismay as the countryside fills up with large, expensive houses that don't even make use of passive solar gain. Many of their occupants commute in SUVs to distant jobs in pursuit of their version of the American Dream. At least our work is at home, so we don't have to commute. But we are still dependent on an automobile (a 1988 Honda Accord with 240,000 miles) for shopping, occasional meetings, Sunday worship, etc. We live in an "off-grid" solar-electric house, but we use propane for cooking, refrigeration, and heating water. (Natural gas and propane burn cleaner and therefore create less greenhouse gas emissions than oil or electricity which comes from oil or coal burning plants.) We still resort to a gasoline-powered generator to occasionally recharge the batteries in the winter, when there is often no sun for many days in a row. We heat with wood that we harvest from this land (mostly old or fallen trees), and we grow some of our own food organically. But we still rely on many purchased goods that come at a cost to the environment. We are living far more lightly on the earth than the average North American family, but when we take the "Ecological Footprint Quiz" at the end of this unit we learn that we are still far from living sustainably and equitably.

SO WHAT ARE SOME OF THE NEXT STEPS that we can take? We know we can use our car a lot less (this means planning more carefully our trips to town and using bicycles to get groceries from the market five miles away). We can make less use of the backup generator by adjusting our activities more to the amount of sunlight being captured by the photovoltaic panels. We can finish installing those solar hot water panels we bought used a few years ago, to reduce our use of propane for heating water. We can even use our wood cook stove. We can grow more of our own food and buy more locally grown produce. This will involve inconveniences, but we *need* to do it, and we know we *can* do it.

So there you have it—my public confession of what I've known for a long time I could be doing, but have found excuse after excuse for putting off. Now I have another motivation, besides caring about the future of my grandchildren, to start turning this long list of "should-dos" into "have-dones."

I share this example to portray some of the many ways our lives have slipped steadily into dependence on fossil fuels. An article in a magazine recently talked of "eating our fossil fuels." The author explained that large-scale farming relies so heavily on fossil fuels for all the machinery and for the fertilizers, pesticides, and herbicides that a lot of food today could be considered *a petroleum by-product!* When we buy food that has traveled to us by planes, ships, trains, and/ or trucks, even more fossil fuel has been used in our name. One way to look at this is the number of calories of energy in the food we eat in proportion to the calories of energy required to produce it. In pre-industrial agriculture it typically took about *one* calorie of human and animal energy to produce about *ten* calories of food energy. The other nine calories came from the sun. In today's industrialized agriculture, it now takes an average of *ten* calories of fossil-fuel energy to produce *one* calorie of food energy! (This is *not* a misprint!) The contribution of the sun now becomes almost negligible. For some specialty food items that are flown to us from halfway around the world, the calorie ratio must go through the roof! And yet we hear agriculture experts brag about how efficient our country's food production system is!

The Union of Concerned Scientists (UCS) has identified transportation as the most significant, consumer-related environmental problem. Cars and light trucks generate almost 30 percent of all greenhouse gases, which are a significant contributor to global warming (see Unit 14). Food production ranks second in environmentally harmful activities (see Unit 7). Then the UCS ranks home heating, hot water, air conditioning, and household appliances and lighting as the third most harmful of consumer activities. We begin to understand that our own individual actions *do* make a difference.

OKAY, NOW you've heard some of the pros and cons of country living. What about life in the city? We have city friends who were able to give up their cars and now get around nicely on bicycles and public transportation. In cities many facilities seem to be used more efficiently. But cities still have huge ecological footprints. This is because they tend to consume more resources

than they produce. So we each must take an inventory of where we are as city, suburban, and country dwellers and look at what changes we can make that make the most ecological sense in our situations. There are no quick and easy solutions. But the longer we wait the harder it becomes to make a difference. New technologies, such as hybrid or electric cars, will play an important role, although if we all traded in our existing cars, somebody else would end up driving them. The most important advance, I believe, will be what happens to our *thinking and attitudes*.

I ENCOURAGE YOU TO JOIN OTHERS in your faith community or in your neighborhood to form a support group. We are swimming upstream in a culture that tells us that "more is better" and that "growing the economy" is our biggest and greatest task. We need each other, every step of the way.

One example of group work is the Household EcoTeam Project. From their website: "Neighbors are getting to know one another and are making a difference—and Global Action Plan's Sustainable Lifestyle Campaign has a lot to do with it! Block by block, people are getting involved with the program which aims to change consumptive behavior to reduce their resource-use and its impact on the environment. And it works! With the help of a trained coach and a user-friendly guidebook, Household Ecoteam members choose practical actions and support one another in reducing their garbage on an average of 42 percent, their water usage by 25 percent, and their transportation fuel and $CO_2$ output by 15 percent. Another valuable by-product is saving money. Households on average experience annual savings from their reduction practices of $300." Contact them *at www.envirocenter.org/groups/ecoteams/ecoteams.html*.

Another example of a support network is the "What Would Jesus Drive" (WWJDrive) campaign. WWJDrive is organized and sponsored by the Evangelical Environmental Network (EEN), a biblically orthodox Christian environmental organization. "The question, 'What Would Jesus Drive?' is a more specific version of the well-known question, 'What Would Jesus Do?' Chris- tians ask themselves 'What Would Jesus Do?' to help guide them in their daily decisions as disciples (or followers) of Jesus Christ, who lives and reigns in their hearts. As followers, the question actually becomes, 'Lord, what would you have me do?' So our specific question then becomes, 'Lord, what would you have me drive?' We believe the Risen Lord Jesus cares about what we drive. Pollution from vehicles has a major impact on human health and the rest of God's creation. It contributes significantly to the threat of global warming. Our reliance on imported oil from unstable regions threatens peace and security." Their website is *www.whatwouldjesusdrive.org*.

Many environmentally-friendly options are available today. In some communities, consumers can purchase "green" electricity (produced by small hydro dams, wind, or solar) through their suppliers. There may be several attractive options for efficient cars when it's time to re- place your fuel guzzler. Did you know that buses and trains use about *one-eighth* of the re- sources that airplanes do? Buses are considered the most earth-friendly mode of long-distance travel, with automobiles being the worst. In an article in *BeFriending Creation* (November- December 2000), Kim Carlyle noted that "John Woolman walked much of the time. He was uncomfortable traveling by coach because the horses were driven too hard and the post boys were overworked and mistreated." When Kim explored these ideas in a workshop, the participants came to the conclusion that John Woolman would travel today by Greyhound bus, with the common people. We *do* have choices and we just need to feel motivated to take advantage of them.

SO, BY NOW I've gotten you fired up to join a support group, then hopefully start making some changes in your life. Where do you begin? Much has been written about energy use as it relates to our homes and transportation. Look in the resources in Appendix A for suggested books and web sites. I would like to call special attention to *Living Lightly on the Earth—In the City,* a leaflet included in the back pocket of this book, and the *booklet Walking Gently on the Earth* booklet, published by Quaker Earthcare Witness. The list is not exhaustive, and most likely no one person can comply with all suggestions, but give it some worshipful thought and see what you can do!

Here is a shorter list you can start with:

## In your home

- Install energy-efficient lighting like compact fluorescent lamps (CFLs). Your local utility may provide helpful information and services. Turn off lights when not in use.
- Install water-saving shower heads and faucet aerators.
- Keep your appliances in good working condition. Periodically vacuum the condenser coils of your refrigerator.
- When replacing appliances, purchase those marked with the "Energy Star" logo.
- Set you water heater thermostat at no more than 140°F.
- Fix leaks promptly. Use water conservatively. Save rinse water and use it to flush the toilet.
- In cold weather, plug air leaks around windows and doors. Check door seals. If your apartment is overheated, rather than opening windows, ask the building superintendent to adjust the heat. If the thermostat is under your control, turn it down at night or when you leave. Using sweaters indoors also saves energy, since you can keep the rooms cooler.
- In the summer block sunlight and use fans instead of air conditioners whenever possible.
- If you live in a multi-story building, use stairs rather than the elevator; if there are too many flights, take the elevator part way and walk the rest.
- Shade south- and west-facing windows to reduce heat loads.
- Use electricity sparingly in lights, range, TV, and radios.
- Avoid using clothes dryers except for "solar dryers" (the old-fashioned clothes lines).
- Practice low-maintenance lawn/yard care. Get exercise and use a motorless push mower.
- If the option is available, purchase "green" electricity.
- Recycle 100 percent of what is possible.

## How you get around

- Use public transportation as much as possible.
- Use ground transportation (trains and buses) instead of airplanes for long-distance travel whenever possible.
- Drive the most fuel-efficient vehicle you can for the size/type car you need and consider purchasing a new fuel-efficient type car when it is time for a replacement.
- Keep your car well-tuned and the tires properly inflated.
- Maintain efficient exhaust emission controls.
- Consider leasing or sharing ownership of a car.
- Walk or ride a bicycle for short trips.
- Consider moving closer to your job. Carpool when feasible.
- Consolidate or combine car trips. Eliminate unnecessary trips.
- Avoid unnecessary engine idling.
- Recycle used motor oil and tires.

## Questions for reflection

- Do I seek to avoid destruction of the environment by conserving energy and relying on renewable forms of energy?
- Have I made an energy audit of my home, to determine how I might use less energy?
- If I am from an energy-wasteful home, am I willing to commit myself to a 25 percent reduction in energy use during the next year, and further reduction in future years?
- Am I aware of ways to help those in my community who may struggle to meet their most basic energy needs?
- Am I encouraging my legislators—at both the state and federal levels—to initiate programs and laws mandating efficient energy policies in our states and country?
- In encouraging myself and others to reduce their energy consumption, am I clear about the reasons for doing so? [for example: air pollution and global warming; the seeds of war within the misuse of "natural resources" (as in Kuwait, Iraq); spiritual clarity in not supporting activities which harm others.

- Do we treat with reverence the natural resources of the earth which all living things share interdependently?
- Am I aware of what happens to the waste products that I generate? Do I dispose of that waste in ways that are regenerative, or at least do no harm?
- Do I accept that there is no "away" to which to throw unwanted items and therefore try to find the best way to recycle everything I no longer need?
- Am I careful to avoid spending and investing money in ways that result in others doing things in the world that I would not do myself?
- Do I try to reduce my use of my automobile by walking, biking, or taking public transportation whenever possible?
- Am I encouraging my legislators—county, state, city or town, and federal levels—to enact legislation which protects natural resources?
- Am I helping to create recycling opportunities where there are none or to help educate about these issues in the schools?

## Illustrative activity

## Calculate Your Ecological Footprint: 12 Simple Questions to Assess Your Use of Nature

(by Ritik Dholakia and Mathis Wackernagel ©2002 Redefining Progress. All rights reserved. Permission to reprint the Ecological Footprint Quiz was granted by Redefining Progress, 1904 Franklin St., 6th Floor, Oakland CA 94612; 510/444-3041; *www.redefiningprogress.org*.)

This basic questionnaire calculates a relatively accurate Ecological Footprint for a person living in the United States.

Answer all 12 questions as honestly and accurately as possible. For a more detailed analysis of individual ecological footprints or to learn more about the ecological footprint methodology and applications, go to the Redefining Progress website.

### Instructions

Step 1. Circle your response and the number in each column that corresponds to your answer.
Step 2. Enter the circled number from each column into the "subtotal" boxes below each column.
Step 3. Calculate the footprint for each section by multiplying your numbers as shown.
Step 4. Enter the subtotals from each section on the reverse side under "Quiz Results."
Step 5. Add up your subtotals to get your Total Footprint.

### Food

Question 1. *How often do you eat animal-based foods (beef, pork, chicken, fish, eggs, dairy products)?*

| | | |
|---|---|---|
| A. | Never (vegan). | 0.46 |
| B. | Infrequently/strict vegetarian (no meat and eggs/dairy a few times a week). | 0.59 |
| C. | Occasionally (no meat or occasional meat, but eggs/dairy almost daily). | 0.73 |
| D. | Often (meat once or twice a week). | 0.86 |
| E. | Very often (meat daily). | 1.00 |
| F. | Almost always (meat and eggs/dairy in almost every meal). | 1.14 |

Question 2. *How much of your food is processed, packaged, and not locally grown (from more than 200 miles away)?*

| | | |
|---|---|---|
| A. | Most of the food I eat is processed, packaged, and from far away. | 1.10 |
| B. | Three quarters. | 1.00 |
| C. | Half. | 0.90 |
| D. | One quarter. | 0.79 |
| E. | Very little. Most of the food I eat is unprocessed, unpackaged, and locally grown. | 0.69 |

Your Food Footprint is Q1_____x Q2_____x 5.5 =_____acres.
(*Multiply the answer to Question 1 by the answer to Question 2 by 5.5; transfer to Line 1 on p. 96.)*

## Shelter

Question 3. *How many people live in your household?*

| | |
|---|---|
| A. 1 person. | 1 |
| B. 2 people. | 2 |
| C. 3 people. | 3 |
| D. 4 people. | 4 |
| E. 5 people. | 5 |
| F. 6 people. | 6 |
| G. More than 7 people. | 7 |

Question 4. *What is the size of your home?*

| | |
|---|---|
| A. 2,500 square feet or larger. | 1.9 |
| B. 1,900–2,500 square feet. | 1.5 |
| C. 1,500–1,900 square feet. | 1.3 |
| D. 1,000–1,500 square feet. | 0.9 |
| E. 500–1,000 square feet. | 0.6 |
| F. Less than 500 square feet. | 0.3 |

Question 5. *Do you use energy conservation and efficiency measures throughout your home?*

| | |
|---|---|
| A. Yes. | 0.75 |
| B. No. | 1.00 |

Question 6. *Which describes your home?*

| | |
|---|---|
| A. Free-standing house. | 1.0 |
| B. Multistory apartment home. | 0.8 |
| C. Green-design home. | 0.5 |

Your Shelter Footprint is Q4_____x Q5_____x Q6 / Q3_____=acres
(Multiply your answer to Question 4 by answer to Question 5 by your answer to Question 6. Then divide by the answer to Question 3; *then transfer to Line 2 on the p. 96.*)

## Transportation

Question 7. *On average, how far do you travel on public transportation each week (bus, train, subway, or ferry)?*

| | |
|---|---|
| A. More than 200 miles. | 0.86 |
| B. 75–200 miles. | 0.42 |
| C. 25–75 miles. | 0.15 |
| D. 1–25 miles. | 0.04 |
| E. 0 miles. | 0.00 |

Your Public Transit Footprint is_____acres. (Enter the circled number in this subtotal box.)

Question 8. *On average, how far do you go by car each week (as driver or passenger)?*

| | |
|---|---|
| A. 400 miles or more. | 1.91 |
| B. 300–400 miles. | 1.43 |
| C. 200–300 miles. | 1.00 |
| D. 100–200 miles. | 0.55 |
| E. 10–100 miles. | 0.12 |
| F. 0–10 miles. | 0.00 |

*If your answer for Question 7 is 0–10 miles, enter 0 in the subtotal box and skip Questions 9 and 10.*

Question 9. *How many miles per gallon does your car get? (If you don't own a car, estimate the average fuel efficiency of the cars you ride in.)*

| | |
|---|---|
| A. More than 50 miles per gallon. | 0.31 |

| | |
|---|---|
| B. 35–50 miles per gallon | 0.46 |
| C. 25–35 miles per gallon. | 0.65 |
| D. 15–25 miles per gallon. | 0.98 |
| E. Fewer than 15 miles per gallon. | 1.54 |

Question 10. *How often do you drive in a car with someone else, rather than alone?*

| | |
|---|---|
| A. Almost never. | 1.50 |
| B. Occasionally (about 25%). | 1.00 |
| C. Often (about 50%). | 0.75 |
| D. Very often (about 75%). | 0.60 |
| E. Almost always. | 0.50 |

Your Car Footprint is: Q8_____x Q9_____x Q10 x 4 =_____acres.

Question 11. *Approximately how many hours do you spend flying each year?*

| | |
|---|---|
| A. 100 hours (approximately one coast-to-coast U.S. roundtrip each month). | 6.00 |
| B. 25 hours (approximately two or three coast-to-coast U.S. roundtrips each year). | 1.50 |
| C. 10 hours (approximately one coast-to-coast U.S. roundtrip per year). | 0.60 |
| D. 3 hours. | 0.18 |
| E. Never fly. | 0.00 |

Your Air Travel Footprint is_____acres (enter the circled number in the box).

Your Mobility Footprint is_____acres
(For Mobility Footprint, add Public Transit, Car, & Air Travel totals; then *transfer to Line 3 below*).

## Goods

Question 12. *Compared to people in your neighborhood, how much waste do you generate?*

| | |
|---|---|
| A. Much less. | 0.75 |
| B. About the same. | 1.00 |
| C. Much more. | 1.25 |

Your Goods Factor is_____acres

## Quiz results

1. Food footprint (from p. 94). _____ acres
2. Shelter footprint (from p. 95). _____ acres
3. Mobility footprint (from p. 94). _____ acres
4. Shelter + mobility (*add 2 + 3*). (2)_____+(3)_____=_____acres
5. Goods Factor (from p. 94). _____ acres
6. Goods & services (*multiply 4 x 5*). (4)_____x (5)_____acres
7. (Multiply goods and services by 0.9) (6)_____x 0,9 = _____acres

(*Add 1 + 2 + 3 +7*)

| | |
|---|---|
| *Food (from #1)* | _____ acres |
| + *Shelter (from #2)* | _____ acres |
| + *Mobility (from #3)* | _____ acres |
| + *Goods & Services (from #7)* | _____ acres |

Your Total Ecological Footprint _____acres

## In comparison

- The average U.S. Ecological Footprint measures *24 acres per person*. Your footprint measures_____.____% of an average U.S. Footprint. Formula = (Your Footprint divided by 24) times 100.
- Worldwide, there exist 4.5 biologically productive acres per person. Therefore, if everyone lived like you, we would need_____.____planets. Formula = Your Footprint_____.____ divided by 4.5.

You can also take the Ecological Footprint Quiz on-line at *www.MyFootprint.org*.

WHEN I FIRST TOOK THIS TEST I was devastated to know that it would take a couple of planets to allow everyone to live in the way I do! But instead of stressing over it, I started to look at where I could improve. That's the purpose of the test. It's just to give us a guide. When I fly to Europe to visit my family I explode my footprint. Just one flight and I blow it! So, do I not visit my family? Or do I think carefully before I make decisions like that? I will occasionally visit family and I will try to live more lightly in my day-to-day life.

## Prayers and responsive readings

Praise the Lord!
Praise God from the heavens:
Praise God, all the angels,
praise God, heavenly hosts.
Praise God, sun and moon,
and all the shining stars.
For God created and established them
for ever and ever.
Praise the name of the Lord!
Praise the Lord!
Praise God from the earth:
Sea monsters and all deeps,
fire and hail, snow and frost,
stormy winds that blow,
mountains and all hills,
fruit trees and all cedars.
Wild animals and all cattle,
creeping things and flying birds.
Praise the name of the Lord!
Praise the Lord!
All peoples of the earth,
young men and women alike,
old and young together!
Let them all praise the name of the Lord!
For his glory is above the earth and the heaven.
Praise the Lord!

—Paraphrased Psalm 148, by June Adams-Gibble,
Director, Congregational Nurture, Church of the Brethren

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## Periodicals


- *Home Power Magazine*. PO Box 520, Ashland, Ore. 97520; 800/707-6585; <*http://www.homepower.com*>.

*Solar Today*. American Solar Energy Society. 2400 Central Ave., Suite A, Boulder CO 80301-2843; 303/443-3130; <*http://www.solartoday.org*>.


## Websites


- What Would Jesus Drive? <*http://www.whatwouldjesusdrive.org*>.
- EcoTeams, <*http://www.envirocenter.org/groups/ecoteams/ecoteams.html*>.

Co-op America, <*http://www.coopamerica.org*>.

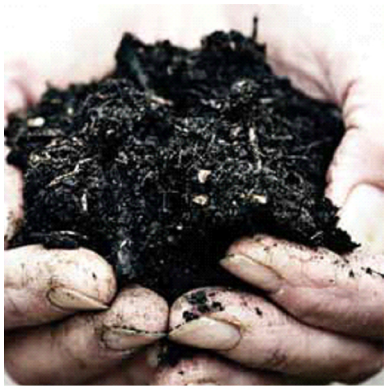
# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 9

## The Divine Gift of Good Soil

by Tom Small

### Purposes of this Unit



The Web of Life in Your Hands

In this unit, we aim to promote a deeper understanding and appreciation of the soil beneath our feet and largely beneath our notice—what Quaker soil scientist Francis Hole calls "the hidden, secret friend, the root domain of lively darkness and silence." In that hidden domain lives 80% of the earth's biosphere, "cooking away in the warm dark," in Gary Snyder's words. Utterly dependent on its productivity, inventiveness, and intelligence, we need to walk more lightly and reverently as well as to understand what we can do to restore the soil community and thereby limit climate disruption, heal ourselves, and restore the community of all creatures of the earth, water, and air.

## Sacred Texts and Other Inspirational Readings

So then, there is the sweet communion.... the sweet joy and refreshment in the Lord our righteousness, who causeth righteousness to drop down from heaven, and truth to spring up out of the earth. And so our Father is felt blessing us, blessing our land, blessing our habitations, delighting in us and over us to do us good; and our land yields its increase to the Lord of Life, who hath redeemed it and planted the precious plants and seeds of life in it.

—Isaac Penington (1617–1679)

We say that God is the Inner Light, but I want to affirm that also of the Inner Darkness, and I do not mean desolation or evil, but a quiet waiting and creativity. "The darkness hideth not from thee; but the night shineth as the day; the darkness and the light are both alike to thee."

—Elizabeth Watson, "Your God Is Too Small"
address to Quaker Earthcare Witness annual meeting, 1996

Green vegetation and the ground on which we step are bathed in sunlight—but not plant roots, not our own Inner Light. They work in blessed darkness.

—Francis Hole, Friends General Conference workshop, 1996

Soil is not unalive . . . Life extends over the planet as a contiguous, but mobile, cover and takes the shape of the underlying Earth. Life, moreover, enlivens the planet; Earth, in a very real sense, is alive.

—Lynn Margulis and Dorion Sagan, *What Is Life?* (1995)

The history of every Nation is eventually written in the way in which it cares for its soil.
—Franklin Delano Roosevelt, 1936

The soils of the world are either being worn out and left in ruins, or are being slowly poisoned . . . Mother earth has recorded her disapproval by the steady growth of disease in crops, animals and mankind.
--Sir Albert Howard, *An Agricultural Testament* (1940)

Our soil is a planetary emergency. —Al Gore, 2010
*The Divine Gift of Soil*

Speak to the earth, and it shall teach thee. —*Job* 12:8

About "Nature's writing," Gary Snyder observes, "A text is information stored through time." Everything tells a story. Here are a few of Nature's texts. Listen, with all the senses, to stories of transformation.





Story-Telling: Jurassic Fossils, Tree Rings, Milkweed Seeds

# Articles and Texts for Reflection and Action

## 1. THE HEAVEN UNDER OUR FEET
### by Tom Small

Heaven is under our feet as well as over our heads.
--Henry David Thoreau, WALDEN (1854)

Though, as a species, we may have journeyed through immense reaches of time and space, we remain close to our origins, to Eden, and to wilderness. They are within us and right beneath our feet.

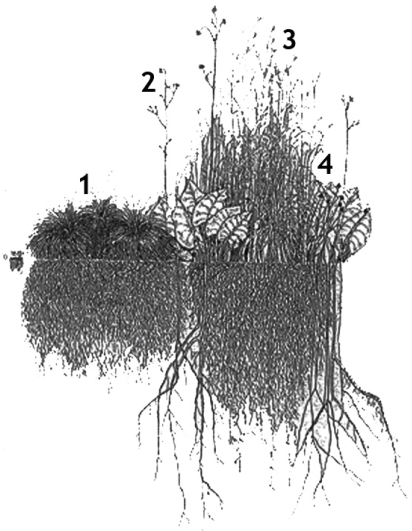
Scripture tells us God formed us "of dust from the ground" (*Genesis* 2:7); created us "from dust, then from a drop of seed" (*Koran*, Surah XXII.5). Our progenitor, Adam, is *adama*—soil, or clay. We *Homo sapiens* are capable of wisdom, perhaps, but most assuredly *Homo (*from *humus*, of soil or earth).

Astrophysicists inform us that the very elements of our being are stardust, exploded matter of ancient stars. Agronomists note that all life receives its nourishment from rocks ground slowly down to dust by ice and water and spread by the winds of time.

No less than ourselves, the soil that supports us is alive. A handful of good soil contains more living creatures than the grand total of human beings who have ever lived on the earth. We have names and understand the functions for perhaps 5% of these mostly invisible creatures—no matter whether they live in Costa Rican cloud forest or an Ohio backyard.

The most numerous of these creatures are the bacteria. Take a pinch of pristine forest soil: you hold about a billion of them, of perhaps one million distinct species, communicating and evolving so swiftly that they outwit our antibiotic strategies. They invented recycling, photosynthesis, and genetic engineering. As Stephen Jay Gould admits, they "rule the earth."

> Your same pinch of soil may also contain thousands of wispy root hairs and several miles of mycorrhizae—networks of microscopic fungus threads interdependent with the roots of plants, drawing polysaccharide energy from them and in turn enabling them to absorb phosphorus, nitrogen, other nutrients, and water. All terrestrial ecosystems depend on this underground "web that holds it all together" (Snyder, p. 129). Without mycorrhizae, which extend a plant's root system by 1000% or more, most plants could not have emerged from the water, to thrive on "dry land." Either by themselves or combined with algae as lichens, fungi are indispensable to the creation of soil and evolution of life.



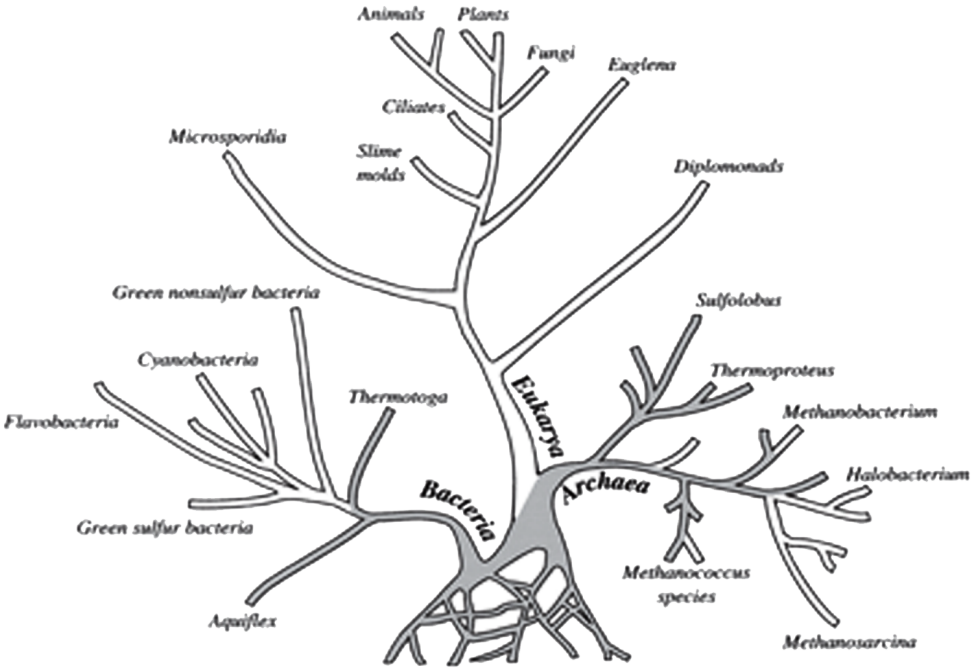

We are equally dependent on the lowly roundworm, which endlessly ingests, turns over, and fertilizes virtually every crumb of soil on earth. Tiny nematode worms account for four out of every five animals on earth. In a square meter of soil, there may be as many as ten million of them. In that same space, we might find a billion protozoa, hundreds of thousands of springtails and mites, and thousands of arthropods—insects with jointed legs--some of them so tiny that 20 or 30 might dance within the period at the end of this word.

*Hidden, too, beneath our feet is the radical life of plants. Their roots support them—and us. Prairie grasses and flowers—such as (1) prairie dropseed grass; (2) prairie dock; (3) big bluestem grass; (4) pale purple coneflower—foraged far beneath the surface to form the deep, rich "breadbasket" soil on which we depend for grains and legumes. Such natives, unlike our exotic lawns (note the standard lawn grass on the left), are independent of chemical aids and sprinkling systems.*

Almost all these creatures are beneficent, even from our limited human point of view. Indeed, they may all be indispensable, to the life of soil, the life of plants, and thus the community of life on earth. Bacteria transform inert atmospheric nitrogen into nutritious ammonium in return for nodular protection from predators. Fungi transport water and mineral nutrients to roots of plants in return for sugars; they also transport sugars and nutrients from plants with surplus to plants or other fungi that are deficient. Unless

predator protozoa and nematodes feed on bacteria and fungi and then excrete nutrient-rich poop, plants can't access the nutrients present in the soil. Plants actively push sugars into the soil, to attract bacteria and fungi. Bacteria themselves share out genetic material and information through what amounts to a worldwide superorganism—in something like an intertribal potlatch.
Virtually all organisms are both takers and givers; they practice the "law of return," part of the great cycle of life and death. They take from their neighbors and partners whatever they require in order to realize their potential, and they return—give back—what their successors and partakers require. In competing, they mutually discover and invent their own unique niches and processes, thus reducing energetic competition and fostering energy-saving cooperation.

In soil ecology, the process culminates in humus, the relatively stable end-product of countless ingestions, decompositions, and excretions of organic plant and animal material by fungi, bacteria, protozoa, earthworms, nematodes, and arthropods. Wendell Berry marvels over the formation of organic humus as "the chief work of the world." Often characterized as the life-force of the soil, humus stores and slowly releases carbon and nutrients, holds up to 90% of its own weight of water, circulates oxygen, suppresses disease, resists erosion, and enables formation of good soil structure, ideal habitat for the very creatures who cooperated to form it, thus creating the conditions for their own survival—and ours.




THE UNIVERSAL TREE OF LIFE, as developed by Dr. Carl Woese using genetic sequencing data, divides all life on earth into three "superkingdoms," two of which are microbial—the bacteria and archaea. (The shaded area represents heat-loving microbes.) The animals, usually prominent in a five-kingdom "tree of life," appear here as rather minor, slender "twigs" from the Eukarya branch. The profound implications of the "Woesian revolution"—showing most of earth's biodiversity (and biogenesis) as microbial—are not yet fully comprehended. Illustration by Tamara Clark

With a modicum of science and a little imagination, we can view our own bodies as habitat, designed and organized over countless millennia as shelter, reservoirs, and food sources, by the microbes that colonize us and, in return, keep us alive. We are inheritors and beneficiaries—along with soil, sunflowers, beetles,

and dolphins—of 3.5 billion years of microbial exploration and discovery.

The disheartening part of this long, miraculous story is that in the last few centuries we have been busily destroying the very body of the soil and our own bodies with our chemical fertilizers, our pesticides, our deep tilling, our monocultures, our failure to return plant residues to the soil, and the anthropogenic warming of the planet—a warming which breaks down humus and releases carbon dioxide in a prime instance of positive feedback. Not very long ago in our brief history as a species, we lost the wisdom of our ancestors—still preserved among some indigenous peoples—the cultural memory of how to live in harmony with the ground of our being.

Fortunately, the lost intelligence we seek to recover, the secret to restoration of the lost garden, is still alive and breathing. Accessible within minutes, it persists in small patches of earth, harboring an astonishing remnant of wilderness and its self-regulating intelligence, enough to serve as basis for regeneration.
In our own bodies, remnants of the most ancient life forms are virtually immortal: bacteria, mitochondria, and other tiny organisms, subsumed by our cells and ourselves. Each of us is an ecosystem, a community of life, akin to that handful of soil with its billions of living creatures. Like the soil, our very bodies carry the memory and recapitulation of everything that ever was. As the founder of modern chemistry, Antoine Lavoisier, observed over 200 years ago, "Nothing gets lost. Nothing is created. Everything transforms." Or, as his fellow victim of the French Revolutionary guillotine, Marie Antoinette, Queen of France and Navarre, observed, "There is nothing new except what has been forgotten."

Every species and every community of species is a unique form of cosmic memory, held, repaired, reproduced, and continually transformed by genes and enzymes inherited from the most ancient forms of life and shared out among all creatures—microbes, grasses, elephants, rattlesnakes.

Our body remembers; it knows what to do when we do not. The soil has its own intelligence; it remembers how to recover when we abuse and degrade it. Indigenous communities retain ancient wisdom, enough to provide for recovering from centuries of repression and for living more fully according to their "original instructions." Communities of scientists—ethnobotanists, ecologists, biochemists, even quantum physicists—are helping us remember and regenerate what we have forgotten, ancient wisdom and practice of living in harmony with the earth.

Can we be silent long enough to hear and respond to voices that call to us from deep within our own bodies? Can we attune our ears to the harmonies of the land, drowned out as they often are by dissonances and cacophony of our techno-civilization?

Let us hope that if we keep our ears to the ground, we may yet hear what Lynn Margulis calls "earth's sentient symphony" and Lewis Thomas "the music of *this* sphere." By harmonizing with the music of the soil and by cooperating with its intelligence, we may yet become wiser and restore our bodies, and our souls. Eden, the unfallen world, endures and is continually renewed in the very dust of the native soil we repeatedly seek to shake from our restless feet. Stop. Take a stand wherever you are.

Practice mindfulness, and do no harm: preserve as much as possible of what remains. Then, seek to restore. Begin with your yard and garden. Continue with the grounds of the school, the meeting, the church, a garden in the park, a vacant lot, an abandoned field, your neighborhood.

Grow as much as possible of your own food. Support the local farmers and indigenous peoples who seek to recover—and improve—ancestral wisdom and practice. Learn the flowers and grasses that evolved in this place where you live. Bring them back, and the creatures that co-evolved with them will be fostered and revived—yourself as well. The spirit and the memory of earth will be manifest. In this faith, in this

work of hearts and hands, the world is “all alive” and “every particle of dust breathes forth its joy” (William Blake, *Europe*, 1794).

## 2. CLEANSING AND SELF-REGULATING PROCESSES OF THE SOIL: TWO AMERICAN TRANSCENDENTALIST PROPHETIC VOICES

### from “THIS COMPOST” by Walt Whitman (1819-1892)

Behold this compost! behold it well!
Perhaps every mite has once form'd part of a sick person--yet behold!
The grass of spring covers the prairies,
The bean bursts noiselessly through the mould in the garden,
The delicate spear of the onion pierces upward,
The apple-buds cluster together on the apple-branches,

The resurrection of the wheat appears with pale visage out of its graves,
The tinge awakes over the willow-tree and the mulberry-tree,
The he-birds carol mornings and evenings while the she-birds sit on their nests,
The young of poultry break through the hatch'd eggs,
The new-born of animals appear, the calf is dropt from the cow, the colt from the mare,
Out of its little hill faithfully rise the potato's dark green leaves,
Out of its hill rises the yellow maize-stalk, the lilacs bloom in the dooryards,
The summer growth is innocent and disdainful above all those strata of sour dead.

What chemistry!
That the winds are really not infectious,
That this is no cheat, this transparent green-wash of the sea which is so amorous after me,
That it is safe to allow it to lick my naked body all over with its tongues,
That it will not endanger me with the fevers that have deposited themselves in it,
That all is clean forever and forever,
That the cool drink from the well tastes so good,
That blackberries are so flavorous and juicy,
That the fruits of the apple-orchard and the orange-orchard, that melons, grapes, peaches,
plums, will none of them poison me,
That when I recline on the grass I do not catch any disease,
Though probably every spear of grass rises out of what was once a catching disease.

Now I am terrified at the Earth, it is that calm and patient,
It grows such sweet things out of such corruptions,
It turns harmless and stainless on its axis, with such endless successions of diseas'd corpses,
It distills such exquisite winds out of such infused fetor,
It renews with such unwitting looks its prodigal, annual, sumptuous crops,
It gives such divine materials to men, and accepts such leavings from them at last.

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Originally published in *Leaves of Grass* 1856 as "Poem of Wonder at The Resurrection of The Wheat."

## 3. THE "LIVER, LIGHTS, AND BOWELS" OF THE EARTH
## by Henry David Thoreau (1817-1862)

When the frost comes out in the spring, and even in a thawing day in the winter, the sand begins to flow down the slopes like lava. Innumerable little streams overlap and interlace one with another, exhibiting a sort of hybrid product, which obeys half way the law of currents, and half way that of vegetation. As it flows it takes the forms of sappy leaves or vines; or you are reminded of coral, of leopards' paws or birds' feet, of brains or lungs or bowels, and excrements of all kinds. It is a sort of architectural foliage more ancient and typical than acanthus, chiccory, ivy, vine, or any vegetable leaves. The various shades of the sand are singularly rich and agreeable, embracing the different iron colors, brown, gray, yellowish, and reddish.

The whole bank, which is from twenty to forty feet high, is sometimes overlaid with a mass of this kind of foliage. You find thus in the very sands an anticipation of the vegetable leaf. No wonder that the earth expresses itself outwardly in leaves, it so labors with the idea inwardly. The atoms have already learned this law, and are pregnant by it. The overhanging leaf sees here its prototype. The feathers and wings of birds are still drier and thinner leaves. The whole tree itself is but one leaf, and rivers are still vaster leaves whose pulp is intervening earth.

You here see perchance how blood-vessels are formed. It is wonderful how rapidly yet perfectly the sand organizes itself as it flows. Such are the sources of rivers. What is man but a mass of thawing clay?

Thus it seemed that this one hillside illustrated the principle of all the operations of Nature. This phenomenon is more exhilarating to me than the luxuriance and fertility of vineyards. True, it is somewhat excrementitious in its character, and there is no end to the heaps of liver, lights, and bowels, as if the globe were turned wrong side outward. This is the frost coming out of the ground; this is Spring. It precedes the green and flowery spring, as mythology precedes regular poetry. There is nothing inorganic. These foliaceous heaps lie along the bank like the slag of a furnace, showing that Nature is "in full blast" within. The earth is not a mere fragment of dead history, stratum upon stratum like the leaves of a book, to be studied by geologists and antiquaries chiefly, but living poetry like the leaves of a tree, which precede flowers and fruit,--not a fossil earth, but a living earth; compared with whose great central life all animal and vegetable life is merely parasitic. You may melt your metals and cast them into the most beautiful moulds you can; they will never excite me like the forms which this molten earth flows out into.

--Edited from "Spring," Chapter XVII of *Walden* (1854)

# 4. THE SOIL AND CLIMATE CHANGE

Human treatment of the soil is directly related to climate change. The soil contains three times as much carbon as does the atmosphere, five times as much as all plant and animal life. Land management—agriculture and landscaping—is the second largest contributor to carbon dioxide emissions on the planet.

Release of the soil's stored carbon into the atmosphere is largely the result of tilling. From the beginning of the Industrial Revolution to the year 2000, roughly one third of the total carbon added to the atmosphere came from plowing the world's soils, primarily in the American Great Plains, Eastern Europe, and China.

The good news is that agriculture is the only industry with the ability to transform itself from a net emitter to a net sequesterer of $CO_2$. Many farmers are already doing it, by following the three principles of conservation agriculture: minimal soil disturbance; cover crops and plant-residue retention; diverse crop rotations. Such practices employ nature's own methods to "farm carbon," feed rather than mine the soil, and restore the health of all its interdependent organisms—including us.

Rattan Lal, Distinguished University Professor of Soil Science and Director of the Carbon Management and Sequestration Center at Ohio State University, estimates that a 2% increase in carbon content of the earth's soils could offset 100% of all greenhouse gas emissions. Conservation and "carbon" farmers report gains far greater than that in just a few years. Indeed, if we achieved results as good as many carbon farmers report, we could offset all our current emissions of $CO_2$ on only 11% of the world's cropland (Ohlson, 232-33).

But it's not just farmers who can make a difference. The largest irrigated crop in the United States is turf grass—45 million acres, three times as much as second-place corn, and spreading by almost two million acres every year. At that rate, the total acreage of American lawns will soon be greater than the total 55 million acres of *all* irrigated crops in the U.S. The American lawn is fundamentally a vast industrial monoculture—irrigated, fertilized, herbicided, compacted, pesticided. In terms of soil life and resilience, not much better than a parking lot.

David Montgomery, University of Washington Professor of Geomorphology, began 15 years ago to apply the principles of conservation agriculture to his own yard. He increased the carbon content of his lawn from 1% to 4%, of his flower bed from 1% to 9% and from 1% to 15% in his vegetable garden. "Farmers and city dwellers alike," he affirms, can make a "huge difference in terms of carbon storage" (*Growing a Revolution*, 244).

The revolution we seek is at hand, and right beneath our feet: in our yards, our vegetable gardens, and the food we consume. The soil scientists and the local conservation farmers are providing us with a new understanding of ancient realities. The causes, effects—and solutions—of climate change are coming ever closer to home.

# 5. THE SOIL, FOOD, AND HEALTH

In 1905 Sir Albert Howard was sent to India as the official Imperial Economic Botanist. His mission: teach modern farming methods to India's primitive farmers. By 1910 he was persuaded the British Empire had it the wrong way around. The "supreme farmer," he concluded, was Nature. The "primitive" farmers of India and China passed his "supreme test": maintaining soil fertility over forty centuries of agricultural practices "almost as permanent as those of the primeval forest, of the prairie or of the ocean."

In short, their "age-old tradition" followed Nature's methods, as exemplified in a forest, where there are no monocultures; the soil is always protected; deep roots of perennials gather minerals from the subsoil; the "greatest care is taken to store the rainfall"; there is no waste because everything, including animal waste, is recycled; and, because the system as a whole is healthy, "crops and livestock look after themselves" without "vaccines and serums."

In his seminal works, *An Agricultural Testament* (1940) and *The Soil and Health* (1947), Sir Albert established the basic principles of organic agriculture and permaculture (permanent agriculture). His followers include such notables as Bill Mollison, Vandana Shiva, and Prince Charles.[1]

Fundamental to Sir Albert's vision was the health of the soil, which depended on the "Law of Return"—always giving back, or, in the words of Vandana Shiva, "growing food for the soil, not just commodities for the market" (*Soil Not Oil*, p. 127). "A soil teeming with healthy life," Sir Albert stated, "in the shape of abundant microflora and microfauna, will bear healthy plants, and these when consumed by animals and man, will confer health on animals and man."

Industrial agriculture has not heeded Sir Albert's vision. Instead, it has fulfilled his prophecy: "The soils of the world are either being worn out and left in ruins, or are being slowly poisoned." As Al Gore summed up in 2010, "Our soil is a planetary emergency." So is our food. In the past 40 years, 30% of earth's arable land has been lost to erosion. One quarter of the earth's land surface is threatened with desertification. The United Nations Food and Agriculture Organization estimates that the world has, on average, about 60 harvests left before we run out of arable land.

Meanwhile, industrial agriculture continues to degrade soil life and soil carbon. It supplies the deficiencies with pesticides, herbicides, and artificial fertilizer, further degrading soil health, the health of plant and animal food it produces, and the health of human beings, rendering us as dependent on supplements, poisons, and chemicals as the soil. The food-industrial complex is as great a menace as the military-industrial complex President Eisenhower warned us against decades ago.

How, in the face of impending catastrophe, shall we manage to feed and restore the health of nine billion people, not to mention sharing food and habitat with the rest of the creation? "Answer," responds Kristin Ohlson: "Let's begin by feeding our microbes." Observe Sir Albert Howard's Law of Return, which begins in gratitude. "Feed the soil and it will keep feeding us," affirms David Montgomery.

Let us better inform ourselves and others about the crisis, and act accordingly. Change the unproductive

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[1] See Mollison, *Permaculture* (1991, 2013); David Lorimer, *Radical Prince: The Practical Vision of the Prince of Wales* (2003), esp. pp. 87-96; The Prince of Wales, *Harmony: A New Way of Looking at Our World* (2010).

way we landscape our yards, our cities, our countryside. Support agroforestry, small organic farmers, farm markets, community gardeners. Join the "growing revolution." It begins at home. It begins with the soil under our feet. It's a matter of life and health. For the planet.

# Regenerative Actions: The Practice
## For Restoring the Soil, at Home and Beyond

Buy organically grown food. Try to avoid large-scale "factory organic," which substitutes deep, heavy-machine tilling for herbicide and thus compacts and destroys soil structure.

Buy locally grown food, directly from farmers at local markets when possible. It's mostly preferable to "factory organic" from Argentina—or California.

Grow as much of your own food as possible. Preserve it, the old-fashioned way.

Practice the Law of Return (and its corollary, the Gift-Exchange Economy). Composted food scraps and yard "waste" enrich the soil. Decaying leaves, twigs, and branches provide habitat, nourishment, water storage, and weed control. [Adjunct to this, a boxed quotation from Vandana Shiva.]

Practice no-till or minimal-till gardening. Use a garden fork to loosen soil; amendments will trickle down—don't spade or rake them in deeply. In general, favor low-tech, appropriate technology. Most complex machines save labor and spend life.

Plant perennials, not annuals, which don't have enough time to form soil structure and foster a complex soil food web, don't have deep roots, and generally require more water, energy, and care.

Plant flowers and even food crops that are native to your place. They co-evolved with the insects and the soil organisms. They're at home, and they provide a home.

Spare the fertilizer. It disrupts the gift-exchange cycle of sugars from the plants, nutrients from the soil organisms. Fertilized plants get lazy or "selfish."

Don't be an anti-biotic or an herbicide. In particular, avoid using glyphosate (Monsanto's Round-Up), which persists in soil and food, disrupts microbial communities, and acts as endocrine disrupter in very low concentrations (parts per trillion).

Recognize that most disease (including "weeds") is nature's way of restoring health by eliminating or diminishing the root cause—a monoculture, an impoverished soil, or a stressed organism (such as yourself).

Stay out of off-road vehicles. Stay on the paths, unless you're seriously searching for the Way and thus intent on getting lost. (Consult Rebecca Solnit's *Field Guide to Getting Lost* for directions.)

Enjoy the intertwined cycles of life, including the time of decay and passing.
Contemplate and practice being part of these cycles.

# Queries for Reflection and Action

1. **"Membership in a place** includes membership in a community"— Gary Snyder, THE PRACTICE OF THE WILD.

What "place" do you consider yourself to be a "member" of—or in? In how many senses are you a "member"? (You might want to consult an unabridged dictionary.) How does one become a member of a community?

What steps are you taking to enlarge and extend your community? To extend it so as to include more of the soil's body, the life beneath your feet?

2. **What sort of "front yard"** do you have? Begin by considering this quotation from Henry David Thoreau's "Walking" (it's in this essay that he says, "In wildness is the preservation of the world").

> Hope and the future for me are not lawns and cultivated fields, not in towns and cities, but in the impervious and quaking swamps. . . . I often think that I should like to have my house front on this mass of dull red bushes, omitting other flower plots and borders, transplanted spruce and trim box, even graveled walks. . . . Front yards are not made to walk in but, at most, through, and you could go in the back way.
>
> Yes, though you may think me perverse, if it were proposed to me to dwell in the neighborhood of the most beautiful garden that ever human art contrived, or else a Dismal Swamp, I should certainly decide for the swamp. How vain, then, have been all your labors, citizens, for me! . . .
>
> A township where one primitive forest waves above while another primitive forest rots below—such a town is fitted to raise not only corn and potatoes, but poets and philosophers for the coming ages.

What does your house "front" on? Is its frontage "made to walk in" or only "through"? Do you, in fact, "go in the back way"? Where does most of your outdoor living occur? Why?

What does your "front yard" offer for the delight or contemplation of the "poets and philosophers for the coming ages"? What does it offer for the community of creatures you are a part of? What more could it offer?

# Visionary Activities

## 1. Revealing "The Little World Hidden Beneath"

**EDWARD O. WILSON**, who studies and loves the small creatures of the earth, says he rarely can resist turning over a rotting log to reveal "the little world hidden beneath." He relishes the rich smell, "like a perfume to the nostrils that love it." He enjoys tracing the fine threads of rootlets and fungi, the revelation of "secret lives," this "ancient wilderness" suddenly brought to life ("Prologue: a Letter to Thoreau," *The Future of Life*, xv-xvi).

Share in Wilson's pleasure on your next outing. What organisms can you observe in the first few seconds after you turn the log? What do you find if you probe the decaying wood and the soil beneath with a knife blade or stick? What are the signs that the log is lapsing back to soil again? What are the causes—the agents—of this recycling?

## 2. Taking a Handful of Earth

**STEP OUTSIDE** with a few friends, gather in a circle, and share this ancient Osage "Song of the Vigil," perhaps as a responsive reading.

The touching of the earth is an act divine—*Greetings*
The touching of the earth is an act divine—*Greetings*
The touching of the earth is an act divine—*Greetings*
*I have come—Greetings*
The touching of the earth is an act divine—*Greetings*

The digging into the earth is an act divine—*Greetings*
The digging into the earth is an act divine—*Greetings*
The digging into the earth is an act divine—*Greetings*
*I have come--Greetings*
The digging into the earth is an act divine—*Greetings*

Be aware that touching of the earth is mutual; as you touch the soil, it touches you.

Dig into some loose garden soil with both hands; take up a handful. Observe it closely as you sift through it. Sit quietly for a few minutes as you continue to hold the soil in your hands. What *is* this that you hold? Who or what is greeting and being greeted?

George Washington Carver believed, "Anything will talk to you if you love it enough." Forget the questions. Wait in silence and meditate on the soil. Listen, with all your senses.

Later, after you've broken the silence and risen, reflect on whether you received an answer. If you did, try to share your answer with your friends—in words or in whatever manner seems appropriate and possible.

## 3. Observing Soil Action

**AS FRANCIS HOLE OBSERVES**, "The soil is a slow-motion sea that gradually devours whatever it can." Whatever it devours, it also transforms. On a walk in the city, observe instances of soil reclaiming and recovering its lost realm: sidewalks and paths, pavements, dead or hollow trees, fence posts, roofs, lost and discarded objects. What are the agents of these transformations?

## 4. Walking on the Earth

Generations have trod, have trod, have trod,
And all is seared with trade, bleared, smeared with toil;
And wears man's smudge and shares man's smell: the soil
Is bare now, nor can foot feel, being shod. —Gerard Manley Hopkins, "God's Grandeur"

Yes. Feet on earth. Knock on wood. Touch stone. Good luck to all.
—Edward Abbey, *Desert Solitaire*

Wherever you may be on this earth, take off your shoes. You are standing
on holy ground. —Elizabeth Watson, "Your God Is Too Small"

In your yard, or in a natural area, take off your shoes. Feel the soil, the duff, leaf litter, twigs, mosses, lichens, downed wood (let us hope you have all these things abundantly in your own yard, to harbor and provide food for creatures, and to enrich your soil and your life). Work your bare feet down into decaying vegetation, microbes, invertebrates, sand and loam and clay. Touch the earth, and let yourself be touched by it. Let your feet be your intelligence.

# Communal Prayers and Responsive Readings

Nature's method involves reciprocity, exchange—a process of both receiving and giving back. Gratitude is the prime motion of acknowledging the gift and observing the Law of Return.

We conclude with two offerings of praise for the giver and thanksgiving for the gift. As you recite or meditate upon them, hold in mind that the ancient image underlying the word Law (both *lex* and *logos*) is a communal "gathering of acorns" scattered upon earth by oak trees. (From Robert Pogue Harrison, *Forests: The Shadow of Civilization* (1992), p. 35.)

## Excerpt from ***Canticle to the Sun*****,** by St. Francis of Assisi

Be praised, my Lord,
For all your creatures,
And first for brother sun,
Who makes the day bright and luminous.

And he is beautiful and radiant
With great splendor,
He is the image of you, Most High.

Be praised, my Lord,
For sister moon and the stars,
In the sky you have made them brilliant
And precious and beautiful.

Be praised, my Lord, for brother wind
And for the air both cloudy and serene
And every kind of weather,
Through which you give nourishment
To your creatures.

Be praised, my Lord, for sister water,
Who is very useful and humble
And precious and chaste.

Be praised, my Lord, for brother fire,
Through whom you illuminate the night.
And he is beautiful and joyous
And robust and strong.

Be praised, my Lord,

For our sister, mother earth,
Who nourishes us and watches over us
And brings forth various fruits
With colored flowers and herbs.

# Excerpts from ***Thanksgiving Address of the Haudenosaunee*** (Iroquois)*

## *Greetings to the Natural World*

### The People

Today we have gathered and we see that the cycles of life continue. We have been given the duty to live in balance and harmony with each other and all living things. So now, we bring our minds together as one as we give greetings and thanks to each other as People. *Now our minds are one.*

### The Earth Mother

We are all thankful to our Mother, the Earth, for she gives us all that we need for life. She supports our feet as we walk about upon her. It gives us joy that she continues to care for us as she has from the beginning of time. To our Mother, we send greetings and thanks. *Now our minds are one.*

### The Plants

Now we turn toward the vast fields of Plant life. As far as the eye can see, the Plants grow, working many wonders. They sustain many life forms. With our minds gathered together, we give thanks and look forward to seeing Plant life for many generations to come. *Now our minds are one.*

### The Enlightened Teachers

We gather our minds to greet and thank the enlightened Teachers who have come to help throughout the ages. When we forget how to live in harmony, they remind us of the way we were instructed to live as people. With one mind, we send greetings and thanks to these caring Teachers. *Now our minds are one.*

### The Creator

Now we turn our thoughts to the Creator, or Great Spirit, and send greetings and thanks for all the gifts of Creation. Everything we need to live a good life is here on this Mother Earth. For all the love that is still around us, we gather our minds together as one and send our choicest words of greetings and thanks to the Creator. *Now our minds are one.*

### Closing Words

We have now arrived at the place where we end our words. Of all the things we have named, it was not our intention to leave anything out. If something was forgotten, we leave it to each individual to send such greetings and thanks in their own way. *And now our minds are one*.

*This translation of the Mohawk version of the Haudenosaunee Thanksgiving Address was published in 1993, and provided courtesy of Six Nations Indian Museum and the Tracking Project. All rights reserved. English version: John Stokes and Kanawahienton (David Benedict, Turtle Clan/Mohawk). For the full text, see <nmai.si.edu/environment/pdf/01_02_Thanksgiving_Address.pdf>.

The Thanksgiving Address reminds you that you already have everything you need.

--Robin Wall Kimmerer, *Braiding Sweetgrass*

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# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 10

## A Land Ethic and Land Conservation

by Ruah Swennerfelt

### Purposes of this unit

1. To become better acquainted with the issues of care of the land and land conservation.
2. To explore the connections between the land and our spirituality.
3. To examine why conserving the land makes us better neighbors.
4. To look at ways we can be active in land conservation.

### Sacred texts and other inspirational readings

*To the Lord your God belong the heavens, even the highest heavens, the earth and everything in it.*

—Deuteronomy 10:14

*Hear the word of the Lord, you Israelites, because the Lord has a charge to bring against you who live in the land: "There is no faithfulness, no love, no acknowledgment of God in the land. There is only cursing, lying and murder, stealing and adultery; they break all bounds, and bloodshed follows bloodshed. Because of this the land mourns, and all who live in it waste away; the beasts of the field and birds of the air and fish of the sea are dying."*

—Hosea 4:1–3

*"Woe to you who add house to house and join field to field till no space is left and you live alone in the land."*

—Isaiah 5:8

### Hymns and songs

O God of All Creation. *Worship in Song, A Friends Hymnal*, # 18.
Earth Was Given as a Garden. *Worship in Song, A Friends Hymnal*, #307.

### Issue Presentations

## Article 1

## A Land Ethic

by Ruah Swennerfelt

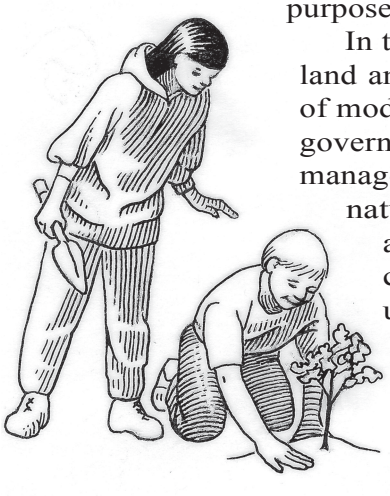
OUR RELATIONSHIP to the land has changed dramatically over the last 100 years. Most people today do not have a personal relationship with the people who grow the food that they eat. Many of us do not even think about where our food comes from or how it was grown. Even fewer of us think about the health of the land as something that is affected by our own personal behaviors.

I feel lucky to have lived in the same place since 1991. That's the longest I've ever lived in the same home in all my life. And I don't think the fact that I lacked geographic roots for most of my life is unique. Increasingly in today's world, physical mobility is viewed as the road to financial success. Although during my youth I went camping in the summers, I didn't develop a

sense of personal relationship to the land. I loved the outdoors, but it still was a distant relationship.

Barbara Kingsolver says it so well: "Modern American culture is fairly empty of any suggestion that one's relationship to the land, to consumption and food, is a religious matter. But it's true; the decision to attend to the health of one's habitat and food chain is a spiritual choice. It's also a political choice, a scientific one, a personal and a convivial one. It's not a choice between living in the country or the town; it is about understanding that every one of us, at the level of our cells is mindful of the distance between ourselves and our sustenance."

Today I grow vegetables and flowers as much for the food and beauty as for the spiritual sustenance I receive from the intimate relationship I have with the wonderful place where I live. I care about the health of the soil. When I am feeding the birds and maintaining good habitat for wildlife, I feel a connection I never had before. I watch each season change with the length of day/night and angle of the sun. I have learned to identify many of the trees and wild flowers in my neighborhood by name. I spend time outdoors without a practical purpose, only a desire to take notice of what is around me.



In the first half of the 20th century, Aldo Leopold wrote of his love of the land and his concern for its future. Some have called Leopold the founder of modern ecology. In his early professional life, he worked for a government conservation program that practiced linear, scientific management of natural resources. In time he came to realize that human interventions are very often more disruptive than helpful, because the extreme complexity and dynamism of the natural world cannot be adequately understood by the intellect alone. In his later years, he wrote *A Sand County Almanac*, a journal of his experiences and insights on a farm in Wisconsin, arguing persuasively for a land ethic based on a caring, rather than exploitative, relationship with the land. His prophetic writing foretold of the loss of habitat and soils that were then and now are occurring in North America:

> Harmony with the land is like harmony with a friend; you cannot cherish his right hand and chop off his left. That is to say, you cannot love game and hate predators; you cannot conserve the waters and waste the ranges; you cannot build the forest and mine the farm. The land is one organism.
>
> Conservation is getting nowhere because it is incompatible with our Abrahamic concept of the land. We abuse the land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect. That land is a community is the basic concept of ecology, but that land is to be loved and respected is an extension of ethics to this element in human environment is, if I read the evidence correctly, an evolutionary possibility and an ecological necessity.
>
> The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land.
>
> This sounds so simple: Do we not already sing our love for and obligation to the land of the free and the home of the brave? Yes, but just what and whom do we love? Certainly not the soil, which we are sending helter-skelter downriver. Certainly not the waters, which we assume have no function except to turn turbines, float barges, and carry off sewage. Certainly not the plants, of which we exterminate whole communities without batting an eye. Certainly not the animals, of which we have already extirpated many of the largest and most beautiful species. A land ethic of course cannot prevent the alteration, management, and use of these 'resources,' but it does affirm their right to continued existence, and, at least in spots, their continued exist- ence in a natural state.
>
> In short, a land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it. It implies respect for fellow members, and also respect for the community as such.

## Caring for the land and for the people

ANN KRIEBEL, a graduate of Westtown School ('73) and Earlham College ('77), traveled to Costa Rica in the early 1980s to live and work in the Quaker community in Monteverde. While there, she served as a volunteer in the San Luis Valley, a farming area about a one-hour walk downhill from Monteverde. Ann made this trek almost daily to help provide a community education program in literacy, health care, nutrition, and the environment. While working there, Ann died unexpectedly, but her life continues as an inspiration to so many today.

In her honor, and in the spirit of the 1992 U.N. Conference on the Environment and Development, Quaker Earthcare Witness is supporting a project in sustainable agriculture for land- less farmers living close to the Monteverde biological reserves—a blending of nature preservation, conservation agriculture, and human services.

Between 1993 and 1999, working with the Santa Elena Cooperative, Quaker Earthcare Witness members and other individuals contributed funds to purchase 122 acres called *Finca la Bella* (the Beautiful Farm).

Since 1995 a representative commission has established policy and provided oversight for the farm. Commission members now come from local groups, including the *La Bella* farmers' association, Monteverde Friends Meeting, and the Monteverde Institute, which is dedicated to education for a sustainable and peaceful future.

*Finca la Bella* has been busy over its short lifetime, inspiring all of us with a vision of environmentally sustainable and peaceful work. On these 122 acres, 24 previously landless families (called *parceleros*) have 25-year renewable leases on two-to four-acre parcels. About a third of the farm is preserved in forest. *Parcelero* farmers use hand cultivation, have minimized or eliminated chemical use, and have planted many windbreaks. Farmers have attended courses on organic agriculture, accounting and marketing, biodynamic agriculture, organizational dynamics, tourism, and guiding. A grant-funded nursery produces native fast-growing trees for wind- breaks, fruit trees, and forest trees for birds like the quetzal. These seedlings are primarily for on-farm use, but some are sold for conservation projects.

This is truly an example of caring for the land and for the people. Quaker Earthcare Witness hopes that *Finca la Bella* will be an inspiration for many more such projects.

## In conclusion

HOW CAN WE develop a land ethic that becomes second nature to our daily thinking? We need to first develop a relationship with the place where we live, whether that is in the middle of the city or in the wild. The land is below us, supporting us, and we are in relationship with the land whether we acknowledge it or know it or not. We need to learn more about that land, how it was formed, what was there before us, and how it has changed. We can then ask what the land needs and include the land in our worship and prayers. In time, we may even come to know that we and the land are one. ❖

## Article 2

# Land Conservation—a Christian Perspective

by Kara Unger Ball

(Reprinted with permission, *Creation Care, A Christian Environmental Quarterly*, Summer 2003, Issue No. 22)

THOSE OF US in the United States have been richly blessed with an abundance of land. We have over 3.7 million square miles of land and water through which the Lord provides us with food, fiber, fresh air and water, and our understanding of who we are as a nation. It is also home to God's other creatures.

A majority of the land in the U.S. is owned by private citizens. However, we are all citizens of our communities and, as Christians, we are citizens of God's kingdom. How, then, should Christians respond to land-use issues and to our responsibility to steward the land under our care?

Each day in America we are losing 8.6 square miles of our finest lands to development. At

this pace, many of the special places in America will be gone within 20 years. The conversion of farmland and other open spaces to development causes a host of environmental and fiscal problems. Since it costs $1.04 to $2.00 for every dollar of tax revenue brought in to provide services to a typical subdivision, current taxpayers end up subsidizing outsiders who typically bring increased traffic, crowded schools, and degraded environmental conditions.



The loss of habitat, habitat fragmentation, and introduction of exotic invasive species brought by development are the biggest causes of the loss of biological diversity in our country. We also hurt our neighbors by causing air pollution from driving more (see the Evangelical Environmental Network's "What Would Jesus Drive" website for the effects of air pollution on human health); polluting the water we send downstream to others through increased runoff and pollutants from construction sites, lawns, and impervious surfaces (hard surfaces such as parking lots and roads); and leaving fewer undeveloped places for others to enjoy. All of these diminish God's creation.

Land conservation organizations throughout the country work in response to these issues. There are over 1,200 land conservation organizations that have protected more than 6.2 million acres. As well, there are a host of land conservation organizations active abroad.

How do these organizations conserve land in the U.S.? Most important, they work with *willing* landowners on a voluntary basis. No land conservation organization can force a landowner to give up his or her land. A land conservation organization can focus on protecting habitat for God's other creatures, parks for human use, agricultural land, an historic feature, or a particular watershed. Whatever their objective, most [organizations] use the following basic protection methods:

- Own and manage—The land organization (also known as a land trust) buys the land and all the rights associated with it or accepts the land as a donation. The land trust then agrees to keep and manage the land in perpetuity (or "forever").
- Resell to a third party—The land trust buys the land, retains the development rights, then resells the land without the development rights to another buyer.
- Conservation easements—Owning land may be thought of as owning a "bundle of rights." A landowner may sell or give away the whole bundle, or just one or two of those rights. For example, a farmer might need his land only as a hayfield for cattle. A land conservation organization could then purchase the rights to construct buildings or subdivide the land, while the farmer keeps the land to use as a hayfield. The land organization would hold the development rights in perpetuity but never exercise them. The rest of the rights to the land would remain with the farmer, who can live on the land and sell it at will. The conservation easement would apply to all future owners, ensuring that the land will never be developed.
- Public policy—Land conservation organizations can promote public policies that support land conservation. For example, they can promote "smart growth" policies, tax incentives for land conservation, and education of citizens and lawmakers on the importance of their work. Many are also undertaking extensive community outreach and compatible economic development activities in order to reduce pressures on the land.

As Christians seeking to live out God's call to steward the land under our care and to love our neighbor through our land conservation choices, we can be active in several positive ways.

## Support land conservation organizations

LANDOWNERS as well as those who do not own land have opportunities to support the work of land conservation organizations. Most of these organizations are secular, giving Christians a wonderful opportunity to witness Christian care for creation in their interactions with the land trust community.

- Contact a land conservation organization to support their work or potentially protect your own land. Learn more about the needs and issues important in your area. (See the website of the Land Trust Alliance to find a land trust in your state, and visit the websites of "A Rocha" and "Eden" conservation organizations to learn more about two Christian land conservation organizations).
- Learn more about organizations that protect public lands (such as the Wilderness Society, National Parks Conservation Association.)
- Make personal choices that conserve land and do not contribute to sprawl.
- When choosing a home or place to live, seek a place that will allow you to use public transportation, to bike, or to walk to work. Select a place that has been redeveloped, as opposed to new subdivisions built on former farmland or open space.

## Be active in your local politics and zoning decisions

MANY LAND-USE DECISIONS are made locally throughout the country. Make your voice heard at local meetings. Support policies that curb "sprawl development." Support creative options such as neotraditional development that concentrate housing on smaller lots while leaving open space for parks and habitat, as well as options that mitigate negative impacts, for example substituting impervious (hard) surfaces that cause polluted water to enter streams and rivers with more porous options [such as gravel and turf] that allow water to soak back into the ground.

## Love and learn more about your neighbors

CHRIST COMMANDS US to "Love your neighbor as yourself." (Mark 13:31). Each of us affects people around us—our neighbors—by our land-use choices. Each of us can love our neighbor better by learning to make land-use choices that reduce harm to others. For example, by minimizing or eliminating the pesticides you put on your lawn, you can reduce the water pollution burden borne by those downstream. By reducing the amount of driving you do by living closer to where you work, you can reduce harmful air pollution. By refusing to buy a house that has displaced open space and by choosing instead a redeveloped or older neighborhood or a neo- traditional development, we help leave space for God's other creatures and open space for people to see the beauty of God's Creation.

## Practice sufficiency and contentment in your land use and housing choices

EACH OF US is consuming more land per person than ever before. As we continue to use more and more land to make bigger and bigger houses and more roads, we displace more and more of God's creatures. The Bible teaches that we are to practice contentment (1 Timothy 6:6–9, Hebrews 13:15) and provide for the creatures (Psalms 104:10–13). We can do this by seeking dwellings and lots no bigger than what we need.

Land conservation is a joyful way to glorify the Lord. Let us go forth and love God and neighbor by caring for the land.

## Questions for reflection

- Do I honor the life of all living things, the order of nature, the wildness of wilderness, the richness of the created world? Do I seek the holiness which God has placed in these things, and the measure of Light which God has lent them?
- Do I accept personal responsibility for stewardship of Creation? Does my daily life exemplify and reflect my respect for the oneness of Creation and my care for the environment?

- If I own land, do I respect the heritage of the land, exercising sound stewardship over its natural resources, so that they are maintained not just for my use, but for future generations?
- If a farmer or forester, do I seek to conserve and care for the soil, the water, and the wildlife habitat, so that my actions replenish, rather than deplete the land I work with?
- Do I treasure as sacred the whole of Creation?
- Am I encouraging my representatives and legislators—at the local, state and federal levels—to initiate programs and laws mandating appropriate land use?

Queries from North Carolina (Conservative) Yearly Meeting

- Am I encouraging my representatives and legislators—at the local, state and federal levels—to initiate programs and laws mandating appropriate land use?
- Do we sincerely seek to understand our place in the universe and our purpose here on the earth?
- Are we willing to make sacrifices and to ask others to join us in changing the things we use and the way we use them in order to preserve life everywhere?
- Are we willing to persist gently in persuading others, not giving up, but being receptive to others' needs, as we strive to establish life-styles dedicated to the preservation of all life?
- Are we open to the strength, the purpose, and the joy and the desire within and beyond ourselves as a resource in truly living in and genuinely loving the world?"

## Illustrative activities

### 1. Get to Know Your Neighborhood

1. Map out the land where your church or Meeting is. Is there land? Lawn? Flowers? Trees? What has your congregation done to be good stewards of that land? What more can you do?
2. As a group, take a walk around the neighborhood near your church or meeting. Take notes about what you observe. Are there open spaces? Will they be there a generation from now? Are there trees? Birds? Wildlife? Are there ways that your congregation can get involved to care for the land or neighborhood?
3. Locate land conservation organizations in your region and then find out what they are doing. Become involved with them corporately and individually.
4. Plant a garden. If you live in the city, try growing cherry tomatoes or herbs in a pot on your balcony or in a sunny window. Know the process of planting a seed and nurturing it and watching it grow.

### 2. Bioregional Quiz: Where Are You At?

(Reprinted from *Walking Gently into the 21st Century, a Sourcebook on Sustainability for Quaker Meetings,* compiled by the New England YM Friends in Unity with Nature Committee, July 2000.)

1. Can you trace the water you drink, from precipitation to tap?
2. What soil series are you standing on?
3. What was the rainfall in your area last year? (Guess within an inch and you get full credit.)
4. What were the primary subsistence techniques of the indigenous culture in your area?
5. Name five native edible plants in your region and their season(s) of availability.
6. From what direction do winter storms generally come in your region?
7. Where does your garbage go?
8. How long is the growing season where you live?
9. Name five grasses in your area. Are any of them native?
10. Name five resident and five migratory birds in your area.
11. What is the land-use history of where you live?
12. What primary ecological process influenced the land from where you live?
13. One point bonus: What's the evidence for your answer to 12?

14. What species have become extinct in your area?
15. What are the major plant associations in your region?
16. What spring wildflowers are consistently among the first to bloom where you live?

Your Score:

| | |
|---|---|
| 0 to 4 | Unlock your door and go outside. |
| 5 to 8 | You have a fairly firm grasp of the obvious. |
| 9 to 12 | You really pay attention. |
| 13 to 16 | You know where you're at (and where it's at). |

## Prayers and responsive readings

Most high, omnipotent, good Lord,
Praise, glory, and honor and benediction all, are Thine.
To Thee alone do they belong, most High
And there is no man fit to mention Thee.

Praise be to Thee, my Lord, with all Thy creatures,
Especially to my worshipful brother sun, the which lights up the day,
and through him dost Thou brightness give;
And beautiful is he and radiant with splendor great;
Of thee, most High, signification gives.

Praised be my Lord, for sister moon and for the stars,
In heaven Thou hast formed them clear and precious and fair.

Praised be my Lord for brother wind
And for the air and clouds and fair and every kind of weather,
by the which Thou givest to Thy creatures nourishment.

Praised be my Lord for sister water,
The which is greatly helpful and humble and precious and pure.

Praised be my Lord for brother fire,
By the which Thou lightest up the dark,
And fair is he and gay and mighty and strong.

Praised be my Lord for our sister, mother earth,
the which sustains and keeps us
and brings forth divers fruits with grass and flowers bright.

Praised be my Lord for those who for Thy love forgive
And weakness bear and tribulation.
Blessed those who shall in peace endure,
And by Thee, most High, shall they be crowned.

—from *The Writings of Saint Francis of Assisi*
translated by Father P. Robinson, 1906

*Creator of heaven and Earth,*
*We ask you to bless the land and all who dwell in it.*
*Open our hearts to see the love and beauty displayed in your creation.*
*Grant us wisdom in our stewardship of the land,*
*So that it can bountifully nurture all of your creatures.*

# Born of Water by Jack C. Ross

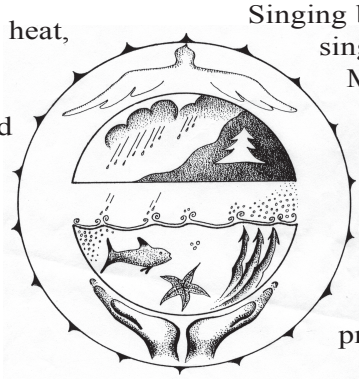
We are…born of water—cleansing, powerful, healing, changing. We are…

—sacred chant

*born of water—*

On the first day: God said, I think I shall put two atoms of hydrogen and one of oxygen together and see what happens. Hey, she thought, this is really cool. Then she made humans, and we messed it up.

July 8, 1921, my second day: blazing heat, bare hillside, Arizona sun. Mother kept me alive through the flu epidemic of 1921 with water-drenched blankets hung in the doorway.



Dad's job: chlorinate the Pasadena water supply; what caused my skin to bleach? Did cancer rates increase? I was proud to help Dad He wouldn't do anything wrong.

I was baptized but I kept on sinning anyhow. Water was not enough.

*cleansing,*

Diapers hand-washed in an iron pail: Love cleanses, water its instrument.

Swimming my favorite sport; nearly drowned twice—water, a stern master.

Argenta Creek water: dirtier after bathing than before.

Roll on, Columbia, roll on—pick up lead at Cominco, silt, the stray isotope at Hanford.

Dams—where have all the fish gone?

Family hikes to a shady mountain stream. Mom made sandwiches. We got one quarter of a Hershey bar each. Cool, clear, fresh water. Downstream: chlorination. Memories of water. Cleansing, powerful. Toxic?

*powerful,*

I can organize plan meet write memos press releases accounts console facilitate lick stamps collect money tell jokes do a clown act when the cops close in.

Stand in solidarity with my brothers and sisters. Risk jail.

I rely on Gandhi, John Woolman, some of the Bible. I can help people learn nonviolence. I can face the violent ones sometimes and help absorb their pain. I gave up masculinity and changed to human. And now I know how to cry. I think of Eloise Charet, fasting in jail, and I cry.

I go to jail without remorse. I shall try to endure it without fear or hatred, for the sake of water.

I do not hate my opponents for long.

Martin Luther King spoke to me once. I knew A.J. Muste, Bayard Rustin, Brian Wilson, Muriel Lester. The great people of peace have lifted my soul.

*healing,*

I cause pain even to my friends and family that I do not know how to heal. How can I heal the Earth? Teach me, o river.

Singing builds community. I really can't sing, but thanks for asking.

Me heal the Earth? Start with Perry Ridge and go on from there.

Mother Earth says: "I am your mother and not your maid. Now clean up your own mess. When you get your homework done then we can talk about using the car."

The jailers will check my fingerprints. I shall check my footprint.

*changing.*

While in Her Majesty's penitentiary I shall consider personal change:

1. *Try to find something to be penitent about*. It may impress them.
2. *Embrace paradox*. As a child I stepped on ants. Now I like to lift up a rock and speak to them. Once the river in Cleveland caught fire. How did they put it out? Margaret Mead said that only small groups ever change anything. But everyone changes things. Start with self. Peace is every step, but watch where you put your foot.
3. *Celebrate successes*. In 1988 I got a legal stay on the use of herbicides on some Kootenay highways. I liked to point to the flowers by the road and proudly say, "Me and God did that." And the rain. He needed me. Try to get a competent co-worker when you set out to change things. My Argenta friends stopped herbicide use in Lardeau Valley by persistent nonviolence.
4. *Learn prayer*. Prayer changes things. Attention is prayer. Silence is the first step to simplicity; simplicity the first step toward wholeness; wholeness is peace. Celebrate silence, grow in it toward wholeness. Where does the inner Light lead me?

*We are…born of water—cleansing, powerful, healing, changing. We are…*

*A member of Argenta, B.C., Friends Meeting, Jack was arrested in 1997 during a nonviolent protest against logging road construction in a sensitive watershed area.*

## Unit 10. A Land Ethic and Land Conservation

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# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 11

## Care for Water

by Mary Gilbert, with Sandra Moon Farley

### Purposes of this unit

1. To consider how water functions in the world God designed. This includes our own wateriness, the concept of the watershed, how water travels through Creation (the water cycle) and how much water there is.
2. To look at the world's water crisis.
3. To learn about the already-present trend towards the privatization of water.
4. To learn ways that Friends can make a difference.

### Sacred texts and other inspirational readings

*Thou dost visit the earth and give it abundance,*
*as often as thou dost enrich it*
*with the waters of heaven, brimming in their channels,*
*providing rain for men.*
*For this is thy provision for it,*
*watering its furrows, leveling its ridges,*
*softening it with showers and blessing its growth.*
*Thou dost crown the year with thy good gifts*
*and the palm trees drip with sweet juice;*
*the pastures in the wild are rich with blessing*
*and the hills wreathed in happiness,*
*the meadows are clothed with sheep*
*and the valleys mantled in corn,*
*so that they shout, they break into song.*

—Psalms 65:9–13

*There is a river whose streams gladden the city of God, which the Most High has made His holy dwelling.*

—Psalms 46:4

*The wretched and the poor look for water and find none, their tongues parched with thirst; but I the Lord will give them an answer, I the God of Israel will not forsake them. I will open rivers among the sand dunes and wells in the valleys; I will turn the wilderness into pools and dry land into springs of water.*

—Isaiah 41:17–18

*I will pour down rain on a thirsty land, showers on the dry ground; I will pour out my spirit on your offspring, and my blessing on your children. They shall spring up like a green tamarisk, like poplars by a flowing stream.*

—Isaiah 44:3–4

*On the last and greatest day of the festival Jesus stood and cried aloud, "If anyone is thirsty let him come to me; whosoever believes in me, let him drink." As scripture says, "Streams of living water shall flow out from within him."*

—John 7:37–38

*A draught from the water-springs of life will be my free gift to the thirsty.*

—Revelations 21:6

*Then he showed me the river of the water of life, sparkling like crystal, flowing from the throne of God and of the Lamb down the middle of the city's street. On either side of the river stood a tree of life….*

—Revelations 22:1

## Hymns and songs

These hymns praise the creation or use water as a powerful metaphor:

How Great Thou Art. *Worship in Song, A Friends Hymnal,* #8.
Many and Great, O God, are Thy Things. *Worship in Song, A Friends Hymnal,* #16.
Let All Things Now Living. *Worship in Song, A Friends Hymnal,* #46.
Joy Is Like the Rain. *Worship in Song, A Friends Hymnal,* #236.
Earth Was Given as a Garden. *Worship in Song, A Friends Hymnal,* #307.
I've Got Peace Like a River. *Worship in Song, A Friends Hymnal,* #246.
Peace Is Flowing Like a River. *Worship in Song, A Friends Hymnal,* #318.

## Issue presentations

### Article 1

# Water in God's Design

### We are watery beings.

THERE IS A STAR TREK SCENE in which the automatic translator renders the aliens' description of human beings as "ugly bags of mostly water." Well, ugly is in the eye of the beholder, but mostly water is true. And we're mostly at the same salinity as the ocean was when our remote ancestors were formed. We came from the ocean, and we could be said still to be carrying a lot of it around.

It is estimated that 3,400 cubic miles of water are locked within the bodies of living things on the earth. The average human adult is 75 percent water (babies are 90 percent, the elderly, 65 percent). We could estimate the volume of water in the room you are in with three math steps: First, figure what 75 percent of your weight is in pounds, approximately. Second, divide by 8 to tell how many gallons of water you contain. Last, add up everyone's totals. You can also work from kilos. Step one is the same, figure 75 percent. Each kilo equals a liter.

Water is awesome. It has unrelenting power. Look at the Grand Canyon, Yosemite National Park, Niagara Falls, hurricanes, and the world's great rivers.

Water is vital. Only air is more immediately necessary to survival. Without water in a liquid state, between zero and 100 degrees Celsius, life could not exist—at least not in forms we can imagine.

Water is beautiful. On the microscopic scale of snowflakes, or on the grand scale of towering clouds or vast oceans at sunset, or in a still lake reflecting back the world, we are moved to wonder.

Water can inspire us and help us to know God. Here is a story from one of us:

### I pour, I drink.

WOOLMAN HILL is a Quaker retreat center on a hill near the Connecticut River. At a Ministry and Council retreat there some years ago, I (Mary) spoke in worship, saying that it's through our physical participation in God's Creation that we each have our spark of divinity. At the end of worship, still trembling from obedience to my inward Guide, I made my way past the others, grabbed my jacket, and slipped out the door.

At the edge of a field I broke into a run. Across the field and into the woods and down the hill I ran, to a place where an earthen dam has been built across a stream to make a small pool. A little culvert allowed water to spill through and drop to the stones below, where the stream

continued on its way. When I got down there I was giddy and out of breath. As I stood watching the clear water fall and run on, I sang with the stream, pouring out wordless, joyful, sounds into the crisp air. Suddenly I wanted to drink from the sparkling water.

I couldn't reach it from where I stood, but thought perhaps I might from the other side. Not bothering to climb up and take the path across the dam, I made my way under the culvert, which protruded several feet into the air on the downhill side. It was March. It was muddy. It was hard to find dry places to put my feet. One place turned out not to be dry at all, and as I leapt away it kept my shoe. Crouching in my muddy sock I managed to retrieve my shoe with a stick and put it on. I laughed. At the end of the culvert I stretched out my cupped hand to catch the water. "Here we are," I said aloud to the water, to the earth, to the universe. "You pour, I drink."

And then a voice spoke. (I say "voice" and "spoke" because our language doesn't have the right words. There was no sound involved; what I heard appeared in my mind as if it had been spoken.) *"No, that's not quite right, dear."* I'm not sure those were the exact words, but that was their meaning.

"Huh?" I responded. "What?" And the voice continued its correction. This time I am sure of the words. There were four of them. *"I pour, I drink."*

I sipped the water. Quietly I turned, made my way up the bank and walked across the dam to where I had started. All the way up the hill I moved in a state of grace, knowing that while I am me, an ordinary human walking freely upon the earth, a person with thoughts and feelings and relationships and responsibilities, I am simultaneously an integral morsel of the body of the living Earth, the living cosmos, the living All-That-Is. It's almost what I had said in worship, but now it was different. I had *experienced* the mystery, just for a moment.

That moment will be alive for me for all my life.

## Questions for reflection

- Where have you witnessed the awesome power of rain, snow, water, or ice?
- When has the presence of water soothed your soul?
- How have you felt or seen or otherwise experienced the beauty of water?
- Has water ever tasted so foul that you didn't want to drink it? How did that make you feel?
- Have you ever savored the taste of water? What was that like?

## Watershed and water cycle

STATES AND PROVINCES were invented for convenience in governing. On maps we sometimes see rivers used as boundaries; other boundaries were drawn with a ruler. We see these maps so often; they tend to become *the* way we orient ourselves to place, even though they don't depict natural divisions of the land.

Now picture a rain cloud moving across a chain of mountains, gray sheets of rain falling onto the slopes, soaking in and trickling down into streams and rivers that run to the sea. Up on top of each mountain ridge something happens: Each drop that falls has to trickle down one side of the ridge or the other. If you could draw a line on a map indicating where all those "decisions" are made you would wind up with a very wiggly, natural outline of watersheds.

The watershed is a natural division of the land. Each has a river at its heart, but the concept is more inclusive. Underground water is part of the watershed. The plants and animals that live there are part of it. As we drink water and let it go when it has served its natural purposes, we too participate. As Freeman House said in the title of his article in the Winter 2004 issue of *Yes!* magazine: "A watershed runs through you."

A watershed has many lessons to teach. When we channel great rivers, we find that our work only increases flooding downstream, but in places where floodplains have been allowed to go back to being wetlands they act like giant sponges, releasing excess water slowly, over time. In a healthy system, soil and gravel clean the water that filters through them. So do plants: One mature tree next to a stream or lake can filter as much as 200 pounds of nitrate runoff per year.

There are different categories of underground water. Groundwater that circulates as part of the water cycle, feeding the aboveground rivers and lakes of a watershed, is called "meteoric water." (Think "meteorology.") In contrast, underground reservoirs known as "aquifers" flow incredibly slowly, if at all, by seeping through cracks and pores in the rock. Some aquifers are *very* slowly replenished by surface and meteoric water. It takes many, many years for water to seep down and recharge an aquifer, but many aquifers are closed systems. These do not flow and are not fed by meteoric water at all.

On a planetary scale, water operates as a closed system. This "hydrological cycle" can best be visualized three-dimensionally. Tony Clarke and Maude Barlow, in their book *Blue Gold*, explain that "…water circulates from the atmosphere to the earth and back, from a height of 15 kilometers (about 9 miles) above the ground to a depth of 5 kilometers (3 miles) below it. Water that evaporates from the oceans and water systems of the continents goes into the atmosphere, creating a protective envelope around the planet. It turns into saturated water steams, which create clouds, and when those clouds cool, rain is formed. Raindrops fall on the earth's surface and soak into the ground, where they become groundwater. This underground water, in turn, comes back to the earth's surface in the form of source points for streams and rivers. Surface water and ocean water then evaporate into the atmosphere, starting the cycle anew." The same water molecules go round and round, melting, freezing, evaporating, falling, participating in the existence of various life forms and passing on. During some epochs, more or less water has been frozen or in a gaseous state, but the amount of water on Earth is pretty much a constant.

## Questions for Reflection

- What watershed do you live in? What would a map of your watershed look like?
- Where does your drinking water come from, and where does your wastewater go?
- How do you participate in the life of your watershed?

## Water, water everywhere, but how much is to drink?

HOW MUCH WATER is there? A lot. If all the water on Earth were solidified into a cube each edge would be about 695 miles long, approximately twice the length of Lake Superior, or about 330 million cubic miles. (By comparison, Earth's atmosphere is only about 12 miles thick.) The amount of *fresh* water on Earth, however, is only about 2.6 percent of that total, and much of this fresh water is frozen in polar ice caps or buried in inaccessible caverns that do not participate in the water cycle. Only about 2.6 million cubic miles, or 0.77 percent, circulates rapidly enough to count as part of the water cycle. (Clarke and Barlow, *Blue Gold*)

But the fresh water we rely on for life is only replenished by rainfall, and only about 8,000 cubic miles of fresh water falls as rain and snow each year. If we were to rely on only the water that is replaced by rain, the amount of available-for-use fresh water each year would be less than one 400th of 1 percent of all the water on Earth. (Clarke and Barlow, *Blue Gold*)

Here is that same information in table form:

| Water category | Water volume (cubic miles) | Equivalent cube size (miles per side) | Percent of total water |
|---|---|---|---|
| All the water on Earth | 330,000,000 | 695 | 100.0 % |
| All the fresh water on Earth | 8,600,000 | 205 | 2.6 % |
| All water in the water cycle | 2,600,000 | 137 | 0.77 % |
| All annual rainfall (water replaced each year) | 8000 | 20 | 0.0024 % |

This finite amount of fresh water is all we and the rest of land-life can use, if we want to live sustainably. The human race has a choice: We can learn to use water carefully, keeping it clean and healthy, finding ways to be comfortable while using only the amount that gets replenished annually, or we can continue to tap into underground sources and use it up as fast as we like, squandering and polluting as we go. There are two problems with the latter option: 1) Polluting creates a major health hazard, for us and for everything else, and 2) the earth *will* run out of usable water.

## Questions for reflection

- In your own life, how do you use water wisely? How could you do better?
- On a societal level, how might these questions be answered for the watershed you live in?

## Article 2

# The Worldwide Water Crisis

THE WORLD is facing a global water crisis. The situation in many places is already dire. Around the world, surface water is being degraded, and ground water is being drawn down. Thirty-one countries already suffer from water scarcity, and an estimated 3.4 million people die each year from water-related diseases.

According to Marcia Brewster of the Division for Sustainable Development at the United Nations, 1.2 billion people currently do not have access to potable water. The U.N. has set an official goal of reducing that number by half by 2012.

Access doesn't mean water piped to the kitchen, Marcia explains. "We're not talking about everybody turning on the tap." Access is defined as 20 liters (5 gallons) a day per person, within a one-kilometer walking distance of the home.

How did this happen? In her introduction to the Winter 2004 issue of *Yes! A Journal of Positive Futures,* Sarah Ruth van Gelder writes, "Scarcity



"Woman carrying water in a jar near Alem Kitmama, northeast of Addis-Ababa, Ethiopia"—WHO/P.Virot.

is a human creation. It is not a condition of nature. Scarcity happens when water is wasted, polluted, diverted, or when climate changes faster than people can adapt. It's when water is "enclosed"—owned by some while others are excluded—that scarcity results. The solutions to water scarcity, though, are not global, but are to be found in each watershed—with its unique combination of geology, climate, culture and livelihoods—and in each community that must live with the consequences of decisions it makes. What is needed is ecological democracy, so that local folks, not distant corporations or development banks, choose solutions best suited to both meeting their needs and sustaining the resource."

In India and in Africa there are movements to replace "water mining" with a return to "water harvesting." Water harvesting involves catching and holding rainwater for use as needed, as is done by mountain farming communities, and with shallow village wells that tap into meteoric groundwater. Ideally, water harvesting leads to careful use of water and good maintenance of water delivery systems, balancing allowed use with the availability of the harvested water.

Water mining, on the other hand, involves sinking wells deep into underground water sources and pumping it to the surface for domestic, agricultural, and industrial use. This creates dependency on these sources and directs attention away from learning conservation practices.

When we grow thirsty crops in the desert, we are creating an infrastructure that depends on groundwater sources to produce at current and increased rates indefinitely. Here is an example from the United States: The Ogallala Aquifer is the largest single water-bearing unit in North America. It stretches from the Texas panhandle north to South Dakota and is estimated to contain about 4 trillion tons of water. It has few sources of replenishment; most of it has been locked deep underground for thousands of years. It is being mined at a rate of 13 million gallons a minute by over 200,000 wells irrigating 8.2 million acres of farmland—one fifth of all the irrigated land in the United States. When it runs out, which it will, farmers, shippers, and consumers dependent on this pumping could be in for a big surprise!

Mining groundwater has other consequences. One is that surface water sources dry up. As water is removed from below, a conical area with its point at the bottom of the well's tube and its wide place at the surface, goes dry. The deeper the well, the greater the surface area rendered dry. Another is that when water is removed from an aquifer near an ocean, seawater seeps in to replace the fresh water. People and animals can't drink this water, and it kills plants, so farming is destroyed. Making a well deeper to find more fresh water only exacerbates the problem. Third, if the water removed is not replaced by other water (either fresh or saline) the previously saturated rock becomes unstable, and sinks down or caves in. This has already happened in cities in Jordan, Mexico, and elsewhere.

## Questions for reflection

- How have you experienced shortage of water?
- How would your life change if family members of your household had to walk half a mile, or up to a kilometer each way, with jugs to fill for your drinking, cooking, bathing, and washing water? What would it be like to manage on 5 gallons a day per person?
- Have you ever been really, really thirsty? What happened? What was that like?

## Article 3

# Whose Water Is It? Water Privatization

SARAH RUTH VAN GELDER (*Yes!* magazine) asks, "Isn't it absurd to ask *whose water?* How can water be anyone's? There was water on Earth long before people, and there will be water long after we're gone. Trying to own water makes no more sense than owning love—it's the flow that matters. And yet corporations, the World Bank, and the U.S. government are pushing for the privatization of water, raising the spectre of people shut out from access to water for lack of enough cash to pay for it and the water corporations' profits."

## A. The Battle for Water

by Tony Clarke and Maude Barlow

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WE ARE TAUGHT in school that the earth has a closed hydrologic system; water is continually being recycled through rain and evaporation, and none of it leaves the planet's atmosphere. Not only is there the same amount of water on the earth today as there was at the creation of the planet, it's the same water. The next time you're walking in the rain, stop and think that some of the water falling on you ran through the blood of dinosaurs or swelled the tears of children who lived thousands of years ago.

While there will always be the same amount of water, we can render water unusable for ourselves and for the planet. The growing scarcity of potable water stems from a variety of causes. Per-capita water consumption is doubling every 20 years, more than twice the rate of human population growth, which itself is exploding. Technology and sanitation systems, particularly those in the wealthy industrialized nations, have encouraged people to use far more water than they need. Yet even with this increase in personal water use, households and municipalities account for only 10 percent of water use.

Industry claims 20 to 25 percent of the world's fresh water supplies, and its demands are dramatically increasing. Many of the world's fastest growing industries are water intensive. For example, in the U.S. alone, the computer industry will soon use over 396 billion gallons of water each year.

Nonetheless, it is irrigation that is the real water hog, claiming 65 to 70 percent of all water used by humans. Increasing amounts of irrigation water are used for industrial farming. These water-intensive corporate farming practices are subsidized by governments and their taxpayers, and this creates a strong disincentive for farm operations to move to conservation practices, such as drip irrigation.

Along with population growth and increasing per-capita water consumption, massive pollution of the world's surface water systems has placed a great strain on remaining supplies of clean fresh water. Global deforestation, destruction of wetlands, dumping of pesticides and fertilizer into waterways, and global warming are all taking a terrible toll on the earth's fragile water systems.

The world is running out of fresh water. By the year 2025, there will be 2.6 billion more people on Earth than there are today. As many as two thirds of those people will be living in conditions of serious water shortage, and one third will be living with absolute water scarcity. Demand for water will exceed availability by 56 percent.

### Water as a commodity

THE COMBINATION of increasing demand and shrinking supply has attracted the interest of global corporations who want to sell water for a profit. The water industry is touted by the World Bank as a potential trillion-dollar industry. Water has become the "blue gold" of the 21st

century.

The move to privatize water coincides with the rise of the Washington Consensus as the dominant world economic philosophy. This philosophy calls for trade and investment liberalization, and turning responsibility for social programs and resource management over to the private sector. In this case, it is an assault on the ancient commons of water.

Global trade agreements have become perhaps the most important tool for corporations trading in water and their allies. All of the multinational governing bodies, the North American Free Trade Agreement (NAFTA), the General Agreement on Trade and Tariffs (GATT), and the World Trade Organization (WTO), define water as a commodity. As a result, water is now subject to the same rules and regulations governing other commodities such as oil and natural gas. Under these combined international rules, a country cannot prohibit or limit the export of water without risking censure by the WTO. Nations are also restricted from denying the import of water from any country. NAFTA's "proportionality clause" means that if a country turns on the tap to export its natural resources, it cannot turn off the tap until it runs out of that resource.

In addition, the push to privatize water services will be greatly enhanced by new rules governing cross-border trade in services at the WTO, known as the GATS (General Agreement on Trade in Services). Under the proposed GATS rules, not only will governments face added pressures to deregulate and privatize their water systems, but once a city's water services have been taken over by a foreign-based corporation, efforts to take these services back into public hands will invite severe economic penalties under the WTO.

Leading the charge for privatization are three big transnational corporations based in Europe: Vivendi, Suez, and RWE. All three have systematically bought out smaller rivals to become the dominate powers in the business of water all over the globe. The long-range strategy of these companies began with their efforts to take over the public water systems in Third World countries, where they hoped to position themselves as the saviors of the water crisis. Instead, a series of private-sector fiascoes in the Third World derailed their plans.

The case of Buenos Aires is especially instructive. Buenos Aires was to be the flagship operation of Third-World water privatization. Suez, through its subsidiary Aguas Argentinas, took over the Buenos Aires water and sewage system in 1992. A common argument for privatizing water systems is that, unlike the cash-strapped public sector, the private sector has the capital necessary to update or refurbish aging water systems. But public sources like the World Bank, International Monetary Fund, and other smaller banks supplied 97 percent of the $1 billion necessary for the Suez privatization experiment. Suez did expand water and sewage service by a small increment, but failed to meet its projected targets in both areas. Nonetheless, the company managed to reap annual profits of around 25 percent in the mid-1990s. Recently, Suez announced that it plans to pull out of Argentina because the country's currency crisis has cut into its profits. There have been other private-sector fiascoes in places like Johannesburg, New Delhi, Manila, and most famously, in Cochabamba, Bolivia. *[See next section.]*

The effort to privatize Third World water systems has become a target of civil society protests. Representatives of an international civil society network appeared at a meeting of chief executive officers at the World Water Forum in Kyoto, Japan, in March. The group took over the

microphones and offered a series of testimonials about the impact of water privatization around the world. Toward the end of the event, a water activist from Cancun, Mexico, stepped to the microphone and held up a glass of pitch-black, putrid smelling water. He explained that he had taken the water from his home tap in Cancun, where Suez runs the municipal water system. He then requested that the moderator pass the glass of black, smelly water up on stage to the CEO of Suez, inviting him to drink it.

### Targeting First World water

THE BIG WATER COMPANIES are now changing their strategy and concentrating their operations and their investment on more secure markets in North America and Europe. Eighty-five percent of all water services in the U.S. are still in public hands. That's a tempting target for conglomerates like Suez, Vivendi, and RWE. Within the next 10 years, they aim to control 70 percent of water services across the United States.

They have positioned themselves to move aggressively. Vivendi, Suez, and RWE have bought up the leading U.S. water companies, U.S. Filter, United Water, and American Water Works, respectively. These water companies had largely serviced small towns and communities, but under the tutelage of the global giants they have become the engines for privatization in the United States.

When transnational water conglomerates take over a municipal water system, it feels like a local problem, but because the same corporate players are targeting communities all over the world, we must build alliances and connections, learn from one another, and start to build a frontal attack.

At the Polaris Institute, we propose a three-pronged strategy. First, develop a water-alert network so we can know where companies are operating and where they are going next. How are they going to move? And how can we get ahead of them?

Second, we need water-action teams that bring citizens together to build local water-watch coalitions and develop campaigns to protect their water supplies and services from conglomerates. Then we should link those local campaigns with the national campaigns of groups like Public Citizen or the Council of Canadians.

Third, we need to offer alternatives. It is not enough to say we want to defend our public water systems against private takeovers. There are problems with public water systems, and we must find new ways of revitalizing them in our own communities through citizen participation. Engaged citizens can act as watchdogs for their local water systems.

Our local actions should be informed by three global principles. One is water conservation. We cannot kid ourselves about water scarcity. Water may be abundant in one place, but it's scarce in others. Water conservation must be a top priority.

The second principle is that water is a fundamental human right. People need water to live. Water must be provided equitably to all people and not on the basis of the ability to pay.

The third principle is water democracy. We cannot leave the management of our most precious resource in the hands of bureaucrats in government or the private corporations, whether or not they are well-intentioned. We, the people, must preserve this special trust, we must fight for it, and we must take our proper role and demand water democracy.

*MAUDE BARLOW, national chair of the Council of Canadians, and TONY CLARKE, director of the Polaris Institute, are co-authors of* Blue Gold: The Corporate Theft of the World's Water. *This article is adapted from presentations made by the authors at the Water for Life conference in New York, September 2003, co-sponsored by* Resurgence *magazine and the Omega Institute.*

## B. The Cochabamba Declaration

WHEN A SUBSIDIARY OF BECHTEL took over water delivery services in Bolivia, water rates rose so high the poor were spending a major part of their income on water. The people of Cochabamba rebelled, mounted an uprising, and won! Here is their declaration. It poses exactly the alternative we need to focus on in our thinking, our organizing and our actions.

Here, in this city which has been an inspiration to the world for its retaking of that right through civil action, courage and sacrifice standing as heroes and heroines against corporate, institutional and governmental abuse, and trade agreements which destroy that right, in use of our freedom and dignity, we declare the following: "For the right to life, for the respect of nature and the uses and traditions of our ancestors and our peoples, for all time the following shall be declared as inviolable rights with regard to the uses of water given us by the earth:

1. Water belongs to the earth and all species and is sacred to life, therefore, the world's water must be conserved, reclaimed and protected for all future generations and its natural patterns respected.

2. Water is a fundamental human right and a public trust to be guarded by all levels of government, therefore, it should not be commodified, privatized or traded for commercial purposes. These rights must be enshrined at all levels of government. In particular, an international treaty must ensure these principles are non-controvertable.

3. Water is best protected by local communities and citizens who must be respected as equal partners with governments in the protection and regulation of water. Peoples of the earth are the only vehicle to promote earth democracy and save water.

## C. Defending groundwater in New Hampshire

HERE IS AN EXAMPLE of successful—so far—community resistance to treating water as a commodity. In the spring of 2001 Denise Hart, a member of Friends Meeting at Cambridge (Mass.) who lives in New Hampshire, became aware of a plan to mine and bottle local water for sale abroad. Mary Gilbert conducted the following interview with Denise on February 16, 2004:

Mary Gilbert: *I understand that a water bottling company has been trying to set up a plant near where you live in New Hampshire. What happened?*

Denise Hart: Over two and a half years ago United Springs of America, Inc., referred to locally as USA Springs, Inc., decided to start a water extraction and bottling business here on about 100 acres that is part of two towns and affects three watersheds. Their plan was to pump 439,000 gallons a day. Other water bottling companies in New Hampshire have been locally owned and draw much less water. The USA Springs plant would take more than all other New Hampshire bottled water withdrawals combined. A public hearing is required as part of the application process. I was volunteering in my town on the conservation commission at that time, and I wound up going to the hearing.

This is a very rural area where most of the businesses and homes rely on their own wells for water, so quite a few people were aware and concerned. Neighbors began to meet each other and hear each other give testimony at the hearing. It was a real learning experience, the beginning of an organized community response.

When I got home the night of the hearing I couldn't sleep. I was so astonished that a company could think it had the right to come in and do this. I had never thought of bottled water as an industry, I just thought drinking bottled water was a healthy thing to do when you're thirsty. I had a plastic container of water in the car that night. I still have that container. When I got home I just crumpled it, and it sits on my desk, a reminder that things are not always what they seem.

MG: *How did the community respond?*

DH: After the hearing, several groups began meeting independently, and they heard about each other through word of mouth. We had a meeting of about a dozen people, and that was the beginning of Save Our Groundwater (SOG). The administrative process, as set out by the state law, looked like it would take about three or four months, and we committed to work hard on stopping the USA Springs project. We didn't know what we were really in for!

SOG is an all-volunteer, non-profit grassroots action group dedicated to advocating that

groundwater be held in the public trust and protected for present and future generations of all life. Our website is: *www.saveourgroundwater.org*. SOG organized people to turn out for hearings. We kept the community going, told people where to send letters, who their legislators were. We do a lot of outreach work, giving talks at Rotary Clubs, Chambers of Commerce, schools, and so on. And there's always at least one class from UNH (the University of New Hampshire) at every regular SOG meeting, to learn about how we can conserve and sustainably use our freshwater supply.

MG: *What are the implications for your area, if the bottling plant goes forward?*

DH: That's difficult to answer. It's a very technical area and I'm not a hydrologist. I can tell you what has happened already. USA Springs had to do a pump test as part of their application, trying to extract the 439,000 gallons for 10 days. During this time VOCs (volatile organic compounds, which are hazardous waste) migrated from an adjacent site through the aquifer to the USA Springs site. We had known that was possible…. Rural people know where the "hot spots" are. There had been testimony about people's fear that the aquifer would get contaminated. One member of SOG had written to the Department of Environmental Services telling them in her own plain language that she was aware that a previous company nearby had dumped waste onto the ground, and documented her concerns for the record. Later this letter was brought to light. The company's lawyers and scientists kept saying nothing would happen, making people feel that we didn't know anything. It turned out we were 100 percent right.

The permit application is a long, arduous process, and the two towns have had to hire environmental attorneys. That's a big expense for places with populations of only about 6,000.

There is concern about potential adverse impact to the aquifer and the three watersheds involved, from long-term water extraction. Large groundwater extraction permits are issued for 10 years in NH. It takes thousands of years for groundwater to accumulate in an aquifer.

MG: *What about local impact from the World Trade Organization rules?*

DH: The company had said from the very first presentation and in the application documents that the plan is to sell the water overseas. That's where the WTO issue comes in. When something is traded to other WTO countries you cannot reduce trade levels. International treaty law is higher than state law. It supercedes federal law. Once it starts, it appears that there's no way to stop or reduce the pumping. An SOG member wrote to the U.S. Trade Representative, the person who handles WTO issues, and he wrote back saying this was a possibility.

MG: *What's the legal status of the project now?*

DH: The bottling company's application was sent in April or May of 2001, and the state denied their permit in August of 2003. The company put in an appeal, and it too was denied in mid-December 2003. The New Hampshire groundwater law that was invoked wasn't crafted with commercial water bottling in mind; it came about as a result of a dispute between municipalities. The law was written in a way that allows re-applications, and now the company has reapplied for a permit using all the same information as before. We don't know yet what that's all about.

MG: *I've heard about a network of freshwater organizations that help each other in situations like this. Has SOG had contact with them?*

DH: SOG is a member of the Water Allies Network, a new group that formed in November 2003. Water For All is a project sponsored by Public Citizen, and they have a very good website. What's happening is that groups are emerging in lots of places all at once, as they discover that their local water is under assault, so the connections are just getting going. Most of us never thought much about bottled water. We've been asked, "Is this a 'not-in-my-backyard' kind of thing?" And we say, "No!" We've been forced to learn about the international water situation, and we see what we are doing as part of the protection of water for all life, not just for our community.

MG: *How has all of this affected you as a Quaker? What does it all mean to you now?*

DH: I've accepted this as a leading at this point in my spiritual journey, but I didn't always. I had just left my job to follow another leading, to work on a book project about my family's experience with racism. This project had evolved over years. I had a clearness process with my Meeting about it, and I had my husband Michael's backing; I thought it would take about six or seven months to try to finish this book.

When the water situation came along it felt like a distraction from what I should be working on. But you can't write 12 hours a day, so I got involved. I felt very perplexed. I had never been in this situation before. I was very torn by the demands on my time. I really struggled. There have been very few times I've asked my Meeting to help me with discernment about a leading, but after the company tried to subpoena all our computer records and take us to court I did ask. Meeting with my clearness committee was very helpful. Two leadings at once? I couldn't see it. But it just didn't go away.

Then in September I gave a workshop about SOG at the Omega Institute in Rhinebeck, New York, where they leave room for the spiritual to be expressed. This work began to seem like an important part of my spiritual journey, particularly because of some of the other people there. On the last morning, when Satish Kumar said, "We must learn to think like water…." something in me changed about knowing how I wanted to go forward with this thing.

And in November, when I gave a talk about water in Miami at a WATER conference, I heard a member of the Indigenous Environmental Network say, "For me this is a spiritual issue. Water is our life, and I'm bound to protect it." I felt she was speaking for me.

This experience has been a challenge. I've had to do things I usually don't do and don't like doing. Like speaking in public; I had to learn to do that. I was really scared. And I had to learn a lot of leadership skills, to keep our organization going, getting people to care about the issue and find a sense of welcome. I had to learn how to testify before the state legislature.

I've come to see it not as just an environmental issue, boxed into a category, but as a broader spiritual issue. Water is life. Without water there is no life. Withholding water has been used as a tool of war throughout history. Control of water access has a role right now in the struggles in the Holy Land. Learning to share water, instead of selling it or using it as a tool of war, is an act of peacemaking. It's caring for something that all life depends on.

> Whose water? The answer may be one that is both simple and full of implications—water belongs to everyone and to no one. It is fundamentally a commons, which we all must care for, but which none of us can own. To paraphrase a famous Kenyan proverb, water is not inherited from our ancestors but rather borrowed from our children.
>
> —Sarah Ruth van Gelder

## Questions for reflection

- Do you know others, perhaps even yourselves, who have acted locally to protect a community water supply?
- If we see water as a commons, what steps do we need take to see that principle expressed as public policy?
- How is being active water advocates an expression of our faithfulness to God?
- Quakers have long been known for working to bring about changes for the common good. Has learning about the threats to fresh water led you to ask God if there is a task for you in the work of restoring the earth's water systems to the healthy balance that God created?

## Illustrative Activities

### 1. Know Your Watershed

### Preparation for group activity

1. The leader/facilitator should get a map of the local watershed. Small maps showing outlines of watersheds can be downloaded from: <*http://cfpub.epa.gov/surf/locate/map2.cfm*>. You can do a web search for a watershed map of your area with more detail. You can contact your local, state, or provincial water authority to get a map. You can get a topographical map and find the outline of your watershed yourself. These are available in many scales.

2. If the map is large enough the whole group can use it together. Depending on what you find, you might want to make enough copies for each person to have their own. Have on hand an ordinary map of the same area, for reference.

### Group activity

- Compare the maps to discover what townships or counties (whatever is most appropriate in your region) lie within the watershed.
- Label any water bodies on the watershed map, and draw in and label any small streams, ponds, etc. that people know of that are not on the map. Make it as detailed as the group can, without drawing in any roads, bridges, etc.
- On the map find and mark the locations of your church or Meetinghouse, and the homes of all the participants present.
- Create an oral history of your watershed by telling stories about your experience of, or knowledge about, any body of water on the map. "That's where we used to swim when I was growing up." "There used to be a sawmill on that stream; you can still see the foundations." "Back in the floodwater rose all the way to here." "Once that whole stream was dried up," etc. Of course, be more elaborate than these examples.
- Take some quiet time in which each person can imagine being a component of the life of the watershed (an animal, a plant, a pond etc.). What does it "see" and "feel"? Does it stay where it is or move downstream? Imagine a day in the life of that component and then, speaking in the first person, tell about your experiences that day.

### Questions about your watershed to which you might like to know the answers

THE LEADER might want to find out some of these things before the session, or the group might like to look into them as "homework."

- What civic agencies and voluntary groups are involved with the management and health of the watershed? Is there a Conservation Commission? A "Friends of the_____River?"
- Do people in your region rely on their own wells? If so, have they found any changes in their water quality or quantity lately?
- Do people get their water from municipal water systems? Who runs the systems? Are any aspects of it contracted out to private companies? When was the water delivery system put in? (i.e. How old are the pipes?) How are they maintained? Is leakage a problem? Is there lead contamination (currently a problem in Washington, D.C.)?
- Is there any water mining and bottling going on in the watershed? What effects has this had on water supply for well users? For agriculture? What would you have to do to find out?
- Are there any toxic waste sites in your watershed? Are they stabilized? Has toxic waste been moving into and through the groundwater? What would you have to do to find out?

## 2. "Who Polluted the Pond?"

THIS GAME was originally created by the Chesapeake Bay Foundation and called "Who Polluted the Potomac"? It has been adapted for Puddlestompers by Ellen Reed (and further adapted by Sandra Moon Farley).

Materials: Jug of Clean Water
Film canisters, each numbered and filled with the material indicated.

The narrative is set up for 12 items. If you have a large group, think of some other stuff that could get into the pond. If you have a smaller group, let some have a second film canister.

*Sometimes little things and big things happen to the pond that it cannot stop. It doesn't have arms that it can throw up in the air and a voice to shout "Stop!" The pond just sits there as things happen to it. Here is a story about a day in the life of the pond. (Give out your prepared canisters to the participants.)*

It is a beautiful day! Everyone wants to be outdoors and many people head to_____pond.

1. *(Small pieces of paper napkin)* One family came and had a picnic. They thought they picked up all of their trash, but a paper napkin was blown by the wind into the pond.
2. *(Mud = poop)* Another family was walking their dog. The dog was running around until he needed to poop! He pooped right on the bank of the pond and guess what happened!
3. *(Vegetable oil)* The town grounds crew came through to look at a tree that needed some pruning. Their truck had bounced over so many rocks, that there was a small leak in the oil pan and the truck leaked oil as it drove by the pond.
4. *(Crushed leaves)* As the grounds crew pruned the tree, some of the leaves blew into the pond.
5. *(Fishing line)* A man thought he would like to try to fish in the pond. His fishing line was a bit of a mess, so he had to cut a bit off and it blew into the pond.
6. *(Candy wrapper)* A woman was walking through the park and dropped her candy wrapper on the ground. Guess where it ended up.
7. *(Soapy water)* Up the hill, a young man was washing his car. He left the hose on and tipped the bucket over. All of the sudsy water ran down the hill and into the pond.



As the day wore on, dark clouds rolled in and a rainstorm began. It rained *really* hard and washed down all kinds of things:

| | |
|---|---|
| 8. *(Soil)* | Dirt from the construction site. |
| 9. *(Baking soda)* | Fertilizer from some one's lawn |
| 10. *(Baking powder)* | Insecticides from a garden |
| 11. *(Blue water or mouth wash)* | Antifreeze from the road |
| 12. *(Vinegar)* | Acid in the rain |

How does the pond look now? Which pollutants do you think the pond could normally handle? Which are beyond its recuperative powers? *(Note: An extended activity is to make filters and try to clean the water.)*

Do we want clean or dirty water? Can we make more water? Does the pond want to be clean or dirty?

## Demonstration:

- Using a clear water jug, fill with 100 ounces of clean water. Explain that this is all of the water in the whole wide world. Pour out 3 ounces into a marked glass or container. Show the remaining 97 percent. Ask if anyone has been to the ocean. Is it huge? What does the water taste like? Add salt to the 97 percent and explain that this much of the earth's water is in the oceans and we cannot drink it.
- From the 3 ounces pour 2 ounces into an ice cube tray. Ask where do we put ice cube trays? What happens when we put them in the freezer? 2 percent of the earth's water is frozen. Of the last 1 ounce, pour 1/4 onto a plant. Part of the earth's water is in plants. Pour 1/2 into a glass and drink the swallow. Part of the earth's water is in animals. There is only about one-fourth of 1 percent left—that is all of the water left over for ponds, and rivers and for us to brush our teeth with and to grow our food with and to take a bath.

| | |
|---|---|
| *How much water does it take to make…* | |
| 1 gallon of gasoline? | 25 gallons |
| 1 pound of steel? | 35 gallons |
| 1 Sunday newspaper? | 80 gallons |
| 1 pound of aluminum? | 1,000 gallons |
| 1 ton of brown paper for shopping bags? | 82,000 gallons |
| 1 automobile? | 100,000 gallons |
| *How much water does it take to grow…* | |
| 1 pound of potatoes? | 24 gallons |
| 1 pound of carrots? | 33 gallons |
| 1 pound of oranges? | 65 gallons |
| 1 pound of rice? | 560 gallons |
| 1 pound of chicken? | 815 gallons |
| 1 pound of beef? | 2,600 gallons |
| *How much water do you use every day?* | |
| 1 toilet flush? | 1.5–6 gallons |
| Running a faucet for 2 minutes? | 6–8 gallons |
| A 10-minute shower? | 25–60 gallons |
| A full bathtub? | 35–80 gallons |
| A dishwasher cycle? | 10–20 gallons |
| A full-clothes washing cycle? | 50–100 gallons |
| Washing the car for 20 minutes with the hose running? | 90 gallons |
| A leaky faucet, dripping slowly for 1 month? | 350 gallons |
| A toilet that leaks one ounce per minute for 1 month? | 350 gallons |

## Prayers and responsive readings

O God of heaven and earth,
who makes the rain to fall,
teach us to appreciate the gifts
You graciously give us all.
Amen

Reader The earth is the Lord's and the fullness thereof, the world and all that dwell therein.

*All* We live in God's world, we are not alone.
We share this life with the heavens and the earth,
with the waters and the land, with trees and grasses,
with fish and birds and creatures of every form,
and with all our brothers and sisters.

Reader God saw all that was made, and behold, it was very good.

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## Websites

- Save Our Groundwater (SOG), <*http://www.saveourgroundwater.org*>.
- For watershed maps: <*http://cfpub.epa.gov/surf/locate/map2.cfm*>.

Centre for Affordable Water and Sanitation Technology, <*http://www.cawst.org*>.

# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 12

## Protecting the Sacred Gift of Air

by Ruah Swennerfelt

### Purposes of this unit

1. To learn about the issues of air quality.
2. To discover the underlying spiritual basis for caring about the air.
3. To learn ways Friends can make a difference.

### Sacred texts and other inspirational readings

*And to every beast of the earth, and to every bird of the air, and to everything that creeps on the earth, everything that has the breath of life, I have given every green plant for food.*

—Genesis 1:30

*By the breath of God they perish, and by the blast of his anger they are consumed.*

—Job 4:9

*Then we who are alive, who are left, will be caught up in the clouds together with them to meet the Lord in the air; and so we will be with the Lord forever.*

—I Thessalonians 4:17

### Hymns and songs

Many and Great O God Are Thy Things. *Worship in Song, A Friends Hymnal,* #16.
The Spacious Firmament on High. *Worship in Song, A Friends Hymnal, #20.*
Spirit of God in the Clear Running Water. *Worship in Song, A Friends Hymnal,* #12.

### Issue Presentations

#### Life-giving Breath of God: Protecting the Sacred Gift of Air

(Reprinted with permission of the National Council of Churches of Christ and its Eco-Justice Working Group, 110 Maryland Ave. NE, Washington, DC 20002. *www.webofcreation.org/ncc/.* We obtained this article from their very useful web site and encourage others to take advantage of their resources. *This unit is not in exactly the same format as the others because it is reprinted in full from another source. However, the materials follow much the same order as our basic layout. Although this was written for Earth Day Sunday 2004, it is relevant in whatever year it is read and used.)*

*O Lord, how manifold are your works! In wisdom you have made them all; the earth is full of your creatures…. When you send forth your breath, they are created; and you renew the face of the ground.*

—Psalms 104:24,30

THANKING AND PRAISING GOD for the beauty of God's creation is an essential part of our ongoing faith journey and worship experience. To help celebrate God's wondrous works, each year the Eco-Justice Working Group of the National Council of Churches of Christ develops a resource that can be used on Earth Day Sunday. The emphasis for 2004, entitled "life-giving Breath of God," is on God's gift of air. The following resource highlights a number of ways individuals and congregations can celebrate and protect this integral part of God's creation. We

have included some basics on the state of the world's air quality; worship resources including a sermon starter and bulletin insert; and ideas for personal, congregational, and community action to protect the air we breathe. We hope these ideas inspire further thoughts, conversations, and actions in answering God's call to be faithful stewards of creation.

## The sacred gift of air

> *Stand at the crossroads, and look, and ask for the ancient paths, where the good way lies; and walk in it, and find rest for your soul.*
>
> —Jeremiah 6:16

AS PEOPLE OF FAITH, we understand our responsibilities to protect the sacred gifts given by God and to heal a world torn by brokenness and human strife. Air pollution, like all human-induced environmental degradation, is a sign of this brokenness—a sign of our having stepped away from the "ancient paths" described in Jeremiah. So that we might find the "good way," a place of rest for our souls (and clean air for our lungs), we first must acknowledge our sins and examine where we stand today by delving more deeply into the issues and explore the local, regional, and global connections of our actions and inactions. Only then can we take informed, inspired steps down the right path—"the good way"—of healing, wholeness, and reconciliation.

## Just breathing

CLEAN AIR IS ESSENTIAL for human life. An average person breathes in over 3,000 gallons of air each day. At the same time we inhale life-sustaining oxygen, we also breathe in the byproducts of our lifestyle choices—car fumes, fine particulate waste of industrial production, and chemicals and off-gases from synthetic products in our homes.

The Environmental Protection Agency (EPA) estimates that the United States alone emits 160 million tons of pollution into the air each year. And while regulatory enforcement of the Clean Air Act has significantly reduced aggregate emissions (down 48 percent since 1970) (*Air Trend Highlights*, EPA, 2002), over 130 million U.S. residents live in counties that violate federal air quality standards. Globally, 1.1 billion people breathe unhealthy air (*Children in the New Millennium*, U.N. Environment Programme, U.N. Children's Fund, and World Health Organization 2002). Furthermore, the accumulation of greenhouse gas emissions in the upper atmosphere is contributing to global warming and climate change.

## How the air gets polluted

WE CAN ONLY IMAGINE the purity of the air that existed when God's breath first swept across the waters or first filled Adam's lungs. Today, our industrialized societies have made smog, haze, and "code red" days commonplace.

Major contributors to poor air quality include power plants and industrial factories; mobile sources such as cars, trucks, planes, and trains; and natural occurrences such as wildfires and windblown dust particles. Among the largest sources of air pollution in the United States are coal-fired power plants. These plants emit 67 percent of the sulfur dioxide, 23 percent of the nitrogen oxides, 34 percent of the mercury, and 38 percent of the carbon dioxide from burning fossil fuels (*Air of Injustice*, Clear the Air, Georgia Coalition for the People's Agenda, The Southern Organizing Committee for Economic and Social Justice, 2002).

## Air pollution as global warming

EARTH'S ATMOSPHERE is ideally composed for life, with just the right mix of elements to sustain and support plants and animals. This mix includes small traces of greenhouse gases such as carbon dioxide, methane, and nitrous oxide. While these greenhouse gases are essential to life on Earth, too much of this "good thing" can be devastating. Human activities are making massive changes in the global atmospheric chemistry, which is causing global warming. The major greenhouse gas that humans are adding to the atmosphere is carbon dioxide, and the second largest greenhouse gas being emitted by humans is methane. Roughly three-quarters of human-caused greenhouse warming comes from the burning of fossil fuels—coal, oil, and gas. Global warming not only raises the temperature of the earth, but also increases the likelihood of severe storms, threatens biodiversity, contributes to heat-related illnesses, and

causes flooding in sensitive areas such as island nations. Decreasing greenhouse emissions by transforming our energy system from one based on fossil fuels to one based on natural, renewable energies is a way to help eliminate air pollution and curb global warming. (Adapted from *The Cry of Creation: A Call for Climate Justice*, Interfaith Climate and Energy Campaign, 2003.)



## Effects of pollution

HUMAN HEALTH is affected by air pollution through directly inhaled polluted air and also through "indirect" exposures such as drinking water or eating foods that have been contaminated by pollutants emitted into the air, which then fall back down to earth. These pollutants enter our systems through contaminated water and soil, and can bio-accumulate in plants and animals, traveling up the food chain to humans.

Worldwide air pollution causes more than 3 million deaths annually (*Children in the New Millennium),* mostly because of particulate pollution. A great majority of the deaths are children in developing countries who die of acute respiratory infections brought on by indoor air pollution from burning traditional biomass fuels for cooking and heating. In the United States, escalating rates of asthma, particularly among children, are being linked to poor air quality.

## Outdoor versus indoor pollution

AS COMMUNITIES STRUGGLE to curtail emissions and clean up the air outside, health experts are looking increasingly at the quality of our indoor air. Humans spend as much as 90 percent of their time indoors and studies have shown that indoor air levels of many pollutants can be two to five times higher than outdoor levels (*Trends in Air Quality*, American Lung Association, 2002).

In developed countries, indoor air pollution is the result of increased use of household chemicals, use of synthetic building and furnishing materials, increased insulation, decreased ventilation, and second-hand smoke. In developing countries, 1.8 billion people still rely on traditional biomass fuel—wood, charcoal, animal dung, and crop wastes—for household energy needs including cooking and heating, which results in indoor air pollution levels many times higher than international air quality standards allow (*Children in the New Millennium*). Promoting cleaner, renewable energy sources in developing countries would help improve the air quality and health of people living in these regions.

## Disproportionate impacts

WHILE AIR POLLUTION affects everyone on God's Earth, certain populations suffer a disproportionate impact. Those who are suffering the most from the burden of our lifestyle choices are often the very ones contributing least to the problem—the children, the poor, people of color, and residents of developing nations.

- Pound for pound, children breathe 50 percent more air than adults and therefore inhale a greater proportion of the pollution. In the United States, 25 million children live in counties that violate national air quality standards, and 35 million children live within 30 miles of a power plant, areas where the greatest health impacts occur. An estimated 2 million of these children have asthma (*Children At Risk*, Clean Air Task Force, 2002).

- The World Health Organization estimates that 2 million children die each year from respiratory ailments, making air pollution the second leading cause of disease for children under four.
- Approximately 69 percent of African Americans live within 30 miles of a coal-fired power plant. Today asthma attacks send African Americans to the emergency room at three times the rate of whites (*Air of Injustice*).
- Seventy-one percent of Latinos live in counties that violate federal air pollution standards and are more than twice as likely as either blacks or whites to live in areas with elevated levels of particulate matter (Clear the Air, Washington, D.C).
- According to the World Health Organization, average annual concentrations of particulate matter are four to six times higher in cities in China and India than in cities in North America, Western Europe, and Japan.

## People of faith speak out

OVER THE YEARS, religious leaders and people of faith have spoken out to protect clean air and the integrity of God's creation. In 2001, members of the faith community turned their collective voices to the topic of energy production, a process that is one of the greatest contributors of air pollution. The National Council of Churches of Christ joined with other major faith communities through the Interfaith Climate and Energy Campaign to issue a statement that called for energy conservation and climate justice. The letter, signed by 1,200 religious leaders including 41 heads of denominations and senior religious leaders, affirmed the importance of developing a sustainable energy policy that would protect the future of God's creation on Earth and the quality of life of future generations. Recently, in response to proposed energy legisla- tion, various denominations of the National Council of Churches of Christ issued a letter to Congress, urging them to meet current energy needs without sacrificing environmental protec- tion for the future.

## Take action to protect the air

CONGREGATIONS AND INDIVIDUAL PEOPLE OF FAITH have the opportunity to put their faith into action to protect our precious air resources and to give glory to God's creation. Reduce your energy use both at home and in the office, use energy-efficient transportation such as fuel-efficient cars, and use less toxic substances when purchasing items such as carpeting and paint for home and office use.

Since our energy use is a major contributor to both local air pollution and global warming, reducing our consumption and choosing cleaner, greener alternatives will help protect God's gift of air.

## Journey from awareness to action

JACK CHANDLER, Falcon Heights United Church of Christ, believed that protecting air resources and combating climate change was a matter of faith. So, he worked in his own church as well as in the larger community to facilitate changes. He began his efforts by conducting adult education sessions and running several information pieces in the church newsletter. The senior minister supported these initiatives by offering a sermon on global warming and challenging the church to "do its part" by participating in the Minnesota Wind Energy Program. The Church's executive board has since created an environmental committee, which includes the church treasurer, and signed up for fifty 100-kilowatt hours of wind energy (*The Cry of Creation: A call for Climate Justice*).

## Power plant pollutants and human health

Mercury. A metal found in coal, which converts into a gas when coal is burned, becomes airborne, and pollutes waterways. Bacteria in the water convert elemental mercury into methylmercury—its most toxic form—which is a bio-accumulating toxin that affects the brain, spinal cord, and liver and can impair a fetus or child's ability to learn, speak, feel, see, taste, and move.

Nitrogen Oxides ($NO_x$). A family of chemical compounds formed when coal is burned. They react in the presence of sunlight to form ozone smog, which can trigger asthma attacks.

Sulfur Dioxide ($SO_2$). A highly corrosive gas that is formed when coal is burned. In addition to contributing to acid rain, $SO_2$ mixes with nitrogen oxides to form fine particulate matter, which can lodge in the lungs affecting respiratory and cardiovascular systems.

Carbon Dioxide ($CO_2$): A greenhouse gas emission that builds up in the atmosphere and contributes to global warming. As global average surface temperatures rise, humans will experience an increase in heat-related stress, ozone smog, and the spread of infectious diseases.

## Sermon starters: reflections on the life-giving breath of God

THE CREATION story begins (Genesis 1:2–31) with the Spirit of God moving over the face of the waters. As each act of creation takes place throughout the chapter, God sees it as good. Finally, when the sixth day comes, God looked at "everything that he had made" and saw it as "very good."

### Wind and Spirit

THE SPIRIT of God in the opening verses of Genesis (verse 20 is also translated as "a wind from God" or "a mighty wind") In continuity with this connection between wind and Spirit, we see Jesus telling Nicodemus in the Gospel of John (3:8), "The wind blows where it chooses, and you hear the sound of it, but you do not know where it comes from or where it goes. So it is with everyone who is born of the Spirit." The word for wind and Spirit is the same in both Hebrew (ruah) and Greek (pneuma). Ruah is also the word for the breath of God that was breathed into the first parents, as they were created in Genesis. So, the Spirit is all around us, just as is the wind, and within us, just as is our very breath. We are sanctified with every breath we take: God's Creation (the air) symbolizes God's Holy Spirit, who, as the Orthodox pray, "is everywhere present and filling all things." The air, then, is something intimately connected with our very life and survival; furthermore, it brings to mind the Spirit who gives us life in the first place.

### From blessing to calamity

OUR ANCESTORS in the faith lived in the presence of God's Holy Spirit, bringing to them "every perfect gift…from above" (James 1:17). They lived lives that were far more integrated with the natural world, where each season was a source of thanks-giving, a gift from the God "from whom all blessings flow." They had reverence for all aspects of Creation, including the air, which reminded them of the Holy Spirit. They saw the many blessings that rained down upon them from the sky. But we modern human beings have changed all that. Now, in fact, the rain may bring death because it is so acidic. And the air we breathe is full of noxious substances, such as mercury, lead, and soot that are emitted by our factories, our power plants, our incinerators, and our vehicles. The air above us, instead of being a source of blessings from God, has been changed. We have recreated it in our own image—our fallen human image—and thus it has become a source of calamity.

Have you ever looked out on the sky on a bright sunny spring day, especially from a mountaintop or other high place? Crystal clear and blue, the sky seems as if it goes on forever. That is how the ancients saw it. But we know that it does not. The earth's atmosphere is remarkably thin and fragile. It is easily damaged, and not easily repaired. And the damage that our modern industrial economy has brought about has become so serious, that it is now hurting us, our children, and the other creatures who share this precious Earth with us.

## A Christian response

MANY PEOPLE might throw up their hands in despair when faced with the enormity of the challenges facing us in cleaning up our environment and restoring the air. As Christians, we know that this is never an option. Perhaps instead we should lift up our hands in thanksgiving on this [day]. For we believe in a God who does not choose to leave us. Instead the Holy Spirit calls us to repentance, to a change of mind and heart—and lifestyle—for the sake of God's ravaged creation, the very creation that God once declared "very good." As the Spirit of God moves across our hearts, our own spirit is renewed from within, in a revival of faith and love. All that we do, in loving care of God's children and God's suffering world, we do in fidelity to the Creator, as a witness to the Kingdom God proclaimed.

## Ideas for action

- Use compact fluorescent lights (CFLs): They last up to 10 times as long as incandescent bulbs and will keep half a ton of $CO_2$ out of the air.
- Drive smart and drive less: Use a fuel-efficient car or an alternative method of transportation such as public transit, walking, or biking.
- Conserve energy: Turn off the lights, adjust your thermostat, and investigate using "green" energy options, such as solar or wind power.
- Encourage your local, state, and federal public officials to support and use renewable sources of energy and provide attractive public transportation options.

## Call to worship

O God, Holy Spirit, whose breath gives life to the world and whose voice is heard in the soft breeze, we need your strength and wisdom. Come to us and among us; come as the wind and cleanse us. We join with your Creation and with each other to sing the song of the stars; to rejoice in the sunlight; and to refresh the air.

## Prayers and responsive readings

### Prayer of thanksgiving

Leader We thank you Creator God, ruler of the sky.
At your Word the sky was formed
and by Your Word it is sustained.
*People* Praise God, O my soul!
Leader We thank you, Gracious God,
for the vastness of the universe,
for the wind, and the immeasurable heights of blue above.
*People* Praise God, O my soul!
Leader We thank you, ruler of all the universe,
you for the stars, for the energy from the sun,
and that which is seen and unseen.
*People* Praise God, O my soul!
Leader You have created the universe as a garment without seams
and given us our atmosphere
and set it over us to protect us.
*People* Praise God, O my soul!
Leader From the sky you send rain on the hills,
and the earth is filled with your blessings.
*People* Praise God, O my soul!

### Prayer of Confession

Leader Giver of Life, in the midst of polluted air we groan with Creation.
*People* Lord, have mercy.
Leader For the times we have failed to think of the harm done to air.
*People* Lord, have mercy.
Leader For our reckless plundering and waste.
*People* Lord, have mercy.

### Assurance of God's love

Leader We are children of God. We carry with us the promise that we are loved. Each day is new. The future is open. Let us act in love and with justice.

## Sending Forth: Acts of Commitment

Leader God our Creator, you have made us one with this earth, to tend it and to bring forth fruit. May we bring purpose and hope, O God, in joy and in faith, in truth and in freedom.

*People* Lead us forth, Spirit of God.

Leader We trust God who calls us to be the church, to love and save the whole Creation; to serve justice and resist evil; to proclaim Christ our judge and our hope.

*People* Lead us forth, Spirit of God.

(Note: See resources in Appendix B)

## Additional suggested activities

- Delight in what the air can do. Make paper airplanes, wind chimes, or windmills on a stick (possibly as an intergenerational activity).
- Make air-popped popcorn.
- Hold your breath for 60 seconds or more. How does it make you feel? How can we be thankful for this continuous gift?

## Questions for reflection

1. What am I/we doing as individuals and corporately to reduce energy use?
2. In what ways am I/we working to ensure clean air for all? Are there locations in my town or city where the air is polluted more than where I live? What am I doing to make a change?
3. Do we make sure that the construction materials, such as carpets and paints, in our Meetings are free of harmful out-gasing?

# Apples

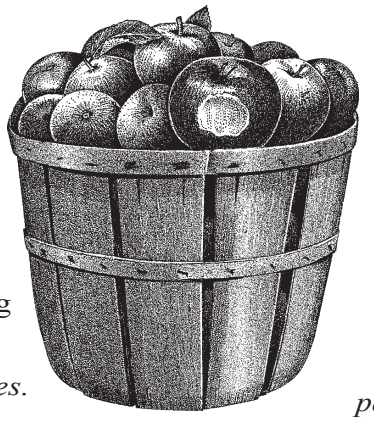
During the first week
God dealt with big issues,
like water/firmament and darkness/light.
Then later in the week, maybe 5th day,
God made apples.
Then she had an inspiration:
Why not create seeds and be done with it?
All things considered,
She was having a good week.

*Thank you, God, for apple seeds.*

II

It worked. Seeds became trees,
family *Rosaceae,* genus *malus.*
Roses and apples were kin, blessing
us with aroma and beauty.

*Thank you, God, for roses and apples.*



III

In July I get as excited as the bees about
the wild roses by the Meeting House
and the apple blossoms in my yard.
The fresh fragrance permeates
the very core of my being.
I build nesting cavities in my garden
for wild bees. I'm into co-op housing.

*Thank you, God, for apple blossoms.*

IV

Apples nourish us and delight our senses:
Pies, tarts, strudel, upside-down cake,
juice, cider vinegar,
Applesauce, apple pandowdy, apple pancakes
—how much paper should I use on this list?

*Thank you, God, for apples.*

V

Early settlers here planted apples.
Seed become tree, then fruit.
A century passes.
Helen Stevenson gives me wood
from an old tree by the lake.
I paint the ends of the straight pieces
to delay drying, wait ten years.
Now I can shape them into small sculptures,
and useful things that become beautiful.
That which was first a whole,
then many parts, is moving
toward a new kind of wholeness.

*Thank you, God, for the freedom to choose wholeness.*

VI

Carving apple wood resembles raising children.
Or being their teacher.
If you make a plan,
an ideal programmme,
you will always find
the material has a plan of its own.
Flaws, a different grain,
an unexpected beauty.
One must trust its total goodness, its own strength,
respect its own realization,
something you failed to see.

*Thank you, God, for the gift of patience.*

VII

Now hold the bird sculpture
softly in your hand.
Close your eyes.
Caress it.
Feel the graceful curves.
Let the delicate scent quiet your spirit,
bring moments of mindfulness.
(My instructions to keepers of apple birds:
polish monthly with a soft cloth
for fifty years.)
As decades pass
a new kind of beauty will emerge.

*Thank you, God, for apple wood.*

VIII

Now look at the wood.
Nuances of colour, subtle highlights,
undulations, circles, ellipses.
See how it absorbs its defects
to create a unique beauty.
See the century in its grain.
See eternity in its grace.
Rejoice: The seed lives!
Now the part becomes a new kind of whole.
This is your treasure:

*You are loved by God, who created apples.*

—Jack C. Ross
Argenta (B.C.) Friends Meeting

- *Creation Season Liturgy*. This package of materials will enable a congregation to plan a liturgy or series of liturgies to honor creation. To order, call 800/762-0968 and ask for EJ 8905. ($4.00)

- *The Cry of Creation: A Call for Climate Justice*. This 25-page booklet and interfaith study guide presents an introductory consideration to global warming. To order, call 206/632-2426. ($5.00)
- *Global Warming: A Religious Issue*. A resource suited for presentations, especially to skeptical audiences. It's God's World strategy packet listed below included. To order, call 800/762- 0968 and ask for EJ 9955. (Four copies for $1.00)
- *God's Creation and Global Warming*. A 12-minute video describing the risks of climate change and why it is a significant religious issue. To order, call 800/762-0968 and ask for EJ 0017. ($10.00)
- *Guide to Resource-Efficient Church Buildings*. This guide helps readers to understand the need for "green" building and remodeling and provides plenty of resources for doing so. To order, call 406/549-7678.
- *Guide for Energy Stewardship Congregations*. This resource offers your congregation suggestions for using less energy by making your facilities more energy-efficient. To order, call 800/ 762-0968 and ask for EJ 9960. ($.075)

## Organizations

- *Interfaith Climate and Energy Campaign (www.protectingcreation.org)*. A coalition of religious American leaders, institutions, and individuals who for over two years have been working in 21 states to educate congregants about the causes and effects of global climate change and to speak out about the religious and moral imperatives to protect God's creation and all of God's children. Through this joint effort of the National Council of Churches in Christ and the Coalition on the Environment and Jewish Life, over 1,200 leading religious leaders have joined in calling for federal policies for energy conservation and climate justice. 110 Maryland Ave., NE, Washington DC 20002.
- *Interfaith Power and Light*, <*http://www.theregenerationproject.org*>. An organization working to mobilize religious communities to play a leadership role in weaning the United States from its dependency on fossil fuel. 38 Keyes St., Suites 114/115, The Presidio, San Francisco CA 94129.
- *It's God's World: Christians, Care of Creation, and Global Warming*. Contains five one-hour sessions for adult study on the Bible, the environment, and the challenges of a changing climate. Concludes with suggestions on how congregations can diminish the dangers of global warming. To order, call 800/762-0968 and ask for EJ 9701. ($2.00)
- Eco-Justice Working Group of the National Council of Churches of Christ, <*http://www.webofcreation.org/ncc/*>.

# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 13

## Friends' Unique Witness on Population Concerns

by Stan Becker

### Purposes of this unit

1. To give the background facts about rapid population growth in modern times.
2. To describe the link between population numbers and human impact on the environment.
3. To illustrate how Friends have a unique witness on population concerns.
4. To provide resources for further information, reflection, and action.

### Sacred texts and other inspirational readings

*From everyone to whom much has been given, much will be required; and from the one to whom much has been entrusted, even more will be demanded.*

—Luke 12:48

*For ever thou art, O Lord; thy word is established in the heaven. Thy faithfulness is to all generations; thous hast established the earth, and it abides. They continue this day according to thine ordinances; for all are thy servants.*

—Psalms 119:89–91

*How little from the resources*
*Unrenewable by man*
*Cost the things of greatest value:*
*Wild beauty*
*Peace*
*Health and love*
*Music and all testaments of the spirit.*
*How simple*
*Our basic needs:*
*A little food*
*Sun, air, water*
*Shelter, warmth and sleep.*
*How lightly might the earth*
*Bear man forever.*

—A wall hanging in William Penn House
in Washington, D.C.

### Hymns and songs

For the Beauty of the Earth. *Worship in Song, a Friends Hymnal,* #10.
All People That on Earth Do Dwell. *Worship in Song, a Friends Hymnal,* #3.
All God's Critters Got a Place in the Choir. *Worship in Song, a Friends Hymnal,* #206.

## Issue Presentations

## Part 1

### My Journey Under the Weight of a Concern

WHEN I WAS BORN there were 2.5 billion persons on planet Earth. Now we are 7.55 billion, and thousands of other species are in decline as human activity disrupts virtually all ecosystems on the planet. The United Nations projects that we will be 10 billion humans on planet Earth by the year 2055. With about 2 billion persons living in poverty today and the health of the earth's ecosystems generally in further decline, it sounds like "less and less for more and more" will be what we can expect. Despite enormous gains with declines in child mortality, malnutrition, infectious diseases and illiteracy and increases in school enrollment, we are still adding about 70 to 80 million persons to the planet every year.

When I was in college at the University of Chicago, Paul Ehrlich published *The Population Bomb,* and rapid population growth came into the collective consciousness. I remember the slogan, "Whatever your cause, it's a lost cause without population control." (This is still true, of course, but rarely heard.)

When I visited Mexico in 1970 I realized the enormity and complexity of the problem of rapid population growth. Ed Duckles of the Friends Center there said it was a major problem, but most people have trouble comprehending it. He told a true population story that enabled people to understand: At that time Mexico City was growing very rapidly, both from high fertility and from migration from rural areas. He stated that just to keep up with the population growth, Mexico City would have to build *a school a day!* It was not doing so.

Mexico City at that time had 7 million persons, and now it has about 18 million persons. And because an adequate number of school buildings does not exist, children go to school in three shifts during the day. That rapid population growth, which incidentally has slowed in more recent years, is still a factor behind the number of undocumented persons who come from Mexico to the U.S.

Later, back at the University of Chicago, I studied demography, and years later I came out a population scientist. Before long (in the1980s) I was raising the concern among Friends, since at that time neither the American Friends Service Committee (AFSC) nor Friends Committee on National Legislation (FCNL) was actively working on population concerns. AFSC had done so in the 1950s, 1960s, and early 1970s. But at some point it seemed to become "politically incorrect." Certainly women's empowerment programs have been more appealing and indeed are another route to the same end of stabilized population. FCNL historically has not worked much on population concerns because of lack of unity among Friends on abortion and the fact that population groups also happen to be nearly 100 percent "pro-choice." However, the current FCNL policy statement does include this:

"Population pressure and unsustainable consumption threaten the finite planet that living things share. We support government policies that address the impacts of global population and of the inequitable consumption and distribution of resources on poor and vulnerable humans and other species. We call for access to effective, universally available, safe and noncoercive family planning resources in the United States and throughout the world." (Section 3 of Part 4 of FCNL's "The World we Seek")

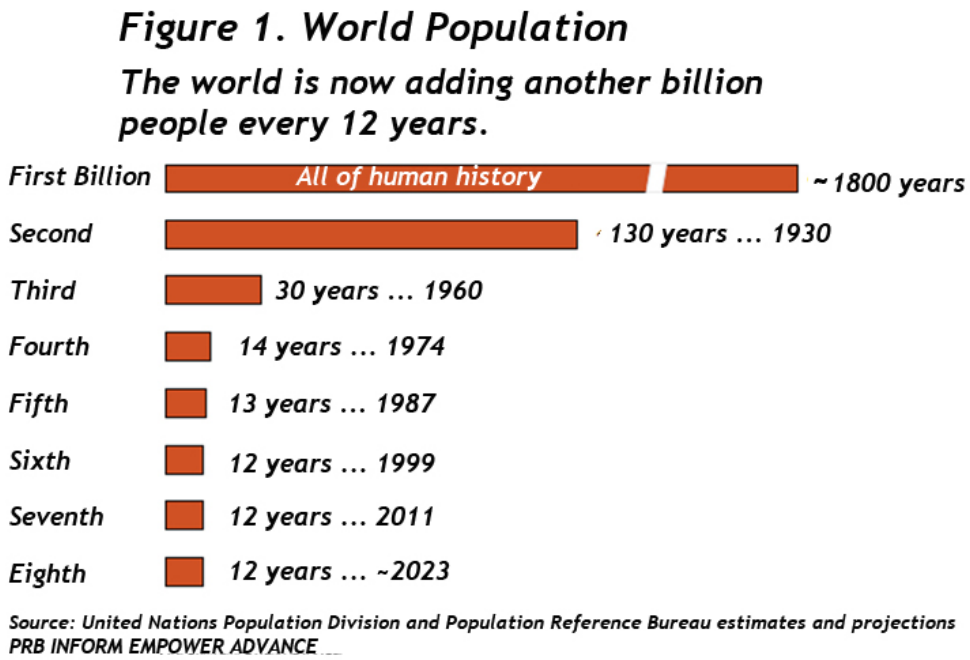
Therefore it was left to Quaker Earthcare Witness (then FCUN) to spearhead the consideration of population concerns among Friends, which it has done. In addition to its widely distributed pamphlets on population growth, abortion, sexuality, adoption, immigration, and the empowerment of women, it published a well-received collection of writings on population issues called *Population is People* <quakerearthcare.org>. It has regularly sponsored interest groups and worship-sharing on population concerns at Friends' gatherings.

We have much left to do. The matters of abortion, immigration, and sexuality all deserve our attention, and we need to labor with Friends who feel differently from the way we do.

## Part 2

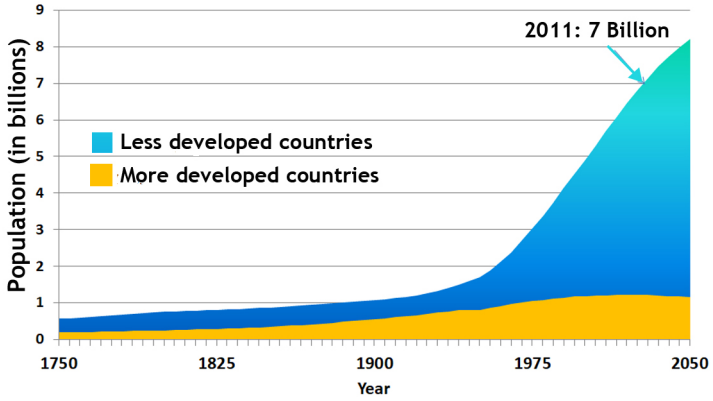
## A Fateful Doubling

FOR ANY OF US over the age of about 40, we have lived during a time when the world population doubled, something which hopefully will never happen again. Figures 1 and 2 show human population growth over previous centuries up to now and projections to 2050. It took *Homo sapiens* from the time we became a species until 1830 to reach one billion of us on the planet. By 1930, 100 years later, we had added a *second* billion. Then our numbers began to take off. We reached the *third* billion 30 years later in 1960, the *fourth* billion only 14 years later in 1974, the *fifth* billion 13 years later in 1987 and the sixth billion 13 years later in 1999 and the seventh billion in 2011. Finally things are slowing down, but the United Nations demographers predict that we will pass 11 billion before 2100. We are adding 75 to 80 million persons per year to the globe. It is hard to comprehend such large numbers. This growth amounts to about 220,000 more people each day. Just imagine preparing dinner for 220,000 more persons tonight than last night!




But as Figure 2 shows, we live in a demographically divided world. The orange area at the bottom of the figure is the population of developed countries. The blue area on the top is the population of developing countries. About 98 percent of population growth is in developing countries. However, in about 93 countries, the average number of children per woman is below (long term) population replacement level of 2.1 children. But populations in most of these countries continue to grow because of past rapid population growth; this phenomenon is called "population momentum." But fertility has been very low for several decades in Europe, and in fact, in 20 countries (Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Czechia, Estonia, Germany, Greece, Hungary, Latvia, Lithuania, Republic of Moldova, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, and Ukraine) population is actually declining. There have been more deaths than births in recent years, though some of these countries are still growing due to immigration.

*Figure 2. World Population Growth, 1750-2050*




Source: United Nations, *World Population Prospects: The 2004 Revision (medium scenario, 2005, and the Population Refernce Bureau*

On the other hand, 45 percent of the world population growth is occurring in just ten countries. India adds about 16 million persons per year; China, 7 million; Nigeria, 5 milliono; Pakistan, 4 million; and the U.S. and Indonesia are next, adding about 2.4 million each. In the U.S. about half of our population growth is due to more births than deaths and half from immigration (documented and undocumented). Note that the U.S. is the only developed country that is growing so fast.

The most important factor determining the level of population growth is the level of modern contraceptive use in a population. Surprisingly, the decline of the death rate is a relatively minor factor. Contraceptive methods have been invented in developed countries and are beyond the reach of many who want to use them in developing countries because of either lack of access or high cost relative to the per capita income. I was in Burkina Faso once when a case of Norplant kits (the sylastic implants put in the arm that prevent pregnancy for up to 5 years) was arriving from the U.S. Women in Ouagadougou *stood in line overnight* to be able to get one of those kits. This illustrates the demand, as economists call it, to control family size. The assistance that developed countries give to family planning is far below the need, and in the U.S. is only about 0.1 percent (one one thousandth) of military spending. The U.S. government cut off funding to the United Nations Population Fund (UNFPA) under the George W. Bush Administration and the Republican-con- trolled Congress because UNFPA works in China, where there have been documented coerced abortions and family planning. This action was taken despite the fact that the State Department sent an expert group to China to check on this, and they found no use of UNFPA funds for such activities. Funding was reinstated in the Obama administration, but then stopped again when the Trump administration took over.

But those who oppose abortion should be aggressively supporting contraceptive program because it has been shown that contraception prevents thousands of abortions in poor countries each year. It is estimated from surveys that 100 to 150 million couples in the world want to space the next birth or stop childbearing entirely but do not have access to modern contraception. Don't we have a duty to help these couples?

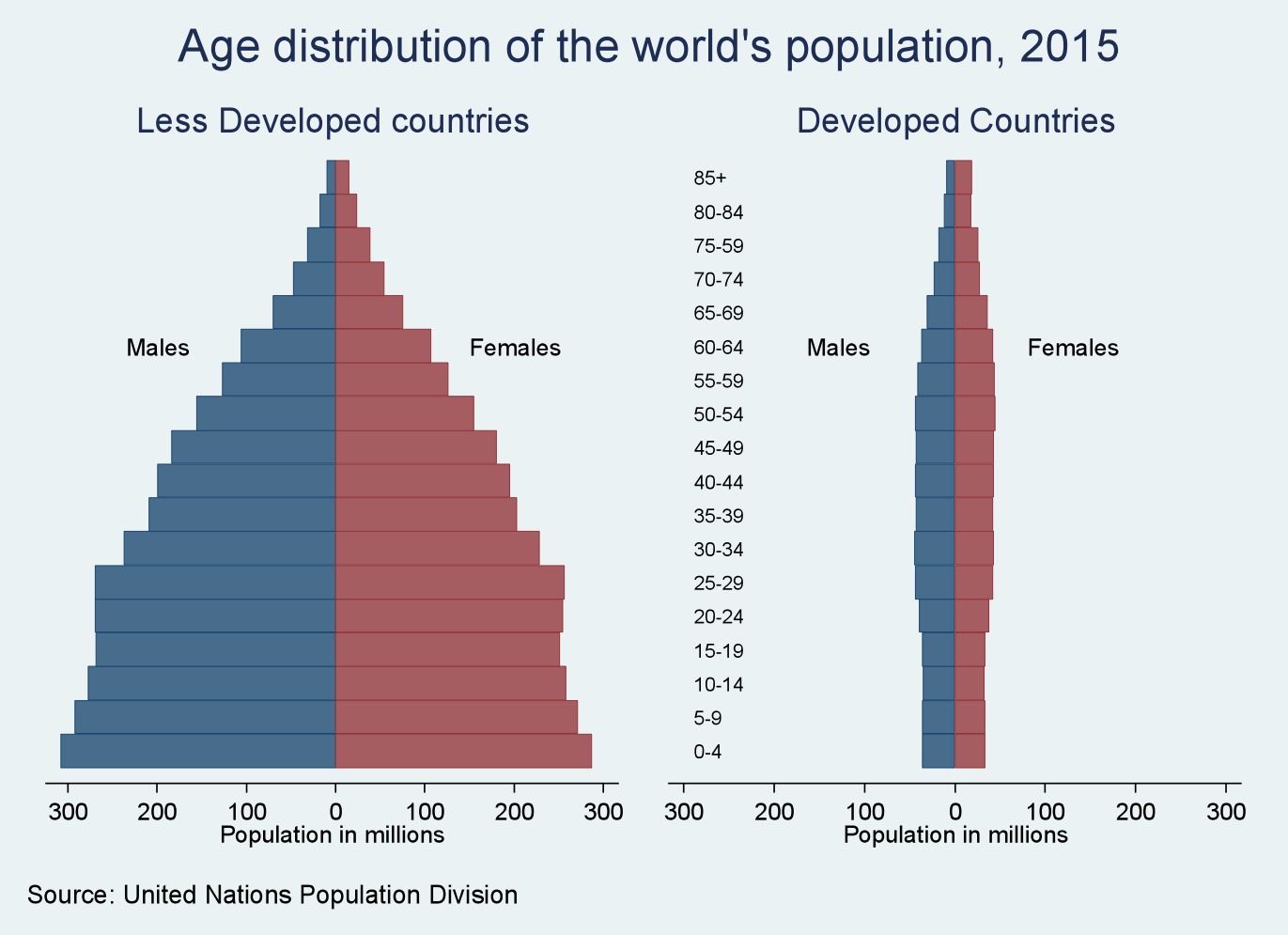
Some pessimists claim that AIDS or other new infectious agents will take care of the problem of rapid population growth. It is true that the prevalence of HIV is so high in some southern African countries, but even there births have outnumbered deaths. For most of Africa, however, HIV is lower and fertility is very high. For example, in Burkina Faso, the average woman has 5.3 births, HIV prevalence among pregnant women is about seven percent, and the population is projected to grow from 19 million in 2017 to 43 million in 2050. But Burkina Faso and many other African nations are having trouble feeding their current populations!

Africa as a whole, with a population of 1.3 billion in 2017, is projected to have a population of 2.5 billion in 2050, despite the devastating AIDS epidemic. Clearly we must intervene to reduce both high death rates from AIDS and other diseases like malaria and high birth rates.

Two other demographic phenomena directly or indirectly affect our lives. In 1900 approximately 10 percent of the world population lived in urban areas. By1950 this had grown to 30 percent. And about 2013 the percentage passed 50 percent, so half of humanity lives in an urban environment and the percentage continues to increase. Growth of cities in developing countries is very rapid. In 1950 the five largest urban agglomerations in the world were in developed countries: New York, London, Tokyo, Paris, and Moscow.

By 2016 four of the five largest cities were all in developing countries, aside from Tokyo. Delhi, Shanghai, Sao Paulo and Mumbai replace the others above. I lived in Dhaka in 1980 when it had 3 million inhabitants. Now it has 13 million and it is a very different place! Supplying even the basic needs of rapidly growing urban populations in developing countries is a major task.

A SECOND PHENOMENON affecting us is population aging. Not only individuals, but populations get older. Populations can also get younger. Demographers measure a population's age by the median or mean age of persons in the population. An anecdote will illustrate differences in population ages. When I first traveled to Mexico in 1970 it seemed like there were children everywhere. Compared to the U.S. that I knew, this was a valid perception. Specifically, in the U.S. at that time, for every 100 persons, 20 were below the age of 15. In Mexico at that time, for every 100 persons, 50 were below age 15. Figure 3 below shows the population age pyramid for the developing countries and developed countries of the world. Note that the pyramids are drawn to scale.



As you can surmise, the proportion of the population that is above age 65 is much higher in the cylinder-shaped age pyramid of developed countries. As birth rates decline, the pyramid of developing countries slowly comes to resemble that of developed countries, and thus the world population is getting older. This population aging is the basis of the worry about "unfunded pensions" that is a major concern in places like western Europe.

How many people can Earth support? This is where an ecological perspective becomes crucial. We must answer the question with other questions. At what standard of living? With what other species sharing the planet with us? If we all were to live like those now living in the U.S., then scientists estimate that we would have already exceeded the earth's carrying capacity. The mathematics of this are fairly complicated but interesting. The reference is: <footprintnetwork.org/content/images/uploads/National_Footprint_Accounts_Method_Paper_2010.pdf>. There are a number of websites where one can calculate their own footprint on Earth: <earthday.org/Eco-Footprint/Calculator>, < footprintcalculator.org>.If we all used renewable energy and were vegetarians, the planet could probably support 8 or 9 billion people. If we all ate seaweed, the number of people we could feed could go at least to 10 billion! But as human numbers have increased and we have invaded virtually every ecological niche on the planet, we have pushed and are pushing other species to extinction. Large mammals are the most affected because they need lots of land to hunt; it is estimated that 30 to 60 percent of large mammals are threatened with extinction <Tilman et al. 2017. Future threats to biodiversity and pathways to their prevention Nature 546 (7656):73-81>.

## _____ Part 3 _____

## What Friends Can Do

ALL THE ABOVE is very factual and scientific. What can Friends uniquely contribute to this concern about rapid population growth? It turns out that the answer is, quite a lot. For example, many of our co-religionists in the Christian churches are opposed to abortion, as are many Friends. But Friends recognize that the use of contraception can prevent the need for abortion. And studies have shown that making contraception available to unmarried adolescents does not increase their sexual activity but does prevent unwanted pregnancy among those who do become sexually active.

In the U.S. we seem to have a schizophrenic attitude about sexuality. It is glorified in the media, but we have a morality that presumes that our unmarried adolescents will not engage in it. For example, what high schools do you know that make condoms available, even though statistics show that over half of adolescents will have had sexual intercourse by age 18? (*Morbidity and Mortality Weekly* 2016, 65(6):1-174). On the other hand, in western Europe, sexuality is treated more openly, and teens have ready access to contraception. Thus while the sexual activity rates of teens are at about the same level in the U.S. and western Europe, the teen pregnancy rate in the U.S. is about double that of western Europe. In the U.S. we must learn to treat teen sexuality more as a public health matter and less as a moral matter.

Our Quaker Simple Living Testimony is crucial, too. To link our standard of living to population and both to our impact on the planet, ecologists use a formula known as IPAT (Actually I = P*A*T), which has four components. I = total human impact on the environment; P = human population numbers; A = average affluence per capita of those humans, and T = technology required to produce that per-capita affluence.

Thus our impact is directly related to both our numbers and our per-capita use of resources (and production of wastes and so on) to produce our standard of living. Let us apply the equation with an example: If the U.S. population grows by 20 percent between 2015 and 2050, as it is projected to do, and we continue to drive gas-powered vehicles and drive the average number of miles that we do now, then carbon dioxide emissions will be 20 percent greater in 2050 than they are now, assuming we drive the same average miles per person. If the average fuel-efficiency of our vehicles were to improve by 17 percentage, the effects cancel each other out and our carbon dioxide output as a nation in 2050 would remain at the level it is now. Also, if we drive 17 percent less in 2050 than now, the same result would be had. Our Simple Living Testimony is a witness in this regard. North American Friends can lead the way in energy conservation, support for clean energy, carpooling, use of public transportation, etc. It also leads us to reflect on how we might stabilize population, because there are obvious limits to simple living.

Sprawl is a similar matter. The Baltimore-Washington area, where I live, is growing by approximately 50,000 persons every year. Either these additional persons will continue to expand human habitation outward and gobble up more forests and turn the land into housing developments, or we will have to build more tall apartment buildings and other more dense housing to accommodate them.

As another example of Friends contributions, we have our Equality Testimony. It is well-known that improving women's schooling and status is key to reducing birth rates. One reason for this is that formal education gives women other opportunities for fulfillment besides childbearing. Let us work for improvements in the status of women throughout the world. Our Equality Testimony also has implications for our position on immigration. Put another way, if we are opposed to discrimination against persons based on skin color, age, sex, and sexual preferences, how can we justify discrimination against persons based on where they happened to be born? As Friends we can hold up the ideal of open borders (as is true within the European Union) knowing that conditions in the world must change before this could become a reality. (See the Quaker Earthcare Witness pamphlet *Immigration in a Crowded World*.)

In summary, it is clear that the population numbers must level off soon or there will be more irreparable damage to the earth's natural systems as well as negative consequences for our own species, such as increased violence as populations fight for scarce resources like water. Without question, our children will live in a more crowded world than we do, with a reduced number of other species. To preserve this beautiful planet for future generations, we must address the problem of rapid growth of our own species.

Some Friends feel that, given the disproportionate use of resources by persons in developed countries, and given our Simple Living Testimony, it is more important for Friends to work on decreasing consumption here rather than on stabilizing population elsewhere. The truth is that it is very important to work on *both* matters, as they are linked, but separate issues. Specifically, our living simply does not necessarily provide the option of modern contraception for women in rural Africa who want to stop bearing children, but our working to increase family planning assistance can.

With regard to Friends' organizations, the American Friends Service Committee (AFSC) does not presently have programs where the main purpose is providing contraceptive services. However, these services are provided in several health projects that AFSC assists. Friends Committee on National Legislation (FCNL) staff cover legislation concerning population as time permits, but it is not a legislative priority as determined by Friends through the priority-setting in their Monthly Meetings. Several Yearly Meetings have approved Minutes on population concerns. These are available on the Quaker Earthcare Witness <quakerearthcare.org>.

## For more information

INFORMATION on U.S. population is available through the U.S. Census Bureau <*http://www.census.gov*>. The United Nations population projections and other reports can be found at <*http://www.un.org/esa/population*>. U.S. vital statistics are available at <*http://www.cdc.gov/nchs*>. Also, the Population Reference Bureau has its very useful World Population Data Sheet available for printing at its website <*http://www.prb.org*>. Population Connection (Formerly ZPG) gives a monthly update on legislative matters: <*heather@populationconnection.org*>.

## Questions for reflection

1. What is the spiritual basis of our desire to reproduce? How do we relate this to responsibility for the fate of the earth?
2. What would the world be like if population stabilized at a level closer to 6 billion than to 10 billion.? If relieved of the burden of feeding, clothing, and housing an ever-growing population, what higher goals of human fulfillment would society be able to pursue?
3. How would we limit human population to what the earth can support? Where is the line between (dis)incentives and coercion?
4. Is parenthood a right and if so, does it cease to be a right after some number of births fiven that population size will only stabilize when the average number of births per woman is two?
5. What are our beliefs about the connection between sexuality and spirituality?
6. What is our position about sexual activity before marriage? Outside of marriage?
7. How does the de-linking of sexuality and childbearing via modern contraceptives affect our beliefs about sexuality?
8. What would have to change in order for it to be feasible to have open borders?
9. Which rights (e.g. voting), if any, can justifiably be denied to immigrants and which cannot?
10. What can we learn from the evolution of the European Union's policy of open international borders (within the Union)?

## Illustrative Activities

### 1. Learning About Population Growth

In_____, the year of your birth, there were_____billion people living on the earth. World population passed 7.55 billion by the middle of 2017, the year of this book's publication. If you lived to the age of 100 years, you would be living in a world populated by_____billion people. (Use the chart on the next page to obtain the population figures.)

### World Population Growth During Your Life

| Calendar year | Your age (years) | World population (billions) |
|---|---|---|
| _____(your birth year) | _____ | _____ |
| 2017 | _____ | 7.55 |
| _____ | 100 | _____ |

### Questions

- Have you noticed this rapid population growth?
- How have you noticed it?
- What are the positive effects?
- The negative ones?
- What do you conclude?
- What can you do about it?

| World Population (billions) by Year and 100 Years Later | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Birth year | World population | | Birth year | World population | | Birth year | World population | |
| | At birth | At 100 | | At birth | At 100 | | At birth | At 100 |
| 1930 | 2.1 | 8.0 | 1954 | 2.7 | 9.5 | 1978 | 4.3 | 10.1 |
| 1931 | 2.1 | 8.1 | 1955 | 2.8 | 9.5 | 1979 | 4.4 | 10.2 |
| 1932 | 2.1 | 8.2 | 1956 | 2.8 | 9.5 | 1980 | 4.4 | 10.2 |
| 1933 | 2.1 | 8.2 | 1957 | 2.9 | 9.5 | 1981 | 4.5 | 10.2 |
| 1934 | 2.2 | 8.3 | 1958 | 2.9 | 9.5 | 1982 | 4.6 | 10.2 |
| 1935 | 2.2 | 8.4 | 1959 | 2.9 | 9.6 | 1983 | 4.7 | 10.2 |
| 1936 | 2.2 | 8.4 | 1960 | 3.0 | 9.6 | 1984 | 4.8 | 10.2 |
| 1937 | 2.2 | 8.5 | 1961 | 3.1 | 9.7 | 1985 | 4.9 | 10.2 |
| 1938 | 2.2 | 8.6 | 1962 | 3.2 | 9.7 | 1986 | 4.9 | 10.2 |
| 1939 | 2.3 | 8.6 | 1963 | 3.2 | 9.7 | 1987 | 5.0 | 10.2 |
| 1940 | 2.3 | 8.7 | 1964 | 3.3 | 9.8 | 1988 | 5.1 | 10.2 |
| 1941 | 2.3 | 8.8 | 1965 | 3.4 | 9.8 | 1989 | 5.1 | 10.2 |
| 1942 | 2.3 | 8.8 | 1966 | 3.4 | 9.8 | 1990 | 5.2 | 10.2 |
| 1943 | 2.4 | 8.9 | 1967 | 3.5 | 9.9 | 1991 | 5.3 | 10.2 |
| 1944 | 2.4 | 9.0 | 1968 | 3.6 | 9.9 | 1992 | 5.4 | 10.3 |
| 1945 | 2.4 | 9.0 | 1969 | 3.6 | 9.9 | 1993 | 5.5 | 10.3 |
| 1946 | 2.4 | 9.1 | 1970 | 3.7 | 10.0 | 1994 | 5.6 | 10.3 |
| 1947 | 2.5 | 9.2 | 1971 | 3.8 | 10.0 | 1995 | 5.7 | 10.4 |
| 1948 | 2.5 | 9.2 | 1972 | 3.8 | 10.0 | 1996 | 5.8 | 10.4 |
| 1949 | 2.5 | 9.3 | 1973 | 3.9 | 10.0 | 1997 | 5.9 | 10.4 |
| 1950 | 2.5 | 9.4 | 1974 | 4.0 | 10.0 | 1998 | 6.0 | 10.5 |
| 1951 | 2.6 | 9.4 | 1975 | 4.1 | 10.0 | 1999 | 6.1 | 10.5 |
| 1952 | 2.6 | 9.4 | 1976 | 4.1 | 10.0 | 2000 | 6.1 | 10.5 |
| 1953 | 2.7 | 9.4 | 1977 | 4.2 | 10.1 | 2001 | 6.2 | 10.6 |

## 2. Population Resources Exercise

# Introduction

THIS SIMULATION EXERCISE can be played with 25 to 75 persons (it is most fun with more people), ages ten and up. Its purposes are:

1. To experience inequality of population distribution and resource distribution throughout the world.
2. To illustrate the difficulties in relationships under this inequality.
3. To gain insight into the imperatives for right sharing of world resources and simple living.
4. To help Friends to explore the spiritual consequences of the unequal distribution of the world's resource.

Population will be represented by participants in the simulation exercise, and resources will be represented by crackers.

## Materials needed

- Making tape or other colored tape, string, or chalk, depending on the floor surface.
- Crackers (preferable those with sections, so they can be divided easily without going to crumbs), or other foods such as whole peanuts. You will need about twice as many indivisible cracker sections as there are participants in the simulation exercise.
- Two or three chairs.
- Small sheets of paper that are numbered from 1 to the maximum number of persons expected.

## Time needed for the simulation exercise averages between 45 and 70 minutes.

AS AN OVERVIEW of the game, after preparation of the space on your part (usually best done before participants arrive; it will require 20 to 30 minutes), the components of the exercise include:

- Explanation (3–5 minutes).
- Assigning people to continents according to population (5–10 minutes).
- Distributing crackers (5–10 minutes).
- Explaining possible interactions between people (3–7 minutes).
- Playing the game (10–20 minutes).
- Sharing afterwards (whatever time feels appropriate; minimum 10 minutes).

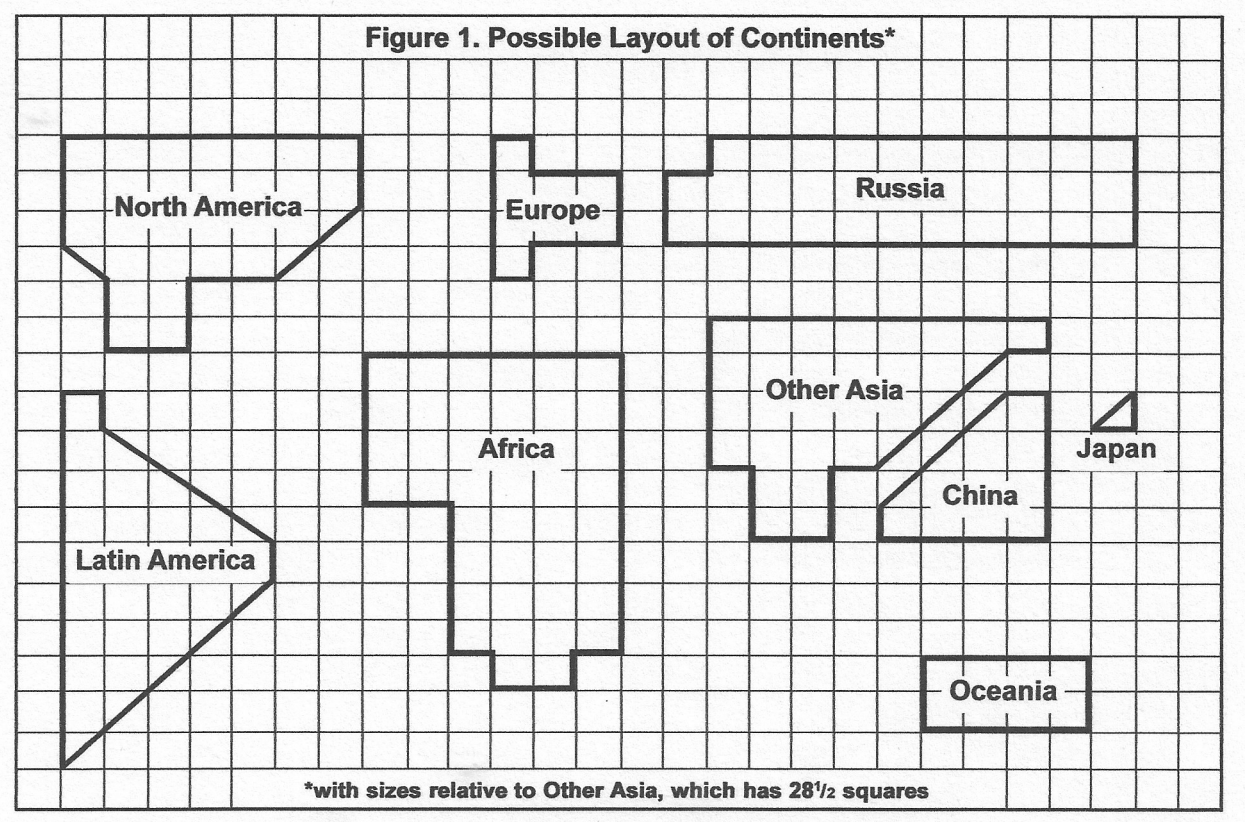
## Preparation (20–30 minutes)

THE FIRST THING to do ahead of time is to lay out the world "map" on the floor showing the borders of the continents with the string, tape, or chalk. Tape can outline the continents on an indoor floor; chalk serves on outside hard surfaces; and string wrapped around two-inch nails, driven into short grass or earth, is good for an outside unfinished area.

How many continents to include can depend on the number of persons. For fewer than 50 persons, Oceania (Australia, New Zealand, and ten or so island nations) can be put on the floor and left empty or left off entirely, because its proportion of population of the world would be represented by less than one person until there were 102 persons in the exercise. Antarctica is excluded or drawn and left empty for the same reason. Japan is part of Asia, but since its Gross National Product (GNP) is much higher than that of the rest of Asia (see Table 2), it can be included as a separate geographic entity on the map (with one person) if there are at least 22 persons doing the exercise.

Figure 1 illustrates a possible layout; Japan and Oceania are included.

Other Asia serves as a reference area for laying out the continents. The relative sizes of the other continents are shown in Table 2. If the floor has square tiles, it is easy to get the relative areas of the continents. Otherwise, approximations (e.g. use your feet to measure) will do fine. The extent of realism in the shapes of continents is up to you. Diagonals imply counting half squares or estimating the areas of triangles! To gauge the size you want for Other Asia, consider the number of persons for Other Asia (see below) and that the idea is for persons there to feel crowded; this is accomplished with one to two square feet per person. Thus with, for example 12 persons for Other Asia (34 persons total) and tiles of 12 inches square, an appropriate size for Other Asia would be between 20 and 25 tiles.




Allow enough space between continents so that exits and entries of persons can be seen distinctly.

Another preparatory step is to put the data of Table 1 on a blackboard or other display area, or you may make copies for participants. The latter is very nice, as it gives everyone a summary of all the information.

## Introducing the exercise (5–7 min.)

WHEN THE GROUP gathers, explain the purposes of the exercise(above) and then draw attention to the blackboard or handout with data of the world (Table 1) that forms the basis of the game. Give each participant a number.

## Assigning people to continents according to population (5–10 min.)

NEXT, assign persons to each continent. Table 3 on page 152 gives the number of persons in each continent depending on the number participating. Table 3 allows you to assign persons to continents easily, using the sequential numbers that everyone has, starting with North America and ending with Other Asia. You can have the persons move to their continents as you assign them or after all have been assigned. It has been found best to assign persons to Other Asia last. Then you might say, "and all the rest of you belong in Other Asia."

What we have found works well is to have a number (starting with 1 and going to 40 or 60 or some number higher than the number expected) written largely on the top of copies of Table 1 and gives them out sequentially as persons come at the beginning to participate. Then they can study the data while waiting to start and the last sequential number given out allows the leader to identify how many are participating

For elderly Friends with trouble maneuvering, or younger Friends who may not understand what to do, Asia or Africa are the best places (if personal space is a problem, you can allow the person to step off into Madagascar or Sri Lanka).

If couples or families with children are together, the dynamics might be different, depending on whether you put them in the same continent or different continents.

## Distributing crackers to continents (and people) according to GNP (5–10 min.)

THE PERSONS are now standing in their continents, and Other Asians are feeling a little crowded. Now things get interesting. Explain that crackers represent Gross National Product, and that you will distribute these according to the actual world distribution. Table 4 shows the distribution of crackers by region according to the number of crackers available. Note that the numbers of crackers per continent are simply multiples of the proportions in Table 1.

A good proportion of total cracker sections to total people is two to one. The reason can be seen by comparing Table 3 and Table 4. Notice that many participants assigned to Asia will not get crackers even with twice as many crackers as people. For example, with 30 participants and 60 crackers, the 10 participants in Other Asia (excluding Japan and China) receive only six crackers in total. The assigned distribution of crackers to people within a continent is according to your ingenuity. Japan was set aside from Asia since it represents 1 percent of Asia's population but has over half of its GNP, i.e. for the 30 participants and 60 crackers one participant is in Japan with 11 crackers, while the ten persons in Other Asia get six crackers! Also, there can be a couple of businessmen, politicians, etc. in Asia who receive several crackers and many who receive a half a cracker or none. Similarly, in Latin America and Africa, some people can be designated as landowners and receive a large portion of the crackers. Also, if there is more than one person in Europe or North America, internal differences in distribution of income can be represented. By whatever logic, you then distribute crackers to each individual in each continent, continent by continent, deliberately with the other participants watching quietly. As an example, Table 5 shows the possible distribution in a exercise with 30 people and 30 crackers. To make it dramatic, start with the distribution of crackers to the rich continents! It is helpful to recite the number of crackers given and your story about who gets how many for what reasons as you go. Note that the personality types who get none or many crackers will also affect how the exercise unfolds.

Table 2: Population (2016), Area, Per capita GNP and Total GNP and percentages of these, by region

| | Population | | Area | | GNP (Thousands of US $) | | |
|---|---|---|---|---|---|---|---|
| Region | Millions | Percent | Millions Sq Km. | Percent | Per capita | Total | Percent |
| World | 7418 | 100.0 | 135.7 | 100.0 | 15,415 | 114,348 | 100.0 |
| Africa | 1203 | 16.2 | 30.3 | 22.3 | 4802 | 5777 | 5.1 |
| L. America | 637 | 8.6 | | 13.1 | 14,512 | 9244 | 8.2 |
| Asia | | | | | | | |
| China | 1378 | 18.6 | 9.6 | 7.1 | 14,160 | 19,512.00 | 17.2 |
| Japan | 125 | 1.7 | 0.4 | 0.3 | 38,870 | 4,859 | 4.3 |
| Other Asia | 2934 | 39.6 | 21.8 | 16.1 | 9794 | 28,735 | 25.3 |
| N. America | 360 | 4.9 | 24.4 | 18 | 55179 | 19,864 | 17.5 |
| Europe | | | | | | | |
| Russia | 144 | 1.9 | 17.0 | 12.5 | 23,790 | 3,426 | 3.0 |
| Other Europe | 596 | 8.0 | 5.9 | 4.3 | 34,745 | 20,708 | 18.3 |
| Oceania | 40 | 0.5 | 8.5 | 6.3 | 32,456 | 1,298 | 1.1 |

Source: Population Reference Bureau Data Sheet 2016

Table 3. Exact Distribution of persons on the globe by continent, for 25 to 50 numbered participants

| | Groupings of players by their assigned numbers | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| World (group size) | North Amer. | Latin Amer. | Europe | Russia | Africa | Oceania | Japan | China | Other Asia |
| 25 | 1 | 2, 3 | 4, 5 | 6 | 7-9 | - | - | 10-14 | 15-25 |
| 26 | 1 | 2, 3 | 4, 5 | 6 | 7-10 | - | 11 | 12-16 | 17-26 |
| 27 | 1 | 2, 3 | 4, 5 | 6 | 7-10 | - | 11 | 12-17 | 18-27 |
| 28 | 1 | 2, 3 | 4-6 | 7 | 8-11 | - | 12 | 13-18 | 19-28 |
| 29 | 1 | 2, 3 | 4-6 | 7 | 8-11 | - | 12 | 13-18 | 19-29 |
| 30 | 1,2 | 3-5 | 6-8 | 9 | 10-13 | - | 14 | 15-20 | 21-30 |
| 31 | 1,2 | 3-5 | 6-8 | 9 | 10-13 | - | 14 | 15-20 | 21-31 |
| 32 | 1,2 | 3-5 | 6-8 | 9 | 10-13 | - | 14 | 15-21 | 22-32 |
| 33 | 1,2 | 3-5 | 6-8 | 9 | 10-13 | - | 14 | 15-21 | 22-33 |
| 34 | 1,2 | 3-5 | 6-8 | 9 | 10-14 | - | 15 | 16-22 | 23-34 |
| 35 | 1,2 | 3-5 | 6-8 | 9 | 10-14 | - | 15 | 16-22 | 23-35 |
| 36 | 1,2 | 3-5 | 6-8 | 9 | 10-14 | - | 15 | 16-23 | 24-36 |
| 37 | 1,2 | 3-5 | 6-8 | 9 | 10-14 | - | 15 | 16-23 | 24-37 |
| 38 | 1,2 | 3-5 | 6-8 | 9 | 10-14 | - | 15 | 16-23 | 24-38 |
| 39 | 1,2 | 3-5 | 6-9 | 10 | 11-15 | - | 16 | 17-24 | 25-39 |
| 40 | 1,2 | 3-5 | 6-9 | 10 | 11-15 | - | 16 | 17-24 | 25-40 |
| 41 | 1,2 | 3-6 | 7-10 | 11 | 12-17 | - | 18 | 19-26 | 27-41 |
| 42 | 1,2 | 3-6 | 7-10 | 11 | 12-17 | - | 18 | 19-27 | 28-42 |
| 43 | 1,2 | 3-6 | 7-10 | 11 | 12-17 | - | 18 | 19-27 | 28-43 |
| 44 | 1,2 | 3-6 | 7-10 | 11 | 12-17 | - | 18 | 19-27 | 28-44 |
| 45 | 1,2 | 3-6 | 7-10 | 11 | 12-17 | - | 18 | 19-27 | 28-45 |
| 46 | 1,2 | 3-6 | 7-10 | 11 | 12-17 | - | 18 | 19-27 | 28-46 |
| 47 | 1,2 | 3-6 | 7-10 | 11 | 12-17 | - | 18 | 19-28 | 29-47 |
| 48 | 1,2 | 3-6 | 7-11 | 12 | 13-18 | - | 19 | 20-29 | 30-48 |
| 49 | 1,2 | 3-7 | 8-12 | 13 | 14-19 | - | 20 | 21-30 | 31-49 |

When Japan and/or Oceania are drawn but there are too few people participating to have a person representing the population in one or both, then a decision is necessary about what to do with crackers that would go to that/those places. One possibility is to place the allotted crackers in the area (for immigrants to get later). Another possibility is to allocate them to Asia or in the case of Japan, to capitalist competitors in North America or Europe. A third possibility is to keep those crackers out of the exercise entirely with or without mentioning it to the group.

A large easy chair for one North American and a folding chair if there is a second North American (and a folding chair in Japan) may be used as additional props to illustrate the unequal distribution of wealth.

## Explaining the objectives/rules (3–7 minutes)

WITH THE PEOPLE and crackers distributed, it remains merely to explain the possible interactions (or in exercise jargon, the rules). It is probably best to read the rules, perhaps twice; you might also want to have them posted on a blackboard or posterboard. These can be revised, or other "rules" invented.

## The rules

A MAJOR OBJECTIVE is that those without food are highly motivated to get food.

Regarding food, the rules are:

1. Food (e.g. the crackers) can be treated like money.
2. Etiquette is that food is not taken but given voluntarily. (In the real world, of course, one may break etiquette.)
3. People with food can employ others without food if it is in their interest.

Regarding movement between continents, the rules are:

1. Citizens of Latin America, Africa, and Asia (including Japan and China) can legally only come to North America, Europe, or Russia as tourists with money, or upon invitation for study or work.
2. Citizens of North America, Europe, and Russia can travel to the rest of the world as tourists, missionaries, grantors of foreign aid (especially American wheat), capitalists (e.g. sales representatives for a cigarette company, factory owners looking to relocate, etc.).
3. Citizens from Latin America, Africa, or Other Asia may attempt illegal entry to North America or Europe.

**Table 4. Distribution of crackers for each region, by number of crackers**

| Region | Number of crackers | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **World** | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| **Africa** | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| **Latin America** | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 6 | 7 |
| **Asia** | | | | | | | | | |
| **China** | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| **Japan** | 7 | 9 | 11 | 12 | 14 | 16 | 18 | 19 | 21 |
| **Other Asia** | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| **North America** | 11 | 14 | 17 | 19 | 22 | 25 | 28 | 30 | 33 |
| **Europe** | | | | | | | | | |
| **Russia** | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| **Other Europe** | 13 | 16 | 19 | 22 | 25 | 28 | 32 | 35 | 36 |

Once the rules have been explained, then explain that each person needs to take stock of his/her position (in other words, where does s/he live, and how many crackers does s/he have?) and that of his/her neighbors, and decide what role to play. It may be good to set aside a couple of minutes of silence for this. Also, you can hint that Other Asians might want to work in cooperatives or some other way to share resources.

As examples of interactions, in past games there has been bargaining for safari trips, Latin American servants in the U.S. who try to bring in their relatives, African students training in Moscow, and a North American capitalist who relocated production plants to Asia for cheaper labor.

## Doing the exercise: Go! (10–20 min.)

AFTER the guidelines are explained and participants have had time to take stock of their situations, let the exercise unfold for ten to twenty minutes. You can now merely watch and encourage those with trouble getting into a role, or help stimulate interaction (e.g. cooperatives) if it seems lacking. Hopefully, you have created enough space between continents so that exits and entries of persons can be seen as distinct moves.

Be sure there is enough time for everyone to develop some role (at least ten minutes is needed for this). Leaders will emerge. You need to call time at the end, and you might give a two- to three-minute warning so there is time to complete "skits."

| Table 5. Possible distribution of 30 crackers with 30 people | | | |
|---|---|---|---|
| **Summary** | **Number of people** | **Number of crackers** | |
| **North America** | 2 | 7 | |
| **Latin America** | 3 | 2 | |
| **Europe** | 3 | 7 | |
| **Russia** | 1 | 1 | |
| **Africa** | 4 | 1 | |
| **Oceania** | 0 | 0 | |
| **Japan** | 1 | 2 | |
| **China** | 6 | 4 | |
| **Other Asia** | 10 | 6 | |
| **Detail** | **Individual person** | **No. of crackers** | **Possible story** |
| **North America** | 1 | 6 | CEO |
| | 2 | 1 | Immigrant farmworker |
| **Latin America** | 3 | 1.5 | Middle class |
| | 4 | 0.5 | Worker |
| | 5 | 0 | Landless |
| **Europe** | 6 | 4 | Government official |
| | 7 | 2 | Middle class |
| | 8 | 1 | Recent immigrant |
| **Rusia** | 9 | 1 | -- |
| **Africa** | 10 | 1 | Government official |
| | 11 | 0 | Famine victim |
| | 12 | 0 | Victim of civil war |
| | 13 | 0 | Landless |
| **Oceania** | -- | -- | -- |
| **Japan** | 14 | 2 | Businessman |
| **China** | 15 | 2 | Owner of factor |
| | 16 | 1 | Trader |
| | 17 | 1 | Government official |
| | 18-20 | 0 | Landless |
| **Other Asia** | 21 | 4 | Saudi oilman |
| | 22 | 1 | Government official |
| | 23 | 1 | Singapore merchant |

## Afterwards (minimum 10 min.)

ONE FORMAT for sharing about the experience is to have people sit in a circle and have each person around the circle share what role s/he played, what interactions s/he had or saw, and how it felt. If there are more than 30 persons, splitting into two or three groups may make more sense. This may be followed by worship-sharing. An alternative, especially if time is short, is to go into worship-sharing immediately.

Some Friends are unfamiliar with worship-sharing, so it needs explaining. In worship-sharing, as in worship, messages are surrounded by silence; persons speak from personal experience and do not question or debate what others have shared; and persons speak only once, unless everyone has spoken who wishes to speak (which the facilitators can determine).

As a follow-up, suggest that each person think more about this experience and its meaning. The flyer *Friends' Witness on Rapid Population Growth* is available from Quaker Earthcare Witness. Multiple copies of the pamphlet are available from Quaker Earthcare Witness. Participants can be given copies and encouraged specifically to consider the sections entitled "Questions" and "What Can We Do?"

For more information about population concerns, contact Quaker Earthcare Witness to order: *Leading a Friendly Session on Population Concerns,* a guide for facilitators, prepared by Stan Becker and the Population Concerns Committee of Quaker Earthcare Witness, $0.75 per copy.

# Prayers and responsive readings

Dear Holy One,

We thank you for the gift of life. We understand that this gift brings with it the desire of every species to thrive through reproducing its own kind. We know that it has been your will for the earth to be filled with myriad forms of life in one interdependent community of life. You have also granted us the gift of knowledge, which now tells us that the human species has reproduced itself at such a rapid rate that we and our activities are threatening the ability of other species to survive.

Guide us in your wisdom, the ability to act with both intelligence and compassion to restore our balance with the rest of creation, both in our numbers and in the resources that we consume. Guide us as the way opens to peaceful resolution of the paradoxes and disagreements that hinder us from acting in unity. We need your help. We are listening. Amen.

Creator, who gave us the wonder of life, we pray for guidance and understanding. Hear our prayer.

We see each new child as a gift, with the potential to do your good work. Yet our God-given intelligence struggles with issues of overpopulation. We pray for understanding.

Hear our prayer.

We have gone forth and multiplied and filled the earth with our kind and now your other gifts of life, the spotted owl, the wolf, the chocolate lily, are losing their environments and disappearing. The precious, interconnected web of all living things and the systems that nurture them are not able to support so many humans. How do we keep your covenant? We pray for wisdom and guidance as we speak to these issues.

Lord, hear our prayer.

We feel compassion for those countries affected by rapid population growth, especially those with issues of poverty, pandemics, and hungry children. We pray for solutions to this human suffering.

Sophia, hear our prayer.

We seek understanding for those who oppose family planning and for those who hunger for children yet cannot conceive. We pray for wisdom as we struggle with these complicated questions.

Great Spirit, hear our prayer.

We pray that future generations are able to enjoy freedom, beauty, health, community, education, personal achievement, and serene open spaces for the fulfillment of their souls.

Almighty, hear our prayer.

# REDUCE REUSE RECYCLE



## References: Unit 13. Friends' Unique Witness on Population Concerns


Becker, Stan et al, eds. 2000. *Population Is People, A Friends Perspective*. Quaker Earthcare Witness, Burlington, Vt.

Chapman, Audrey R. et al. 2000. *Consumption, Population, and Sustainability: Perspectives from Science and Religion*. Island Press, Washington, D.C.

Hinrichsen, D. and B. Robey. Population and the Environment: The Global Challenge *Population Reports Series M*, No. 15. Johns Hopkins University. Baltimore, Md. Available at *http://www.infoforhealth.org/pr/m15edsum.shtml*.

Lisinger, K.M., K.M. Schmitt and Lorch R. Pnadya. 2002. *Six Billion and Counting: Population and Food Security in the 21st Century*. International Food Policy Research Institute, Washington, D.C.


## QEW Trifolds:

- *A Friends' Witness on Population,* 2015.
- *A Witness on Sexuality for Friends,* 2015.
- *Toward Taking Away the Occasion of Abortion*, 2015.
- *Seeking Clearness on Child-bearing in a Crowded World,* 2015.
- *Immigration in a Crowded World,* 2015.
- *Empowering Women: The Link to Population,* 2015.
- *Adoption: An Option for Friends,* 2018.

## Other resources:

- *Information on U.S. population is available through the U.S. Census Bureau <census.gov>.*
- *The United Nations population projections and other reports can be found at <un.org/esa/population>. If you click on "Estimates and Projections" and then "Interactive data" you can find population information on any country or region of the world.*
- *U.S. vital statistics are available at <cdc.gov/nchs>. For birth and death data for example: <cdc.gov/nchs/products/nvsr.htm>*

The Population Reference Bureau has its very useful World Population Data Sheet <prb.org>.

## Unit 14

# Climate, Energy, and Earth Process

**by Ed Dreby, with Kim Carlyle**

### Purposes of this unit

1. To state and illustrate briefly what scientists know, understand, and project about climate change and its effect on Earth process.
2. To describe and illustrate briefly the policy and lifestyle challenges for society at large and for Friends.
3. To help Friends educate themselves about what they already understand and what they need to learn more about.

### Sacred texts and other inspirational readings

*For they sow the wind, and they shall reap the whirlwind.*

—Hosea 8:7

*The earth dries up and withers, the world languishes and withers, the heavens languish together with the earth. The earth lies polluted under its inhabitants; for they have transgressed laws, violated the statutes, broken their everlasting covenant. Therefore a curse devours the earth, and its inhabitants suffer for their guilt.*

—Isaiah 24:4–13

*Why do you look at the speck of sawdust in your brother's eye, with never a thought for the great plank in your own? First take the plank out of your own eye, and then you will see clearly to take the speck out of your brother's.*

—Matthew 7:3,5

It would go a great way to caution and direct people in their use of the World, that they were better studied and known in the Creation of it. For how can Man find the Confidence to abuse it, while they should see the Great Creator stare them in the Face, in all and every Part thereof?

—William Penn (1644–1718)

### Hymns and songs

**Water, Air, and Soil Make Life**

(To the tune of "Aura Lee," adapted by Jack Phillips)

*Water, air, and soil make life, with the help of light.*
*Water, air, and soil are rife, with a human blight.*
*Protect the earth! Restore the earth! Oh, Humanity!*
*Let us change destructive ways, and then restore the earth.*
*Africa, America, Asia, Europe too,*
*Hindu, Muslim, Christian, Jew, Let's share and care for Earth.*
*Unity! Unity! One Humanity!*
*Men and women of the earth, cooperate for life.*

Now Is the Cool of the Day. *Worship in Song, A Friends Hymnal,* #308.
For the Beauty of the Earth. *Worship in Song, A Friends Hymnal,* #10.
Turn Back, O Mortal. *Worship in Song, A Friends Hymnal,* #194.

## Issue presentations

### Introduction

**BY WAY OF INTRODUCTION,** we should perhaps explain how we came to focus on climate change as an important aspect of our commitment to seeking an earth restored. Ed and Kim met through Quaker Earthcare Witness (formerly FCUN) in 1999, and became colleagues in creating Quaker Eco-Witness for National Legislation (QEW-NL).

**Ed:** "From an early age I came to believe that life's purpose was to participate in God's purpose as manifested in Jesus' teachings. Between 1966 and 1987, through teaching middle and upper school social studies in three Friends schools, I learned quite a bit about food, energy, and the growth of human population, technology and pollution. In 1993, while running a housing rehabilitation crew for homeless families, I began to read then-Senator Albert Gore Jr.'s *Earth in the Balance*. I came to an abrupt and powerful realization that we humans, through excessive affluence made possible by our use of fossil and nuclear energy, were putting the miracle of life as we know it at risk, and that there could be no greater sacrilege than this. As a member of John Woolman's Monthly Meeting, I felt immediately a clear leading to work with and through the Religious Society of Friends. From 1997 to 2002 I represented Philadelphia Yearly Meeting on the Eco-Justice Working Group of the National Council of Churches (NCC) at a time when addressing climate change as a religious issue became a priority. I assisted the NCC staff person in developing educational materials on climate change and energy stewardship, and provided leadership for the interfaith climate campaign of the Pennsylvania Council of Churches."

**Kim:** "I have always had a strong concern for the well-being of our fellow creatures, an awareness that many human activities were harmful to the natural world, and a sense that human culture had become ignorant and unappreciative of its dependence on both creatures and nature. My activism began after I learned through a newspaper article that emissions of pollutants from a local electrical power plant were measured by the ton! As I learned more about the problems of energy production, I also noticed how wasteful our society is of energy, and of other resources. Several things became clear to me: 1) If our culture could regain its lost connection to the Creation, this wasteful, polluting way of life would change. 2) This reconnection could only occur with a spiritual transformation. 3) Air quality, energy use, and global climate change are closely linked together and are linked to the problems of water quality, species extinction, and other environmental ills. 4) All these things are linked to human concerns for human rights, justice, and peace. For the last several years, I have worked with people of faith (the North Carolina Council of Churches' Climate Connection, and Quaker Earthcare Witness) towards peace with Earth and peace on Earth."

In 2001, Ed and Kim co-authored a *Quaker Eco-Bulletin* article on climate change, which has provided some of the foundation for this unit.

### Article 1

## Global Warming, Climate Change, and Earth Process

**OVER SEVERAL BILLION YEARS,** living organisms have evolved from single cells to highly complex creatures, drawing matter from the earth and energy from the sun. Life has steadily transformed both itself and the earth as a whole toward miraculously greater diversity and complexity. While many cycles and processes contribute to this "Earth process," two are relevant to our topic:

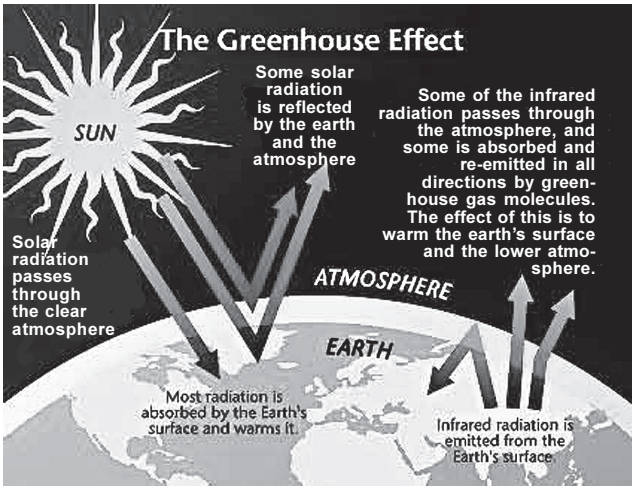
***Geological process*** involves changes in the earth's crust over long periods of time. Through the geological process, the earth's atmosphere, oceans, and living creatures have interacted to create and sustain conditions in which life can flourish. Substances that are essential to life—water, carbon, nitrogen, and others—circulate between the biosphere (the zone where life exists) and the earth's mineral crust in such a way that life adapts to and helps to stabilize the physical and chemical characteristics of the biosphere.

***Ecological process*** involves the relationship of plants and animals with one another and with the earth as they transform matter and energy to meet their needs. We humans, through technology and social organization, have disrupted the ecological process by increasing our use of matter and energy far beyond our basic needs. Until the 19th century, most of the energy used by humans came from the ecological process—from fire, plants, other animals, water, and wind. Then one human culture (our own) began extracting buried organic deposits that had been created over millions of years—first coal, and then oil and natural gas. Our burning of large quantities of these "fossil fuels" has changed the chemical composition of the atmosphere. Vast amounts of carbon that had been taken out of the atmosphere by plants and stored for eons underground are being put back into the atmosphere in a very short time. As a result, a vital mechanism that has helped to regulate the planet's temperature for millions of years, the "greenhouse effect," is being thrown seriously out of balance.

## What is the greenhouse effect?

**THIS TERM** "greenhouse effect" comes from the way a greenhouse can maintain a tropical climate, even when the weather is cold outside. Much the same thing happens inside a car that is parked in the sun with the windows rolled up.

Scientists explain the "greenhouse effect" in this way: The energy of sunlight, which has short wavelengths, easily passes through glass. After it warms the objects inside the greenhouse, the energy is converted into longer-wavelength heat radiation, which cannot pass as easily back through the glass, so the greenhouse traps the heat.




How high a greenhouse temperature rises depends on many factors. For example, if there is more dense matter ("thermal mass") inside to absorb heat, the temperature rises and falls more slowly; and as the difference between inside and outside temperature increases, heat is lost to the outside more quickly. As a result of these and many other factors in combination, the actual temperature changes toward an equilibrium temperature, at which the heat coming in is in balance with the heat going out, or until the factors change. If things get too hot inside for the plants growing there, the greenhouse may have to be shaded or ventilated to shift the equilibrium temperature downward.

After greenhouses came into use, scientists discovered that the earth's atmosphere works a lot like greenhouse glazing—admitting shorter wavelength light waves while trapping longer wavelength heat radiation. There are several gases in the atmosphere, particularly carbon dioxide ($CO_2$) and methane, that make the earth's equilibrium surface temperature about 60 degrees Fahrenheit higher than it would otherwise be, which makes life possible. Without the presence of these "greenhouse gases," all fresh water and most of the oceans would be frozen.

## How does the greenhouse effect relate to climate?

**BECAUSE** of the earth's rotation, the tilt of its axis, the size and location of continents, and numerous other factors, the weather created by heat stored in the atmosphere, oceans, and land surface is different everywhere and constantly changing. However, the average temperatures, winds, rainfall, and growing season in any one place have been remarkably stable over many thousands of years. The stability of the greenhouse gas concentrations in the atmosphere are largely responsible for this.

Climate change occurs naturally over very long periods of time, due to periodic changes in the intensity of the sun, the position of the earth in relation to the sun, and the shape and location of continents. When climates change very gradually, plant and animal species are able to evolve to adapt to new conditions. The relative *stability* of climate has made possible the evolution of more complex forms of life, and the development of agriculture and civilization.

## What is global warming, and how does it relate to the greenhouse effect and climate change?

**CLIMATE SCIENTISTS** have learned that both greenhouse gas concentrations and the earth's *average temperature* have been rising steadily for the past half century. Human activities are adding greenhouse gases to the atmosphere. This creates an "enhanced greenhouse effect," and thus the earth's equilibrium temperature is being shifted upward.

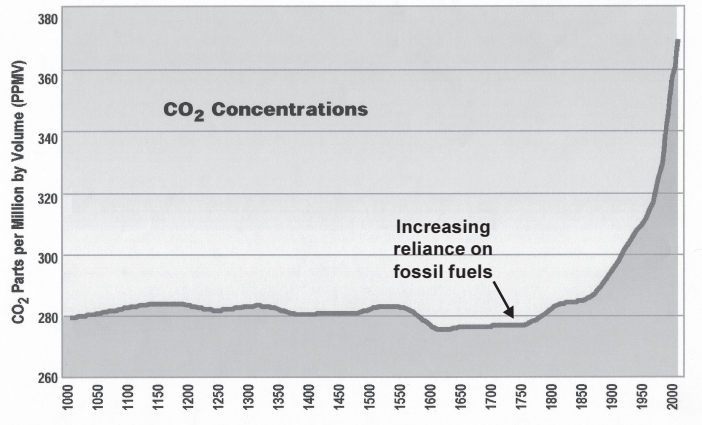
We who inhabit this global greenhouse are beginning to experience significant changes in the weather and climate. Because of all the factors that affect climate, many regions are getting warmer, while some are getting colder. But climate patterns are changing everywhere, weather is becoming more variable, and extreme weather events are increasing. Scientists are concerned that continued global warming may cause abrupt changes in ocean currents or sea level that would have major effects on agriculture and large human populations.

### What scientists know

1. ***Global warming/global climate change is being caused by human activities.***

   a. Carbon dioxide ($CO_2$) has increased about a third (from 280 parts per million to 368 ppm) since 1750. About 80 percent of the increase is from the burning of fossil fuel and 20 percent from deforestation (trees which would capture $CO_2$). The atmosphere can retain excess levels of $CO_2$ (that which is not absorbed by natural means) for over 100 years.

   Figure 1. Rising $C0_2$ Levels A.D. 1000–2000

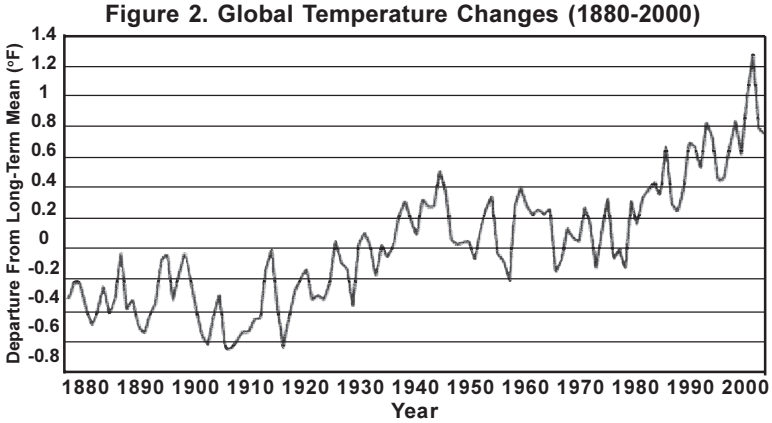



   b. Methane has increased about one and a half times (from 700 parts per billion to 1,750 parts per billion). Methane comes from burning fossil fuel; from decomposing plant matter in swamps, bogs, and rice paddies; from digestive processes of animals like cattle and termites; and from landfills. The atmosphere retains excess levels of methane in the atmosphere for only about 15 years, but methane traps much more heat than $CO_2$.

   c. Synthetic industrial gases (such as chlorinated fluorocarbons or CFCs) have accumulated in the past 50 years. They are beginning to have a significant effect because they trap even more heat than methane, and several persist in the atmosphere much longer than $CO_2$.

2. ***The earth's average surface temperature increased*** about 1 degree Fahrenheit in the 20th century, which appears to be the largest and steadiest change of any time in recorded history. This seemingly small change creates large changes in regional climate and weather patterns. Much of the increase has been in the last 20 years. The 10 warmest years on record have all been since 1990. Temperatures have warmed more at higher latitudes, more at night (meaning there are fewer frost days), and more over land than the ocean.

   Figure 2. Global Temperature Changes (1880-2000)




   Source: U.S. National Climatic Data Center, 2001

3. ***Average rainfall increased*** by 5 to 10 percent between 1900 and 2000. Rainfall patterns are also changing, with increases in the frequency and severity of both droughts and storms.

4. ***Average sea level has risen*** 1 to 2 milimeters a year since 1900 (6 to 10 total inches) — mainly because the volume of water increases as it warms.
5. ***Snow and ice cover have decreased.*** Snow cover has decreased about 10 percent since 1960. The period that ice covers lakes and seas has decreased by about two weeks in the past century. Arctic sea ice has thinned by 40 percent and decreased in extent by 10 to 15 percent since the 1950s. Many glaciers are retreating, some quite rapidly.
6. ***Flowering, growing, and breeding seasons have lengthened.*** In the Northern Hemisphere, growing seasons have increased from 1 to 4 days per decade in the last 40 years, and habitat ranges for plants, birds, fish, and especially insects are shifting toward the warming poles and higher elevations.
7. ***Loss of life and property due to weather-related events has increased.*** The increase has been dramatic during the past ten years, although growing populations and economies are also contributing factors.

## What scientists understand and project

1. ***The global climate system is exceedingly complex, and has many interacting features.***

   a. Self-regulating features *(negative feedbacks) limit change. An example is the tendency of plants in warm conditions to grow faster, absorbing more carbon dioxide and reducing the greenhouse effect (with a reverse effect in cold conditions).*
   b. *Destabilizing features* (positive feedbacks) amplify change. An example is that warming conditions increase the amount of water vapor in the air, which traps more heat, which creates warmer conditions.
   c. *Unpredictable features* are feedbacks that may be positive or negative. An example is the increase in clouds in warmer conditions which, depending on how they form, may reflect more sunlight or may trap more heat.
   d. *Natural fluctuations* are features that vary from place to place and year to year, like temperature, rainfall, and sea level. These make overall change difficult to determine, which is one reason that scientists report their findings as a range.

2. ***Only a few features of the climate regime in the past can be measured directly.*** Air bubbles trapped in ice cores in Antarctica and Greenland indicate the level of greenhouse gases in the atmosphere over 160,000 years. But historical temperatures, sea levels, ocean currents, and ice and snow covers must be estimated from biological and chemical evidence. Still, some features are now clearly understood:

   a. Global temperatures and greenhouse gas levels have risen and fallen together over time. In the past, temperature began to change due to geological process, and the destabilizing features of biological process accentuated the change by increasing or decreasing the natural greenhouse effect. Now human activities are adding carbon directly and creating the enhanced greenhouse effect.
   b. Oceans absorb and release heat much more slowly than air or land, so there is a *delay* of 50 to 100 years between a change in greenhouse gas levels and the change in global temperature. Also, because carbon dioxide remains in the atmosphere for up to 100 years, it will be a long time after greenhouse gas emissions are reduced before the global temperature adjusts and the climate begins to stabilize.

3 ***In the past, climate usually changed gradually, but occasionally rapid changes have occurred,*** such as a shift in the ocean currents that increased ice cover in northern Europe in less than a decade. While rising greenhouse gas levels can be expected to increase global temperature and sea level gradually, at some point a major shift in the whole system may lead to “surprises” of either more rapid warming, or a reversal into rapid cooling.
4. The long term effects of global warming are totally unpredictable. Even for the shorter term, scientists cannot make specific predictions because of the size and complexity of the system, and above all the unpredictability of future human activity. But highly sophisticated computer models enable them to make projections, based on different scenarios, from which they conclude, with a high level of certainty, that by the end of the 21st century:

a. With no surprises, average global temperature will rise a minimum of 2½ degrees Fahrenheit, and, in the worst case, 10½ degrees Fahrenheit.
b. Sea level will rise 10 to 30 inches.
c. Precipitation will increase at least 1 percent for every 1 degree Fahrenheit rise in temperature, with more extreme weather events.
d. The likelihood of a major "climate surprise" due to unforeseen events or a combination of events will increase.

The effects of these changes on climate and weather, ecosystems, people, and economic costs will be caused not as much by the averages as by the *extremes* of heat waves, droughts, storms and flooding; to fewer freezes that determine the ranges of insects and diseases they carry; to changes too rapid for trees and other plants on which animals depend to evolve or migrate; to societal crises, requiring more energy and water when less is available and costs are higher.

For these reasons, in 1990 climate scientists strongly urged governments to adopt policies that would reduce greenhouse emissions as quickly as possible. Since 1990, new knowledge suggests that climate changes will be greater than was expected then, especially because greenhouse gas emissions continue to rise. Climate scientists estimate that ***emissions will have to be reduced 60 percent or more from 1990 levels before the atmosphere will begin to stabilize.*** It will be long after that before global temperature stops rising unless there is a shift in ocean currents or some other dramatic change. Those who say we can wait until we have better science don't seem to understand the limitations of science, the irreversibility and unpredictability of the changes, and potential severity of the consequences for life as we know it.

**Article 2**

## Global Warming and Public Policy

### Why has there been controversy about what the climate scientists know and project?

**by Ed Dreby, with Kim Carlyle**

**THE EARTH'S** climate system is exceedingly complex. Determining global temperature and sea level is not a simple matter. Determining how one factor affects others is more difficult and subject to differing standards of evidence and interpretation.

Predicting what will happen in the future is even more complex and basically not possible. This is partly because predictable changes will have unpredictable effects. For example, higher air temperatures will lead to more clouds, but it is not possible to know in advance whether more clouds, which both reflect light and trap heat, will hasten or slow the warming trend. The biggest uncertainty is not knowing about consequences of future human activity.

The International Panel on Climate Change (IPCC) makes its projections in numerical ranges because areas of known uncertainties make more specific predictions unwarranted. A number of large corporations have opposed the conclusions of the IPCC as "unscientific," and have helped fund and publicize the work of a very few scientists who challenge its findings. News reports that present "both sides" make it seem as though there is much more disagreement among climate scientists than really exists.

### What has happened about global warming in international diplomacy?

A U.N. FRAMEWORK Convention on Climate Change was adopted by more than 160 nations at the 1992 U.N. Conference on Environment and Development (the "Earth Summit") in Rio de Janeiro. It set a goal of stabilizing global temperature and provides for annual conferences to negotiate agreements until this goal is reached. The U. S. President signed and the U.S. Senate ratified the Framework Convention in 1993.

At the 1997 conference in Kyoto, Japan, the industrialized nations adopted the Kyoto Protocol, an amendment to the Framework Convention, in which they each agreed to make specific emissions reductions by 2012. The U.S. reduction is to be 6 to 7 percent below its 1990 level, which is about 30 percent below the level of U.S. emissions otherwise projected for 2012. At Kyoto, some important decisions about implementation were postponed. At the Hague Conference, which took place shortly after the 2000 U.S. presidential election, the European Union (E.U.) insisted that every nation should reduce its domestic emissions. The U.S. did not agree. The U.S. also continued to press developing nations to limit their emissions as a condition for U.S. ratification. The developing nations, led by China and India, insisted that the industrialized nations begin making reductions before they would consider limits.

Soon after taking office, President George W. Bush stated his opposition to the Kyoto Protocol on the grounds that it could hinder the U.S. economy. This position has generated a great deal of negative publicity in the U.S. and in Europe. In the summer of 2001, the other 178 parties to the U.N. Framework came to final agreement on the terms of the Kyoto Protocol without the U.S. Enough of the industrialized nations have now ratified the Protocol so that it will take effect without U.S. participation if Russia ratifies it (which seems likely at this time).

## Can the Kyoto Protocol work if the developing countries don't participate?

OPPONENTS OF THE KYOTO TREATY in the U.S. have repeatedly insisted it "won't work" because developing countries "don't participate." This assertion is based on a distortion of the Framework Convention and ignores the prior agreements that led to the Kyoto Protocol. All nations that signed the Convention must inventory their domestic emissions, create pilot programs to limit them, and participate in the international efforts to reduce global emissions. Most developing countries have done these things. In 1996 it became clear that the industrialized nations' 1992 agreement to reduce greenhouse emissions voluntarily wasn't working. That year in Berlin, all parties, including the U.S., accepted the principle that agreeing to binding reduction targets for the industrialized nations should come first, and then limiting emissions from the developing nations would follow.

U.S. per-capita energy use is about twice that of western Europe and Japan, 12 times that of China, and 20 times that of India. Simple justice requires industrial nations, and the U.S. in particular, to take the first steps to slow global warming. It is the U.S., not the developing nations, that is failing to keep its agreements, and it is the U.S. whose participation will be essential if goal of reducing greenhouse emissions on an equitable basis is to be reached. Let us begin to remove the plank from our own eye so we can see more clearly how to help our neighbors consider the speck of sawdust in theirs.

## What is happening in national policy and politics?

IN 1997, before the Kyoto conference, the U.S. Senate passed a resolution stating that it would not ratify an agreement that might harm the U.S. economy or one that did not include participation by developing nations. The Global Climate Coalition, a lobby for certain coal, oil, and auto interests, strongly promoted this resolution and has lobbied the U.S. and other governments against a climate treaty.

Soon after taking office, President George W. Bush reversed a campaign pledge to begin limiting $CO_2$ emissions from coal plants. In the spring of 2001, the President released his energy plan, which focuses on increased production of fossil fuels and a renewed commitment to nuclear power. The plan largely disregards energy conservation and offers little support to promote energy efficiency and renewable technologies. It has been estimated that the Bush Administration's proposals would result in an increase in U.S. greenhouse gas emissions of as much as 35 percent *above* 1990 levels.

Acting on this pressing issue until reducing greenhouse emissions becomes a priority of U.S. public policy, especially an energy policy is of primary importance. This is a reality that our leaders and our people must come to understand and accept before global warming can begin to be slowed and eventually stopped.

### What are the alternatives to our present energy system?

AN ESSENTIAL first step is to replace less efficient equipment and technologies now in use with more efficient equipment and technologies that are already available.

Natural gas is less polluting as a fuel than coal or oil, but it still adds both $CO_2$ and methane to the atmosphere. Nuclear power is not a direct cause of greenhouse emissions, but as with fossil fuels, the fuel supply is limited, and as with global warming, the problems and risks of radioactive contamination are incompatible with caring for the earth as a sacred trust. Both natural gas and nuclear power may help make a transition away from our present system, but neither is ecologically sustainable.

Wind turbines already produce electricity at a cost that is competitive with fossil fuels. Photovoltaic (solar) cells already produce electricity directly from sunlight and would be much more widely used if the cost of using fossil fuels increases.

Fuel cells are being developed to produce electricity without combustion, using hydrogen as a fuel. Hydrogen can also be used in a combustion engine with only water as an exhaust. Many people are coming to think a solar/hydrogen energy system can be a solution to our present dilemma, but it takes energy to create usable hydrogen. Electricity from solar, wind, or other renewable sources can produce hydrogen, but if hydrogen is produced with fossil or nuclear energy there is little net benefit. This is why public policy decisions to hasten the development of a practical energy system based on renewable sources are so important.

Even with renewable energy, any technology used on a large scale will disrupt natural ecosystems. The more that population and affluence increase, the more disruptive human impacts will become. Creating a culture in which all people can find fulfillment using less energy and fewer of the earth's physical resources is both possible and essential for sustainability.

### Would complying with the Kyoto Protocol cost jobs and hurt the economy?

PREDICTIONS by critics of the Kyoto Protocol that it would hurt the U.S. economy are based on unwarranted assumptions about public policy and economics. The National Academy of Sciences found the U.S. can reduce energy use by 20 percent at a net economic benefit. Eight Nobel economists and 2,400 of their colleagues concluded that cutting greenhouse emissions would increase efficiency; add jobs; and reduce costs, wastes, and oil imports. Compliance with many existing environmental regulations, including recent reductions in sulfur emissions, has cost much less than the industries involved had predicted.

However, the Kyoto targets are just a first step. The large reductions needed to stabilize the atmosphere—which is what must be done to deal with global warming,—will cost money and will change the way we live our lives. There will probably be more jobs in a solar/hydrogen economy, but they will not be the same jobs. We should not expect it to be easy, and we must be sure that the burdens of change do not fall primarily on the poor and those who are most directly affected. We should also understand that the longer we wait to deal with global climate change, the more harm will occur and the more will be the human and economic costs for our children and grandchildren. Faithfulness to God means that we must protect God's earth and God's people, regardless of cost.

*To whom much has been given, much will be required.*
—Luke 12:48

**Article 3**

## The Dark Side of Our Dependence on Fossil Fuels: Time for Quakers to Take a Stand

**by Sandra Lewis and Kim Carlyle**

(Adapted from the *Quaker Eco-Bulletin,* Volume 2, Number 2, March-April 2002)

**MOST OF US** have reaped the benefits of an economy powered by fossil fuel. There is no need to list the wonders, comforts, conveniences, and prosperity wrought by this century-long dependence. But we can no longer ignore the extreme costs. We are on a collision course with ecological reality. It's time to recognize how our dependence puts us in direct conflict with core values embodied in the Quaker Testimonies of Integrity, Peace, Simplicity, Equality, and Com-

munity. Events of recent months shed glaring light on the dark side of our nation's dependence on fossil fuel. The World Trade Center towers' destruction is, perhaps, its most dramatic expression to date.

## Unacceptable costs of dependence

### Seeds of war

U.S. FOREIGN POLICY is now driven largely by our dependence on oil. We maintain a global military presence to ensure the flow. We make deals that support oppressive governments and overlook gross violations of human rights to feed our habit—slave labor to build a UNOCAL pipeline in Burma, for example. To ensure our access to oil, we train and arm factions like the Taliban, and then look the other way when these weapons are used to enforce despotic rule.

Gross inequalities of wealth and power among nations fueled by huge disparities in the use of fossil fuels sow the seeds of war. Our Peace Testimony calls on us to work to take away the occasion of war. Ending our dependence on fossil fuel has become an essential expression of this Testimony.

### Seeds of corruption

NOTHING ILLUSTRATES BETTER the link between dependence on fossil fuel and corruption in American institutions than the rise and fall of Enron. Enron flourished in Texas, and then nationally, under government policies and subsidies bought and paid for by the fossil fuel industrial complex. While the Bush administration and other politicians try to disassociate themselves from the debacle, the fingerprints of Enron and other corporate interests are evident throughout the administration's energy proposals. These proposals are now embodied in legislation passed by the U.S. House of Representatives.

The Enron story exposes a stunning lack of integrity—blatant and insidious—among leaders in government, industry, financial institutions and the media. It challenges us to confront deep threats to democracy itself that arise from our dependence on fossil fuel. Our Quaker Testimony on Integrity calls us to act against these threats.

### Seeds of ecological and social disintegration

OUR USE OF FOSSIL FUELS is devastating the earth, destroying cultures, and endangering human health. To discover and recover oil, roads are slashed through rainforests, drilling sites contaminate fresh water and soil, leaky pipelines spill millions of gallons of crude oil on wildlife and pristine tundra, and indigenous people are pushed to the brink of extinction. The temporary influx of cash upsets economies, corrupts governments, and concentrates wealth among a few. Oil refineries pollute the air, soil, and water of the impoverished communities that surround them. The extraction of coal devastates entire communities as it removes mountaintops, destroys watersheds, and leaves behind hundred-million-gallon toxic slurry ponds.

The combustion of coal and oil are responsible for soot, ground-level ozone, acid rain, and an increase in climate-changing atmospheric carbon dioxide. The air pollution exacerbates respiratory illness especially for asthmatic children and the elderly, contributes to the decline of our eastern hardwood forests, and has poisoned most of the lakes in the northeast U.S. With less than 5 percent of the world's population, the U.S. contributes 25 percent of the climate-changing gases, and yet the U.S. government has withdrawn from international negotiations to address world-wide human-induced climate change.

The true costs of fossil fuels are staggering and cannot be measured in dollars. The administration's proposals to expand fossil fuel production and increase our dependence on them are politically corrupt, ecologically and economically dangerous, and morally bankrupt.

## Toward sane energy policies

**NOW IS THE TIME** for Quakers to speak out for energy policies that are environmentally sound, socially just, and economically feasible. Such policies would explicitly aim at eliminating our dependence on fossil fuels and would include strategies, timetables and investments required to achieve this goal. As a nation, we need to pursue this with the urgency and priority of other great national goals such as landing a man on the moon.

Clean, renewable technologies (such as wind and solar) are currently available and emerging technologies (such as hydrogen fuel cells) are on the verge of being ready for general use. Renewable sources of energy should be phased in through promotion and subsidy for clean power, increasing emissions restrictions, and decreasing support for dirty power. The policy must provide for a transition to these new technologies that would include retraining of work forces and education of the general public.

Sane policies must account for the environmental, social and moral consequences of the energy we use. It is up to us to hold our political leaders accountable for enacting such policies.

## Renewable energy can stimulate the economy

*A number of studies have shown that energy conservation and the use of renewable energy has the potential to stimulate economic prosperity:*

1. A World Wildlife Fund study indicates that energy efficiency policies and development of renewable energy resources could result in 750,000 new jobs nationwide over the next nine years and 1.3 million new jobs by 2020. See this study at <*http://www.worldwildlifefund.org/climate*>.
2. A report from the Environmental and Energy Study Institute (EESI) entitled "The 2002 Farm Bill: Revitalizing the Farm Economy Through Renewable Energy Development" shows that developing our nation's on-farm renewable energy resources (bioenergy, wind, solar, and geothermal) has the potential to boost farmer income, create jobs in rural communities, diversify our nation's energy market, and protect our environment.
3. A Department of Energy study reports that a government-led program to encourage energy efficiency could reduce growth in electricity demand by 20 to 47 percent in the U.S.—a savings equivalent of 265 to 610 300-megawatt power plants.

In fact, if our country does not invest in the new technologies, we are likely to be left in the technological development dust as other countries cash in on the boom.

## What can Friends do?

**JOIN THE INTERFAITH CLIMATE CHANGE NETWORK** (ICCN). ICCN <*http://protectingcreation.org*> is a new initiative of the National Religious Partnership for the Environment to coordinate interfaith lobbying activities on climate and energy. The Partnership's goals for energy legislation in this session of the U.S. Congress are to:

- ❖ Raise vehicle fuel economy across the board in the shortest feasible time-frame, and require sport-utility vehicles (SUVs) and minivans to meet the same standards as passenger cars.
- ❖ Support the development of hybrid-electric, fuel cell, and other promising clean technologies, and provide incentives to help individual consumers purchase them.
- ❖ Increase funding for intercity rail and metropolitan mass transit.
- ❖ Invest more resources in renewable energy research and development with a focus on wind, geothermal, solar, and biomass technologies.
- ❖ Apply the strictest feasible energy efficiency standards to consumer products, including air conditioners.
- ❖ Increase funds for the Low Income Energy Assistance Program and other programs to alleviate economic hardship on low-income people.

## Questions reflection and suggestions for discussion

### Article 1: Global Warming and Earth Process

#### a. Individual reflection and group sharing

- ❖ What changes have you experienced or heard about because of climate change?
- ❖ What are your expectations for the future about climate change?
- ❖ What things that you care about deeply will be affected?

#### b. Group discussion of:

- ❖ Graphs of Northern Hemisphere temperature and carbon dioxide concentrations emissions.
- ❖ List of known ecological effects of climate change (from Article 1).
- ❖ Graphs of temperature, carbon, and methane over time, and of IPCC projections.
- ❖ List of possible consequences and uncertainties related to climate change (from Article 1).

Guiding question: what do we understand about this information?

**c. Questions**

- ❖ What does this information mean to you? What do you need to learn more about?
- ❖ How can you draw on your faith and spiritual experience to discern what you should do in response to what scientists know and anticipate? How should the Meeting respond?

## Article 2: Global Warming, Public Policy, and Friends Testimonies

**a. Questions for reflection and sharing**

- ❖ Are you aware of the controversies about climate change? Why do you think there is so much criticism of the science on which the IPCC assessments are based?
- ❖ What is your opinion about the strong recommendation the IPCC scientists made as long ago as 1990 that governments should act as quickly as possible to begin reducing greenhouse gas emissions?

**b. Queries**

- ❖ What are the spiritual consequences for us, as individuals and as a religious community, of knowing that human activities in which we are involved are changing the composition of the atmosphere and will affect the global climate in ways that no one can predict?
- ❖ What does this knowledge require of us in our households, Meetings, and communities?
- ❖ What is our responsibility as citizens of nations that are not making the reduction of greenhouse gas emissions a policy priority?

## Illustrative activities

### Role play on climate negotiations

**THE FOLLOWING** role play can be done by assigning negotiating teams to nations, providing time for the negotiating teams to meet, and then for negotiations to occur, or by asking individuals to make their own decisions based on what they think is best, and then to discuss the reasons for the decisions. There is no right answer. The purpose of the role play is primarily to identify and discuss the practical, political, and ethical challenges involved in coming to agreement on this very important and complex issue.

### The Challenge of International Climate Negotiations

**IT IS FEBRUARY 2008.** New records for global temperature were set successively in 2006 and 2007. Food and energy prices are up sharply, and food shortages are spreading in Asia and Latin America.

In July 2007 the heads of state of many nations held an unprecedented summit at U.N. headquarters in Geneva without United States' participation, to demand action by the United States to reduce greenhouse emissions. As a result, both presidential candidates ran on platforms calling for major reductions, and unspecified action is favored by large majorities in both houses of the new Congress.

In her State of the Union address, the new U.S. president called for negotiations by the largest polluters, China, the E.U., India, Japan, and the U.S., to serve as the basis for achieving global reductions of 25 percent below projected annual emissions for 2010 by 2020, and 50 percent by 2040. However, the U.S. made no commitments about its own reductions within this target, and negotiators are now meeting to determine the reductions each nation will make by 2020.

To achieve the global reduction, the negotiators must cut the total by 1,200 million tons before 2020, and another 1,800 million tons by 2040. The projected 2010 emissions, in millions of tons, are:

China —1471 E.U. —861 India — 426 Japan —258 U.S. —1332

What reductions (totaling 1,200 for 2020, and an additional 1,800 for 2040) should be assigned to each nation?

By 2020 China _____ E.U. _____ India _____Japan _____ U.S. _____
By 2040 China _____ E.U. _____ India _____Japan _____ U.S. _____

## Comparative demographic and economic projections

| | China | E.U. | India | Japan | U.S. |
|---|---|---|---|---|---|
| **Population (millions)** | 1,322 | 361 | 1,082 | 127 | 287 |
| **GDP per person** | $1,600 | $30,000 | $700 | $38,900 | $38,500 |
| **$CO_2$ per person** (tons/person) | 1.1 | 2.6 | 0.36 | 2.5 | 6.2 |
| **Carbon intensity** (tons/$1,000) | 0.07 | 0.09 | 0.51 | 0.06 | 0.16 |
| **Births/1,000 pop** | 14.1 | 9.1 | 21.4 | 8.9 | 12.8 |
| **Life expectancy** | 72.4 | 74.8 | 66.2 | 82.4 | 78.4 |
| **2010 $CO_2$/person** | N/A | +.4 | N/A | +.6 | +1.8 |
| **in excess of Kyoto target** | | 2.2 | | 2.5 | 4.4 |

## Questions for reflection

1. Should nations with higher carbon intensity that have not yet begun making reductions be expected to make bigger reductions sooner, or should they be given more time to adjust to making changes?
2. Should nations with higher populations and high birthrates face fewer reductions, or should nations with lower birth rates benefit from having reduced their population?
3. Should nations with higher life expectancies be recognized as having greater energy needs, or should nations with lower life expectancies be recognized as having greater energy needs?
4. Should consideration be given to the ease or difficulty with which a government can make decisions that its citizens may not like or support?

## Responsive reading

**Leader** The land mourns, and all who live in it languish. Together with the wild animals and the birds of the air, even the fish of the sea are perishing. Why do the land and its creatures suffer?

**People** Swearing, lying, murder, and stealing break out. Bloodshed follows bloodshed.

**Leader** But why should such terrible things happen?

**People** Because there is no faithfulness or loyalty, and no knowledge of God in the land.

## Prayer

Dear God,
We know that we too often make choices that separate and destroy. Forgive us our selfish ways. Help us to be servants of justice, to do your will, and to walk humbly with you as we seek a life that is more simple and centered on you. Help us to join joyfully in your continuing purpose of bringing life and love to a broken world.

# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 15

## Economics and Earth Process

by Ed Dreby, with Keith Helmuth and Margaret Mansfield

### Purposes of this unit

1. To show, using "ecological footprint" analysis, that the earth cannot sustain modern industrial economies in their current form.
2. To show that, without policy interventions, markets and money are apt to steadily increase the concentration of wealth, and cannot function within ecological limits.
3. To assert that progress toward peace, justice, and an Earth restored will require fundamental changes in our society's economic policies and expectations, and that this needs to become a corporate concern of Friends.
4. To raise questions about an extremely complex and important subject, for which our society needs to find answers.

### Sacred texts and other inspirational readings

*If you lend money to my people, to the poor among you, you shall not deal with them as a creditor; you shall not exact interest from them.*

—Exodus 22:25

*"You wicked and slothful servant! Knew you that I reap where I have not sowed and gather where I have not winnowed? Then you ought to have invested my money with the bankers, and at my coming I should have received what was my own with interest. So take the talent from him, and give to him who has ten talents. For to everyone who has more will be given, and he will have an abundance; but from him who has not, even what he has will be taken away. And cast the worthless servant into the outer darkness…."*

—Matthew 25:26–30

*And again I tell you, it is easier for a camel to go through the eye of a needle than for a rich man to enter the kingdom of God.*

—Matthew 23:24

*…Render unto Caesar that which is Caesar's and unto God that which is God's.*

—Luke 19:25

Luxury and covetousness, with numerous oppressions and other evils attending them, appeared very afflicting to me, and I felt, in that which is immutable, that the seeds of great calamity and desolation are sown and growing fast on this continent.

—John Woolman

### Hymns and songs

Open My Eyes That I May See. *Worship in Song, a Friends Hymnal,* #166.
Once to Every Soul and Nation. *Worship in Song, a Friends Hymnal,* #273.

## Issue presentation

## Article 1

# The Human Footprint and Friends Testimonies

IN 1968, the Apollo 8 astronauts took the first photographs of Earth from space and spoke of what it was like to see our planet from afar for the first time: "…a tiny, lovely, and fragile blue marble hanging in the blackness of space…." These photographs may come to be a symbolic if not pivotal event in modern society's evolving perception of the human-Earth relationship.

Quaker Kenneth Boulding is best known to Friends as author of *The Naylor Sonnets* and a proponent of peace studies. In the wider society Boulding was a prominent economist. He was among the first in his field to call attention to the limitations of existing economic concepts, for, because human enterprise had become global in scope, the earth had suddenly become much smaller and more fragile. As early as 1965, he wrote:

> In the imagination of those who are sensitive to the realities of our era, the earth has become a spaceship, and this, perhaps, is the most important single fact of our day. For millennia, the earth in men's minds was flat and illimitable. Today, as a result of exploration, speed, and the explosion of scientific knowledge, Earth has become a tiny sphere, closed, limited, crowded, and hurtling through space to unknown destinations….
>
> It is not only that man's image of the earth has changed; the reality of the world social system has changed. Earth has become a spaceship, not only in our imagination but also in the hard realities of the social, biological, and physical system in which man is enmeshed. In what we might call the "old days," when man was small in numbers and Earth was large, he could pollute it with impunity, though even then he frequently destroyed his immediate environment and had to move on to a new spot, which he then proceeded to destroy.
>
> Now man can no longer do this; he must live in the whole system, in which he must recycle his wastes and really face up to the problem of the increase in material entropy which his activities create…. Man is finally going to have to face the fact that he is a biological system living in an ecological system, and that his survival power is going to depend on his developing symbiotic relationships of a closed-cycle character with all the other elements and populations of the world of ecological systems.

Two centuries earlier, the spiritual and ethical insights of another Friend, John Woolman, reached a level that we would call ecological understanding. He observed the physical and spiritual harm that came from economic exploitation: to the exploiter as well as to the people, animals, and land being exploited. He saw "the seeds of great calamity" embedded in the pursuit of wealth and power, and in the economic institutions through which these ends were pursued:

> Wealth desired for its own sake obstructs the increase of virtue, and large possessions in the hands of selfish men have a bad tendency, for by their means too small a number of people are employed in things useful; and therefore they, or some of them, are necessitated to labour too hard, while others would want business to earn their bread were not employments invented which, having no real use, serve only to please the vain mind….

Woolman's views were dramatically opposite to those of moral philosopher Adam Smith, who published *The Wealth of Nations* a few years after Woolman's death. In his analysis of the free market system, Smith maintained that the collective actions of individuals acting in their self-interest serve the best interests of society as a whole. In so doing, he launched the study of economics as an emerging discipline.

The evolution of economics as a discipline has in many respects paralleled the evolution of the economic institutions it studies—of markets, private property, money, banking, corporations, and government. These institutions developed in tandem with new technologies based on the advances of science, which led to the evolution of industrial civilization.

## Economics and Earth Process

The benefits of industrial culture have been truly stunning. Over the past two centuries, industrialization has provided many people with better food and health; a much higher standard of living; and opportunities for the cultivation of individual and societal talent, creativity, and fulfillment. But these benefits have come at great cost to many other people. They have also brought about a more rapid conversion of the earth from an "empty illimitable space" to a "full small sphere," in which human activities tend to be disruptive of the totality of interrelated systems that we call "Earth process."

It is almost 40 years since Boulding identified the need to adapt our society and economy to a smaller and more crowded Earth. Many people are now aware that human economies are interfering with Earth process. Policies have been developed to "protect" the environment, but only a few economists have begun to consider what must be done to fit the now global economy into a limited biosphere. Unlike Boulding, most economists and public officials assume that what worked in the past will solve the problems we face today.

There are now two clear and related trends in the human-human and human-Earth relationship:

- Activities that damage the earth's ecological integrity continue to expand, and environmental disruption, social breakdown, and threats to the health of humans and other species increase.
- Financial wealth and claims to the earth's resources are concentrating in the possession of the already wealthy, while the conditions of life steadily worsen for many impoverished people.

The conventional wisdom that now guides much of economic policy lacks a coherent approach for dealing with either of these related realities.

WHAT IS IT that makes economics a matter of spiritual concern? Economic activity has become an all-encompassing web of relationships. As such, it is a place of continuous spiritual, as well as material, exchange. Our spiritual traditions teach us, above all else, that God is present in relationships. The quality of all our relationships, and of compassion and justice in economic life is vital to the deepest impulses of our faith. This is most obvious in the area of service work, where the quality of what is done is highly related to the quality of the relationships among the people involved. If we take right relationship as the ethical standard of our spiritual tradition, then economic behavior, policies, and institutions are squarely within the circle of spiritual concern.

Economic activity has become an all-encompassing web of relationships. As such, it is a place of continuous spiritual, as well as material, exchange.

If it is difficult to see the connection to the life of the spirit in a concern for economics, it may help to ask a simple question about the human-Earth relationship: "What does the Creator really have in mind?" Doesn't it simply mean, "What kind of economics would nurture the integrity and resilience of the whole of life as God creates it?" If scientifically oriented economists would not pursue this question as phrased, doesn't that illustrate why we need to bring the religious and ethical perspective into the study and practice of economics?

In 1996, the Earthcare Working Group (EWG) of Philadelphia Yearly Meeting came to clearness and unity of purpose that has guided our work to the present: advancing a Friends' witness on ecology and public policy to help transform our society's human-Earth relationship. From the beginning we knew that "…simplicity is not enough" because current economic policy is at odds with ecological sustainability. But we were also clear about the need to first ground our broader concern within the Yearly Meeting.

As we became involved with Friends Committee on National Legislation (FCNL), we discovered that FCNL's witness for peace and justice often tends to stop short of economic policy. One of us who once asked a question was admonished by a seasoned member of the FCNL General Committee, "Friends do not agree on economics." Yet, if economics is a hinge issue for peace, justice, and transforming the human-Earth relationship, Friends need to enable FCNL to deal with economic policies.

Then, at EWG's first meeting after the terrorist attacks of September 11, 2001, it came to us, almost as an epiphany, that whether or not we were well enough grounded within the Yearly Meeting, advancing a specific concern for economics could wait no longer. We are now moving forward in collaboration with Quaker Eco-Witness for National Legislation (QEW-NL), a project of Quaker Earthcare Witness. A six-to-eight session curriculum, Quaker Eco-101: Exploring Economics and Friends Testimonies in an Ecological Context, is in preparation to serve as a tool for churches, Meetings, and others. We hope you will use it as the "next step" beyond this unit in considering what Friends should be doing about economic policies in light of our Testimonies.

## Illustrative activity for Article 1

# Our Ecological Footprint

by Ed Dreby and Hollister Knowlton

(Based on *Our Ecological Footprint, Reducing Human Impact on the Earth,* by Mathis Wackernagel and William Rees. 1996. New Catalyst Bioregional Series, New Society Publishers, Gabriola Island, B.C.)

### Purpose

To illustrate the trends of a) increasing pressures on ecosystems and b) extremes of wealth and poverty, by comparing differing lifestyles in terms of the total amount of the earth's surface and biological production that is appropriated to support them.

### Definition

An "Ecological Footprint" *[see Unit 8 for the Ecological Footprint Quiz]* is a rough estimate of the amount of land that a person would need to support a particular lifestyle if all the food and water, shelter, possessions, energy, and other resources, including the recycling of wastes, were to be supplied by one contiguous parcel of land.

### Explanation

This idea, first used by William Rees and more fully developed by his student Mathis Wackernagel, is to determine how much biologically productive land area is needed to supply all the resources and absorb all the wastes generated on a continuing basis by a particular population or lifestyle. Although a population occupies a territory, it uses resources from all over the world. The ecological footprint is the combined size of these areas, wherever they may be on the planet. The idea was first applied to a *region*. For example, the region that includes Vancouver, B.C., where the concept was initially developed, uses resources requiring *19 times* as much land as the region itself. London, which is more densely populated, would need a land area *200 times* the size of the city. The per-capita footprint is calculated by dividing the size of the population into the total land area required to supply it.

Wackernagel, Rees, and their colleagues have now calculated per-capita "ecological footprints" for numerous *cities* and *countries*, based on the total number of people and total consumption of goods and services. "Ecological footprints" can also be used as a way to illustrate the relationship between the *total human use of the earth's resources* and *the earth's carrying capacity,* as well as *what an equitable distribution of the earth's resources would be.*

*There is currently enough land for each human to use the goods and services provided by 4.5 acres.*

*How much are we humans actually using? Who is using how much? How do Friends testimonies relate to these questions?*

### How much usable land is there? What is the "fair share"?

THE TOTAL SURFACE AREA of the earth is a known quantity—approximately 126 billion acres. The exposed land surface area is roughly 36 billion acres. Subtracting for land that is desert, built- over, paved, or covered by ice or fresh

water, about *28.5 billion acres* remain available to share.

With 6½ billion humans, if we were to share equally (on a sustainable basis, with no space provided exclusively for wildlife) there is currently enough land for each human to use the goods and services provided by 4.5 acres. How much are we humans actually using? Who is using how much?

How do Friends testimonies relate to these questions?

In addition to the calculations that have been done for various cities, regions, and nations, you can calculate your own footprint at two different web sites: <*http://www.earthday.net/footprint/index.asp*> and <*http://www.lead.org/leadnet/footprint*>. Remember that an ecological footprint is a rough approximation, not a rigorous measure, and that the size of a particular person's ecological footprint is determined by a combination of personal decisions made by individuals, and societal decisions over which individuals have little control.

## Ecological Footprint Exercise

### Preparing for the exercise and discussion

- Using the chart below, prepare enough index cards for the group (unless it is too large).
- Prepare one card for "World Average" (5.7 acres) and for "Fair Share" (4.5 acres).
- On the other cards, write the name of a country, and the average per-capita ecological footprint. Paperclip one piece of scrap paper for each acre to the card (8½ x 11 is a good size). With a small group, be sure to include at least the cards for World Average, Fair Share, U.S., Germany, China, and Mozambique. (Persons given cards with small footprints can receive multiple cards).

Average Per-Capita Ecological Footprint, by Country from Redefining Progress, Ecological Footprint Accounts, 2002, <*http://www.redefiningprogress.org*>

| | | | |
|---|---|---|---|
| United States | 24 acres | Mexico | 6.0 acres |
| Norway | 20 acres | Turkey | 4.9 acres |
| Canada | 17 acres | Thailand | 4.2 acres |
| Australia | 17 acres | Egypt | 4.0 acres |
| U.K. | 14 acres | China | 3.9 acres |
| Austria | 14 acres | Ecuador | 4.0 acres |
| France | 13 acres | Philippines | 3.2 acres |
| Germany | 12 acres | India | 1.9 acres |
| Spain | 12 acres | Bangladesh | 1.4 acres |
| Switzerland | 11 acres | Mozambique | 0.5 acres |

World Average—5.7 acres  Fair Share—4.5 acres

- Read with participants the definition of ecological footprint. Review the concept and where the figure of 28.5 billion acres comes from. Show them the paper and explain that one sheet equals 1 acre. Sheets can be folded to approximate partial acres.
- Give each participant a card. Ask them to lay out the paper—edge to edge—to represent the "footprint" of the country card they are given, and then stand by it.
- When they are ready, point to various participants and ask them to introduce themselves (by country) and tell their ecological footprint size. Save World Average and Fair Share for the end.
- Ask participants for observations and thoughts. If they need prompting, ask:

### Questions

1. What do you notice about the Fair Share versus the World Average?
2. Which countries are using less than the Fair Share?
3. Why is the U.S. average so high?
4. Are there ways we can reduce our ecological footprint?
5. What do our Quaker Testimonies tell us about this situation?

### Some key points

- It would take about 1¼ Earths to sustain the existing human ecological footprint.
- It would take more that 2 Earths to sustain all 6½ billion humans if the per-person ecological footprint becomes the average in industrialized nations.
- It would take more than 3 Earths to sustain all 6½ billion humans if the per-person ecological footprint becomes the average in the U.S.
- The difference between the U.S. average and the industrialized nation average is primarily because of the greater per-person use of energy in the U.S.
- Differences in the sizes of the ecological footprints within nations are comparable to the differences between nations.
- As the human population grows, the Fair Share necessarily becomes smaller.
- As the size of the human economy grows, the World Average becomes larger.

## Article 2

# Modern Economies and Earth Process

AS STATED IN ARTICLE 1 and illustrated by the Ecological Footprint Exercise, there are two dysfunctional trends occurring in today's increasingly globalized economy:

- The expansion of human economic activities is damaging more ecosystems, regionally and globally.
- The extremes of wealth and impoverishment are increasing.

While economic expansion has a direct and obvious effect on ecosystems and resources, so does impoverishment and excessive wealth. Both contribute to violent conflicts, which in turn devastate ecosystems. If one considers cause and effect, concerns for peace, social justice, protection of the earth, and an economics of Earth stewardship and right sharing are all intertwined.

## Elements of an economic system

TO CONSIDER these trends in more detail, it is important to identify several distinct elements of any modern economy:

### Markets

A simple definition of a market is the process of exchange of money for a particular kind of good or service between many buyers and sellers. If there are many buyers and sellers, prices are apt to be only as high as necessary to provide a fair return to the sellers. Most people no longer make most things for themselves. For this reason, it is essential that markets function—that exchanges keep taking place—the society to prosper. In a modern industrial economy there are a huge number of markets. In addition to markets for goods and services, there are markets for land, labor, savings, and a great many different kinds of financial securities.

### Capital

A simple definition of capital is wealth used to increase the ability to produce. What economists mean by physical capital, or real capital, is the tools, machinery, factories, trucks, roads, and stores that make it possible for goods and services to be provided through markets to people who want them. Economists distinguish physical capital from financial capital. Some economists also identify natural and social capital as elements of the economic system that need to be given more consideration.

### Investment

A simple definition of what economists mean by an investment is spending for new physical capital: a new tool, machine, factory, truck, road, or store. If the investment is successful, there

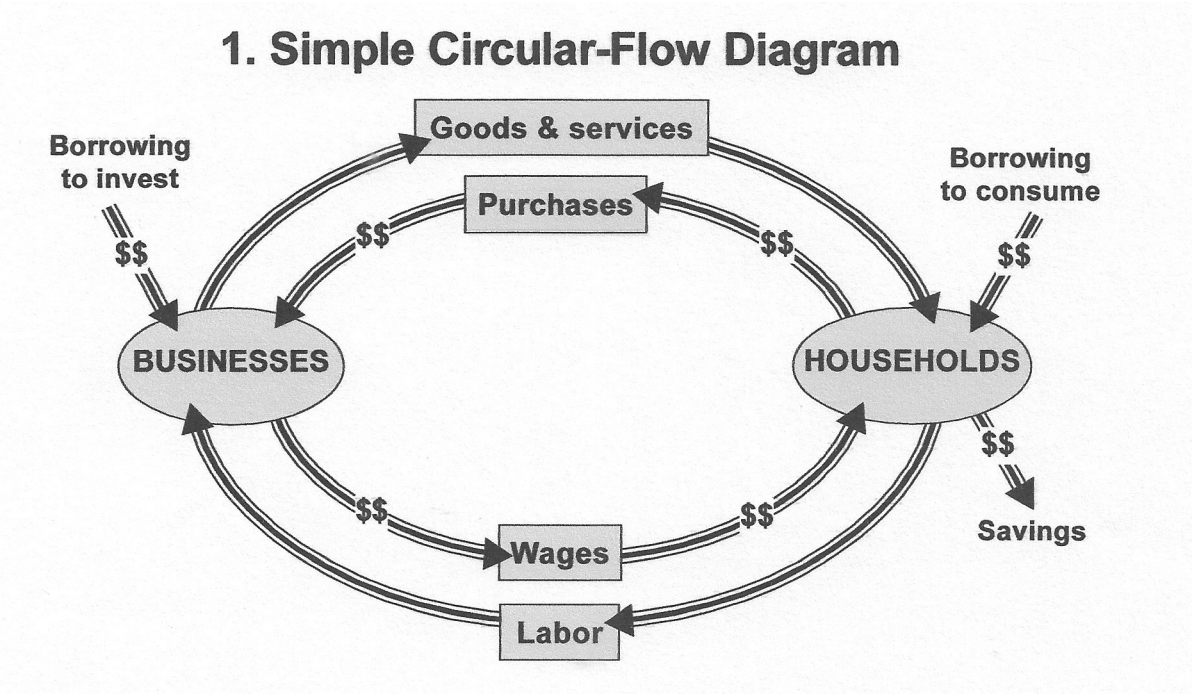
will be an increase in the goods or services provided by markets to people who want them, and a profit for the investor. To an economist, financial capital is savings invested in physical capital.

## Interest

A simple definition of interest is money that a borrower pays a lender in exchange for being able to use the borrowed money. When someone puts savings in a bank to earn interest, they are actually lending it to the bank. The business of the bank is to lend the money to someone else who is willing to pay a higher rate of interest on debt, some of which goes to the depositor and the rest of which goes to the bank.

## Why do modern economies tend to expand?

THERE ARE MANY EXPLANATIONS for the expansion of industrial economies, and for the sense that prosperity is at risk if they don't expand. There is controversy among economists about the usefulness of various explanations. But there are two reasons for expansion that are basic to the system itself. One is that both producers and governments tend to promote new investment to maintain market activity. The other is that borrowers need to expand their earnings to pay interest on their loans. These reasons are most easily explained in the context of the Simple Circular Flow Diagram that is included in every introductory economics textbook.




## Promoting investment to maintain market activity

WHEN PEOPLE DECIDE to save part of their income instead of spending it for goods and services, the savings are withheld from markets, at least temporarily. This is illustrated by the Figure 1, the Simple Circular Flow Diagram. If savings are deposited in banks, which lend them to other households for consumption and/or to businesses for investment, the money is returned to the circular flow and used for the purchases of consumable and/or capital goods and services.

However, if savings are withheld from the banking system, or not loaned by the banking system for spending, the level of demand for goods and services will decline. This may result in a downward spiral of declining production, employment, income, and purchases. It is one of the reasons there is so much impetus, by governments to encourage businesses to borrow for investment, and by both businesses and government to encourage consumers to borrow for consumption.

## Increasing earnings to pay interest

WHEN SAVINGS ARE USED in a way that earns interest, they are returned to the system by the borrower, who must then do something to pay back the loan plus the interest. If the borrower is a household, members of the household must earn more money in the future than they did in the past to pay off the debt. If the borrower is a business and the loan is used to buy new capital equipment, increased production from the equipment must provide the earnings to pay off the debt.

Either way, the need to pay back loans plus interest creates pressures for economic activity to expand, and *most new production is apt to expand the economy's use of energy and material resources*.

## Do all economies have to expand?

IT WOULD CERTAINLY be possible to devise economic policies so that savings can be used for investment and other purposes without driving economic expansion. Many people think of the free enterprise system as a monolithic entity. In reality, every modern economy uses a distinctive variety of ways to make four basic types of decisions.

The four types of decisions are:

1. How much labor, capital, and resources from land are used to produce how much of what kinds of goods and service?

   Three interacting ways can be readily distinguished:

   - By markets, i.e., by voluntary exchange at a price by private parties as buyers and sellers.
   - By intentional planning, i.e., by a public agency or cartel dealing with the workings of the economy.
   - By dissociated fiat, i.e., by an executive, legislative, judicial, or non-governmental decision made for other reasons, to which the economy must adjust.

2. Who owns and profits from the society's physical capital, its "means of production"?

   Three general forms can be readily distinguished:

   - Ownership tied to the ownership of land, the basis for feudalism.
   - Private for-profit ownership by individuals, partnerships, corporations, or cooperatives.
   - Ownership by public entities such as a community or a nation.

3. How is money created and managed?

   Three ways, among others, can be distinguished:

   - Most modern money is created by banks when they credit accounts with new loans (debt) on which interest is paid to the banking system.
   - Money can be created directly by governments, and its creation can be unrelated to earning interest, as with coinage minted and bills printed and circulated by governments.
   - Local currencies, created by community groups, are being successfully used in Canada, the United States, and many other countries.

4. How are decisions made about the economy's legal framework and management?

   These can be made at different levels, by different processes, and for different purposes, as in:

   - At the community, regional, national, or global level.
   - By executive, administrative, judicial, legislative, or electoral process.
   - Based on priorities involving considerations such as: a) the interests of financial investors, producers, employees, and consumers, b) differences in income, age, and responsibility, and c) protection of human and ecosystem health.

By identifying these separate types of decisions, and the variety of ways they are made in modern economies, a variety of considerations that often come wrapped in a single package can be unbundled. How each affects the economy as a whole can then be considered separately. Using a single label like "capitalist" or "socialist" to characterize a society or a viewpoint does little to promote understanding of the way that a system actually works, or how markets might be changed to function differently.

## The role of government

EVERY GOVERNMENT has policies that affect the distribution of income and wealth. Some policies accentuate the tendency for wealth to accumulate; others moderate this tendency or may even counterbalance it. However, *no government of an industrialized country is trying to redesign its economic system to function within ecological limits.* People in industrial societies expect to earn a high return on their savings, and this simply isn't possible unless the economy expands. Furthermore, in the globalized economy, no government would be apt to succeed in redesigning its economy unless all governments were to do it together.

Perhaps one reason that so many people expect to earn high returns on their savings, and don't consider the effect this will have on the earth, is that we tend to see the economy as illustrated by the Simple Circular Flow Diagram on page 175, *and the earth is simply missing from this model.* All the diagram shows are the markets, as though, to use Boulding's phrase, the resources from land come from, an illimitable Earth.

## The need for a different understanding of the economy

AN EMERGING FIELD of *ecological economics* uses a different model, presented in Article 3, that places the economy in *a larger context of the society and the earth.* This model incorporates many *other kinds of capital* that provide resources for producing goods and services.

Corporations are now concerned about having international agreements to protect their property rights in intellectual capital: the new knowledge they have paid to develop. Ecological economists also identify other kinds of capital, including: *a) Natural capital* (natural resources and eco-system services), *b) Human capital* (knowledge and skills of individuals), and *c) Social capital* (social order provided by families, communities, and civil society). These are shown in the diagram of Economics in its Ecological and Social Context on page 183.



They each provide flows of material and/or energy into the market economy, and receive flows of material and/or energy back from the market economy in differ- ent forms. Some of these flows are recognized by the market system and are included to some degree in prices. Others are not. Some of these flows help maintain the productivity of the capital stock that provides them. Increasingly, many do not.

It is fairly easy to understand that if an economic system is to prosper, its stock of *physical capital*—its tools, machines, factories, trucks, roads and stores— *must be maintained or replaced*. A company that begins selling its machinery without replacing it, that begins to "liquidate" its capital stock, will produce fewer goods and services. Its ability to receive income from its capital stock will surely decline.

Ecological economists observe that *this is also true of natural and social capital.* If the ability of the natural and social capital stock to provide resources to the economy is not maintained, the economy will decline. At present, *economic theory views natural and social capital as "externalities,"* which means they are external to the market system and not a part of the models on which most economic theory is based. Policies can be devised to "account" for these stocks as part of the whole economy, and to be sure that they are maintained and protected by the economic system

Many economists have yet to embrace the idea that natural and social capital need to be

*Our modern way of life has been based on the assumption that the environment is part of the economy. We are now realizing this assumption is an error and that the human economy is actually a part of the environment—a wholly owned subsidiary of Earth's biosphere.*

fully integrated into economic models. Many political leaders, and the public at large, are concerned about dealing with social and environmental problems. But *few people think about the need to invest in the economy's natural and social capital as an alternative way of understanding the causes of social and environmental problems*. One thing is certain: If an economic system continues to expand, and doesn't concern itself with maintaining and protecting the stocks of natural and social capital as well as the man-made capital on which it depends, sooner or later it will go out of business.

Modern economics is based on the assumption that the environment is part of the economy. *We are now realizing this assumption is an error*. The human economy is actually a part of the environment—a wholly owned subsidiary of Earth's biosphere. This recognition creates a profound upheaval in our understanding of the human-Earth relationship and in our relationship with the Creator.

Our relationship with the Creator is closer than we previously imagined. We are not dealing with "an ancient of days" that once long ago set the life of Earth in motion, but rather with *the continuous emergence, manifestation, and unfolding of the Creator in the midst of Earth's communities of life*. This understanding of relationship goes to the core of human identity within Creation. Adapting our economics to the requirements of respecting and protecting all life is a matter of deep spiritual significance and religious responsibility. Human economic and social life is inseparable from the integrity of Creation, and this insight brings *the ethic of Earth stewardship* into clear focus.

## Illustrative activity for Article 2

## The King and the Wiseperson: Exponential Growth in Mathematics and Human Societies

### Preparing for the exercise and discussion

### Materials needed

- Chessboard
- Pint container full of unpopped popcorn
- 1-oz. medicine cup or 1/8-cup coffee scoop
- Lid to pint container or similar lid

### Set-up

Put the chessboard on a table where people can gather to see it. Fill the medicine cup with popcorn, and put some kernels in the lid. Put the medicine cup and pint container in the middle of the chessboard, and put the lid to the side. To understand the square numbers on the chessboard, consider the upper-left square to be Square 1 and then count across to the right, down a row and back to the left down a row and back across to the right and so forth. Recruit a narrator, a wise person, and a servant. You be the king.

### Exercise

Narrator A simple example of exponential growth, and how it can surprise us even when we understand its possibilities, is a story told of the ancient wise man who invented chess. The king was so pleased with the game that he wanted to reward the wise man

handsomely, and asked him to choose anything in the kingdom he wanted. The wise man knew the king's people were hungry and that the king was selfish, so he decided to trick the king to help the people. All he wanted, he said, was a grain of rice on the first square to be doubled on the second, doubled again on the third, and so on for each square on the board. The king couldn't believe the wise man would ask for so little, so tried to get him to ask for something more. But the wise man said he was offered whatever he wanted, this was all he wanted, and he knew the king was a man of his word. So the king ordered a servant to bring a basket of rice and to begin counting out the reward.

King This is a wonderful game. How can it be that this is all you want as a reward? You can have gold—or a palace of your own—anything! (Wise person ad lib_____) Okay, you silly wise person, have it your way. Servant! Bring rice and give him/her his/her reward. Put one kernel on Square 1, two kernels on Square 2, four kernels on Square 3, eight kernels on Square 4. (Ad-lib as led, and on Square 4 say, "Come on! Hurry up! We don't have all day!")

Stop the servant in the middle of Square 5 and ask people to guess which squares the medicine cup (9) and pint container (13) go on. Refer to the numbers at the end of this unit, and let them sink in.

## Discussion of exponential growth

- Refer to the information in the box about Pax World Balanced Fund, a "socially responsible" fund that many Friends are familiar with (and in which the authors have invested their savings). Note that the fund's performance since 1983 is such that if all earnings were reinvested, every $1 invested in 1983 would now be $3.
- Ask what the effect is apt to be if a large number of people have savings that increase in this way? When they decide to spend their savings, where would all the additional goods and services come from that they can now buy?

### Pax World Balanced Fund

Average annual total returns
as of June 30, 2003

| | |
|---|---|
| 1 year | 3.07% |
| 3 year average | 2.66% |
| 5 year average | 4.18% |
| 10 year average | 9.59% |
| 15 year average | 10.17% |
| 20 year average | 10.40% |

A quick rule of thumb for estimating how many years it takes for invested money receiving compound interest to double, then double again, is to divide the rate of interest into 70.

From PAX World Fund
Semi-Annual Report
Fall, 2003

## Questions

1. What does this suggest about the effect that compound interest has on the distribution of wealth in the national and global economies? On the ecological damage caused by human activities?
2. How long can the amount of savings invested at compound interest increase before the system becomes destabilized? How long can governments manage the system to keep it functioning without a major crisis? How big does a crisis have to be before it becomes major?
3. If enough people voluntarily reduce the amount of gasoline they buy to lower the price of gasoline, how might other people respond? How might businesses respond?
4. If a lot of people voluntarily reduce the amount of everything they buy, how might other people respond? How might businesses respond?

## Query

What do our Quaker testimonies tell us about unlimited growth?

*Note: If people seem to be overwhelmed by these issues, you may want to read together the section on "Ways Forward" in Article 3, followed by a time for reflection and discussion or worship-sharing.*

## Article 3

# Cycles and Growth in Nature and Human Economies

THE EARTH is for all practical purposes *a closed and limited physical system*. It receives energy from the sun and radiates energy into space. Except for occasional meteorites and rockets, no physical material either enters or leaves the earth.

God's miracle of life has used the sun's energy to create increasingly complex communities of life that interact with one another and with the earth itself in self-sustaining and transforming ways. Water circulates throughout ecosystems, as do carbon, nitrogen, oxygen, and all the other physical constituents of the ecosphere. While the law of the jungle—and of modern corporations—may be "eat or be eaten," the law of self-sustaining life is "eat *and* be eaten," which is to say that everything is recycled. Life is sacrificed so that new life can be created. Every critter's wastes and remains become some other critter's food.

While the law of the jungle—and of modern corporations—may be "eat or be eaten," the law of self-sustaining life is "eat *and* be eaten,"

Everything either remains in balance over time, or changes over time, until a balance is created. That evolving life has participated in creating a resilient and evolving balance on Earth over several billion years is part of God's timeless miracle. *What sacrilege could be greater than to knowingly participate in the unraveling of the fabric of life without trying to stop what is happening?*

## Growth and adaptation in nature

LIFE'S CAPACITY for self-reproduction entails an inherent potential for population growth. It also entails a contrasting potential, on which life's survival depends, for adapting to environmental limitations and participating in complex ecosystems. Single-cell organisms that reproduce by cell division double their numbers with every generation. Repeated doublings enable populations of bacteria, for example, to expand very quickly, almost explosively—an example of what mathematicians refer to as *"exponential growth."* Limitations of habitat, usually the availability of food, control the population by balancing the reproduction of some by the death of others. Otherwise, the expanding population may crash to extinction or decline to survive in a smaller ecological niche.

The potential for exponential growth of single-cell organisms appears to have transformed the nature of life on Earth at least twice. The first time was a population explosion of organisms that excreted carbon dioxide and over time created an atmosphere in which carbon dioxide was the dominant gas. The second time was a population explosion of organisms that evolved to consume carbon dioxide and excrete oxygen, thus creating an atmosphere with an increasing amount of oxygen. Still newer organisms then evolved, with multiple cells and increasing complexity: organisms that consume oxygen and excrete carbon dioxide, and thus a chemically and thermodynamically stable atmosphere was created. Many of these new complex creatures reproduced sexually. (See Unit 17 for a more detailed explanation.)

Sexual reproduction provides for greater genetic diversity and for evolution by natural selection through the differential production of offspring. The combination of *genetic diversity* (every critter's body and behavior is not quite the same as any other's) and *differential production* of offspring (the genes of those who produce more offspring are more prevalent in shaping the bodies and behavior of the next generation) enables species to adapt to changing environments and to co-evolve with other species. It also provides for possibilities that two parents may have one, two, five, seven, or hundreds of offspring as part of the means by which populations of

various creatures and their overlapping habitats maintain balance over time.

## Growth and adaptation in human culture

CULTURE has enabled humans to transcend the limitations of specific habitats—at least for a time. Like life itself, culture offers potentials for both exponential growth and sustainable balance. While many simple cultures seem to have developed a sustainable balance with their surrounding ecosystems over long periods of time, complex civilizations generally have not developed such an ecological balance. Instead they have become weakened—through expansion, gradual degradation of their land, or both—leading to collapse, conquest, and/or migration to a new location.

While many simple cultures seem to have developed a sustainable balance with their surrounding ecosystems over long periods of time, complex civilizations generally have not.

Today we see the physical expansion of human enterprise without any consideration of ecological balance. With no "empty places" left to settle, we face the limitations of the global habitat. Any list of environmental problems points to an underlying ecological reality: Industrial societies not only fail to participate in complex ecosystems, but are causing their disintegration and destruction. We can see characteristics of exponential growth not only in human numbers, but also in the quantity of human artifacts, our consumables and possessions, the machines we use to make them, and the volume of money we create.

Clearly the human population cannot continue to grow forever. Nor can the amount of land humans use or the number of houses or cars or roads or factories we build. Between 1920 and the present, world population has tripled. During this same period, U.S. paper consumption has increased 12-fold with all of the environmental impacts this entails. Both population and the use of energy and resources continue to increase. However, the population growth rate is declining, while public policies continue to promote economic expansion as a solution to our problems, i.e. "growing the economy." Earning high rates of return on savings has become an expectation to which most citizens believe they are entitled.

## Illustrative activity for Article 3

AS DISCUSSED EARLIER in this unit, over the past 200 years the economic institutions and policies of industrialized societies have evolved in ways that promote economic expansion. This places increasing pressure on natural resources, while ignoring the inherent limits of those resources. Many people are aware of serious social and environmental problems that are related to economic growth, but few people are integrating ecological realities into their economic thinking.

## Question for discussion

COMPARE THE TWO DIAGRAMS, the Enhanced Circular Flow, and Economics in its Ecological and Social Context on pages 182 and 183. What observations can you make about their similarities and differences? What questions do the similarities and differences raise for you?

## Specific questions and key points about the "Enhanced Circular Flow"

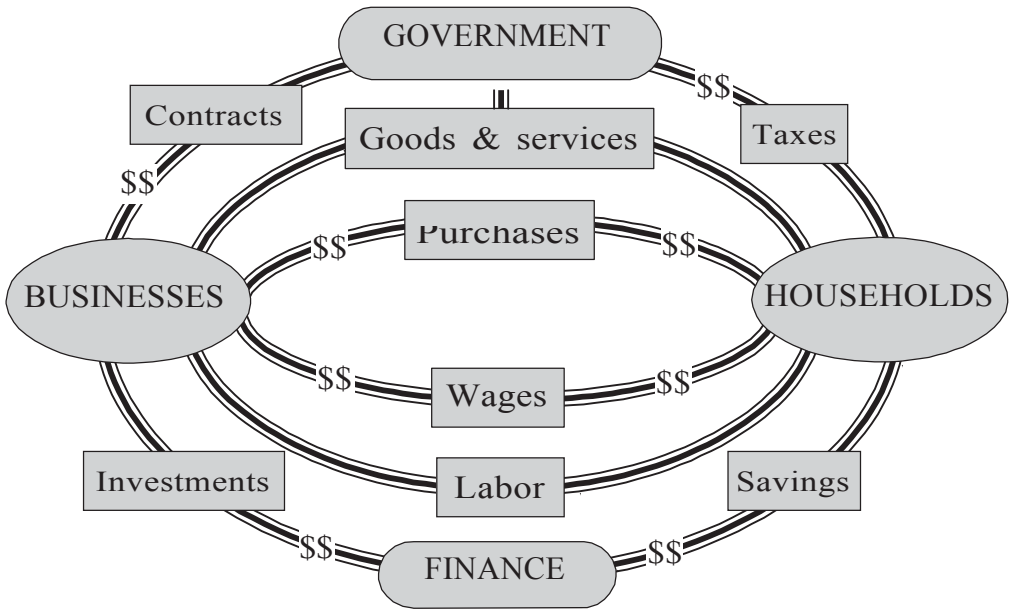
1. Ask what the arrows represent.
2. Note that the role of government and finance is included in the circular flow, but there is nothing in it about national debt and international trade and investment. Ask how

national debt and international trade and investment might affect the circular flow.

3. Note that there is nothing in the diagram that shows energy or material resources coming into the circular flow, or that shows anything leaving it.

   a. Explain that the *biosphere* is that part of the atmosphere and the earth inhabited by life, and the *lithosphere* is the earth's crust below the level inhabited by life.

# 2. Enhanced Circular-Flow Diagram




b. Ask what economic activities can increase without causing a direct or indirect increase in the flow of concentrated energy and/or material from the biosphere or lithosphere into the system and of dissipated energy and/or material back into the biosphere?

4. Remind Friends that trends toward expansion are an inherent part of the system in its present form. Ask what happens to the earth as economic activity expands.

## Specific questions and key points about "Economics in its Ecological and Social Context"

1. Ask what the arrows represent.
2. Note that solar energy flows into the biosphere and that dissipated heat flows out of it. Ask the following questions:

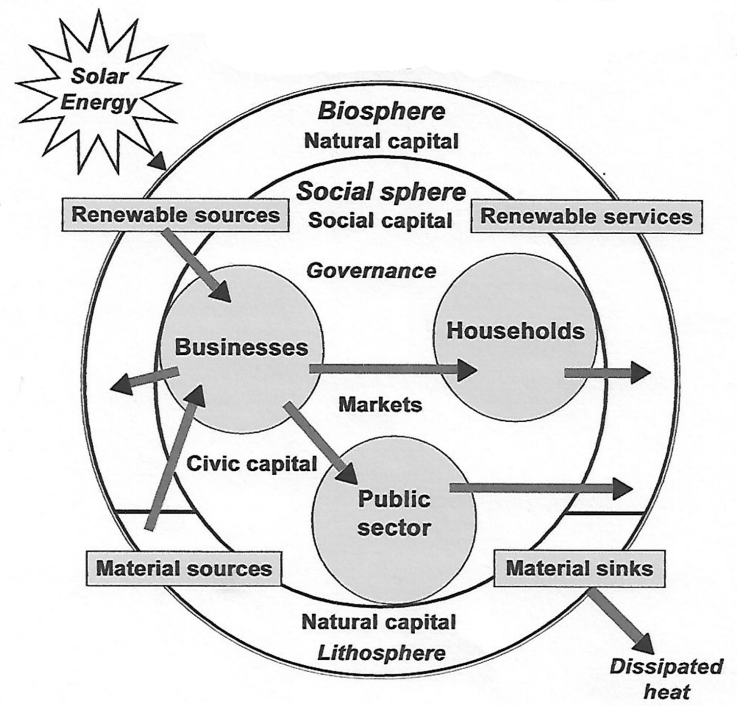
   a. What happens if less energy flows out of the biosphere than comes into it?
   b. Why might this happen?
   c. If material sources from the lithosphere are added to the biosphere and are used for energy, what might happen?

3. Note the following points:

   a. The flow of solar energy is, on a human scale, constant and fixed.
   b. There is a limit to how much solar energy can be captured and concentrated, and that energy must be used to capture and concentrate energy.
   c. If human economies must eventually run on solar energy, we need to think of economic efficiency as energy efficiency, i.e., using ingenuity and technology to do as much work (concentrating energy and materials) as possible with as little energy as possible.

4. Note that material flows from the biosphere and lithosphere into the social sphere and from the social sphere into the biosphere. Ask the following questions:

# 3. Economics in its Ecological and Social Context




a. What happens if the material flows from the lithosphere are returned to the biosphere rather than to the lithosphere?
b. Is a landfill part of the lithosphere or of the biosphere? (Refer to the definition of biosphere and lithosphere if necessary.)
c. What material is returned from the biosphere to the lithosphere or the biosphere?

5. Note the following points:

   a. There may be a lot of material resources in the lithosphere—ores, minerals, oil, and coal—but that, for the most part, they can be removed only once.
   b. The resources that are easiest to get are taken first, so that as more are used increasing amounts of energy are required to obtain them.

6. Note that the material resources from the biosphere have the possibility of regenerating themselves, so that humans can use them on a continuing, or sustainable, basis. Ask:

   a. What conditions are needed if these resources are to be available on a continuing basis?
   b. What might lead the future supply of renewable resources to be diminished?
   c. What might be done to increase the future supply?

7. Note the following points:

   a. The more materials can be recycled within the social sphere, the less material will be needed from the lithosphere, and the less dissipated material from the lithosphere will be introduced into the biosphere.

b. In nature, every creature's wastes and remains are another creature's resource, and that the production of goods and services can be designed to copy nature.
c. If material resources are limited, we need to think of economic productivity as resource productivity, i.e. using ingenuity and technology to keep them recycling in the social sphere as long as possible.
d. We need to return material to the biosphere only in forms and amounts that can be recycled by renewable services.




8. Note that the diagram of Economics in its Social and Ecological Context on page 183 does not show flows of money, in part because, from an ecological perspective, the systems needs to function (as it is currently not functioning) so that the incentives of money:

   a. Maximize energy efficiency and resource productivity.
   b. Minimize the use of material resources from the lithosphere, and
   c. Limit the use of energy to the solar supply and the use of renewable resources to their regenerative capacity or sustainable yield.

Ask whether Friends have ideas about:

   a. How money incentives might maximize energy efficiency, resource productivity, and living within limits that protect the regenerative capacity of renewable resources.
   b. How money incentives might be used to invest in natural capital.

9. Note that social capital involves beliefs, values, motivations, skills, and knowledge that create social order and enable people to thrive in families, communities, and economies. Ask how market activities relate to the uses, the maintenance, and the increase or depletion of social capital, and specifically of human capital (individual qualities) and civic capital (effective governance).

## Key points about both diagrams

Neither diagram considers:

a. How goods, services, and money produced by economies are distributed among members of societies.
b. How the earth's nonrenewable resources are distributed among present and future generations.
c. How the earth's limited supplies of renewable energy and material resources should be distributed among human and non-human populations.

## Questions for reflection

- Why is simplicity in lifestyle not enough to bring human activities into balance with Earth process?
- How can the governance of markets and money be developed so that human economies use as little energy and material as possible, and maintain the stocks of natural and social capital, or even increase these stocks?
- Why is it that the American Friends Service Committee, Friends Committee on National Legislation, and other Friends organizations find dealing with economic issues to be difficult?
- Why are there many differences of opinions among Friends about economics, and why do Friends so rarely talk with one another about these differences?
- What do Friends need to learn more about, as individuals and as communities, in order to come to clearer understanding and greater unity about how economic policies work?
- How can we integrate concerns for relevant economic policies with our witness for peace, justice, and an Earth restored?

## Challenges and ways forward

AT WHAT POINT will the physical expansion of human economies, as well as the policies and institutions that drive expansion, become recognized as a fundamental ecological problem? It is truly challenging to consider the evidence that the basic ways that markets and money currently function may underlie the damages humans are inflicting on Earth process. It is painful in the extreme to think of the possibility that things we have been taught to do for ourselves, for our loved ones, and for society as a whole are part of the problem.

This realization can be truly overwhelming. It can also take us back to the spiritual roots of our faith, to the conviction that if we but ask, individually and corporately, the Spirit will lead us forward and ways will open. We also may find helpful the ideas of three religious leaders, known to many Friends, about acknowledging and moving beyond pain and despair to hopeful and faithful engagement:

- Joanna Macy (Buddhist author and activist) suggests that only if we open ourselves to the full extent of the devastation that is occurring, and allow ourselves to experience the pain of being open to it, we will be able to move beyond pain to meaningful action.
- Thomas Berry (Catholic priest and scholar) cautions against thinking that our environmental problems are caused by evil people. While there will always be evil people, our predicament comes as a result of a great many good people who have been doing a very good job of what they are expected to do.
- John Cobb (Methodist minister and theologian), when asked about the prospects for the future, responded that he was not optimistic, but that he was *hopeful*— because he believes in miracles: With God's guidance, human beings who are faithful can do what may seem impossible. We need only to ask God for help to be faithful to our understanding of what we must do, so that the miracle may happen.

There are many ways forward that people are already engaged with, and that need to be supported. These include technologies associated with sustainable agriculture, sustainable design, and sustainable energy, and policies involving tax-shifting, tradable permits, and mandatory recycling of products by their manufacturer.

An essential step is to focus on how changes in our economic policies can open doors to the future without negating the efforts, accomplishments, and sacrifices that have already been made. The emerging field of ecological economics is developing models and analytic tools to integrate human economies with Earth process. The diagram of Economics in its Social and Ecological Context illustrates some features of these models. A central task of public policy is to engage our society's full energies and best minds in developing these models and tools, and bringing their possibilities to fruition.

We believe Friends have an opportunity, as we have at earlier times in our history, to be a witness for truth that will help make possible an essential transformation in humanity's understanding of our place on God's Earth, our home. Only through such a transformation in understanding can progress be made toward a society grounded more fully in the collective spiritual consciousness that Jesus embodied and taught. ❖

## Prayers and responsive readings

O God of all creation, enlarge my heart and enlarge the hearts of my fellows with such a tenderness for all creation that we shall dare to speak up for all our fellow creatures and for the precious natural world that sustains them.

—Douglas Steere, 1966 Pendle Hill Pamphlet
*Prayer in the Contemporary World*

*Leader* *The high, the low,*
*all of creation, God Gives to human kind to use.*
All Praise be to God.
*Leader* *If this privilege is misused,*
*God's Justice permits creation to punish humanity.*
All Praise be to God.
*Leader* *With nature's help*
*humankind can set into creation all that is necessary and life sustaining.*
All Praise be to God.
*Leader* *God's majesty is glorified*
*in the manifestation of every manner of nature's fruitfulness*
All Praise be to God.
*Leader* *This is possible,*
*possible through the right and holy utilization of the earth,*
*The earth in which humankind has its source.*
All Praise be to God.
*Leader* *The sum total of Heaven and Earth,*
*everything in nature, is thus won to use and purpose.*
All Praise be to God.
Leader It becomes a temple and altar for the service of God.
All Praise be to God.
*Leader* *God has arranged all things in the world*
*in consideration of everything else.*
All Praise be to God.
*Leader* *All nature is at the disposal of humankind.*
*We are to work with it.*
*Without it we cannot survive.*
All Praise be to God.
*Leader* *I have my home on high,*
*I meet every creature of the world with grace.*
All Praise be to God.
*Leader* *God desires that all the world be pure in his sight.*
*The earth should not be injured.*
*The earth should not be destroyed.*
All Praise be to God.

—Adapted from Hildegard of Bingen

Answers to the "King and the Wise Person" exercise from page179:
Square 9: Pill cup with *256* kernels.
Square 17: Trash can with more than *32,000* kernels.
Square 25: 1,000-gallon tank with more than *8,000,000* kernels.
Square 64: 200 *trillion* 55-gallon barrels, with more than 10 *quintillion* kernels!

## References: Unit 15. Earth Economics


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## Other resources

- *Quaker Eco-101: Exploring Economics and Friends Testimonies,* a six-session curriculum for Friends churches, meetings and other groups. It is intended to help Friends gain a clearer understanding of the relationships among markets, money, and government policies, of differing perspectives about economic models and policies, and of issues and opportunities to consider. It includes a number of articles by Friends, and a more extensive bibliography. See *<http://www.QuakerEarthcare.org>,* or contact Ed Dreby at 609/261-8190.
- Quaker Eco-Bulletin, published bimonthly by Quaker Eco-Witness in National Policy, is distributed by e-mail, and with *BeFriending Creation*. See *<http://www.QuakerEarthcare.org>*.
- Work in progress: *Of Human Wealth: Beyond Greed and Scarcity,* by Bernard A. Lietaer and Stephen M. Belgin. For advance ordering information write: *HWBT@accessfoundation.org.*

# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 16

## Earth Awareness, Earth Activism

by Bill Cahalan and Ruah Swennerfelt

### Purposes of this unit

1. To help us relate to nature at a deeper, spiritual level.
2. To help us recognize and perhaps reduce the "armoring" that blunts our full awareness of nature.
3. To offer some regular practices that can make spiritual relationship with nature more a part of our everyday life.
4. To help us discern our own path of activism in preserving and restoring the natural world.

### Sacred texts and other inspirational readings

*And why do you worry about clothing? Consider the lilies of the field, how they grow; they neither toil nor spin, yet I tell you even Solomon in all his glory was not clothed like one of these.*

—Matthew 6:28–29

*The Lord will guide you continually,*
*and satisfy your needs in parched places,*
*and make your bones strong;*
*and you shall be like a watered garden,*
*like a spring of water,*
*whose waters never fail.*

—Isaiah 58:11

Remember thy creator in the days of thy youth. Rise free from care before the dawn, and seek adventures. Let the noon find thee by other lakes, and the night overtake thee everywhere at home. There are no larger fields than these, no worthier games than may here be played. Grow wild according to thy nature, like these sedges and brakes, which will never become English hay.

—Henry David Thoreau

### Hymns and songs

O God of All Creation. *Worship in Song, A Friends Hymnal,* #18, first verse.
When I Needed a Neighbor. *Worship in Song, A Friends Hymnal*, #293.
That Cause Can Neither be Lost nor Stayed. *Worship in Song, A Friends Hymnal*, #264.

WHEN EITHER OF US holds meetings and leads workshops on Quaker Earthcare, if there is time we open by inviting people to share an experience in nature that was special or meaningful to them. There is normally a wide range of responses, but their stories are always very gratifying. One person might recall lying awake in awe and fright one night as a powerful electrical storm raged outside. Another might relate a sense of kinship with a wild animal encountered in the woods.

*In the simplest terms, natural awareness is the process of opening our hearts to the Divine in creation.*

The fact that such events are fairly rare in most people's lives is instructive as well. Becoming "civilized" means literally to isolate ourselves within the defensive walls of urban life and perhaps to regard the rest of the natural world as something alien and threatening. We no longer have the intimate association with nature that was common in pre-industrial times. In the supportive environment of our workshops, however, there may be momentary relaxing of psychic defenses, through which we can discern possibilities for reconnection to the world of wonderful earthy realities.

The purpose of this unit is to move from that sense of possibilities to daily practices that can help us to relate to nature at a much deeper, spiritual level than simply visiting natural areas for relaxation and outdoor recreation. Such heightened awareness can be the first step in making meaningful life-style changes and joining others in Earth activism to preserve this threatened heritage.

Other units in this book have suggested *outward* lifestyle changes, as well as reforms in economic and political structures, aimed at restoring the earth's ecological integrity. "Earth mindfulness" or "Earth awareness" is a complementary *inward* process of knowing and vividly sensing how we exist within the web of life, in the context of an unfolding cosmos. Without such grounding there is a tendency to make only superficial changes or to burn out as we struggle against the mainstream culture.

If you have not had much experience with guided meditations or similar exercises, you may find it difficult to relate to the approach at first. In the simplest terms, natural awareness is the process of opening our hearts to the Divine in creation. We are being asked to stop and take time from our hectic lives, go outside, and really see at what is around us, and listen to nature's language.

Jesus found his spiritual nourishment in the outdoors. He spent time in the wilderness, where he fasted and faced the temptations (Luke 4:1) and asked for God's help in the garden at Gethsemane (Matthew 26:1). The Sermon on the Mount was outdoors and not in a temple or home. We can find many biblical references about nature and its spiritual power.

Article 1, below, speaks of our "armoring," our way of remaining insensitive to the natural world. It may be difficult at first to take off that armor and to be open to what is being offered. You are now asked to shed any preconceptions you might have about experiential activities and dive into an experience that may change your life.

## Issue presentations

### Article 1

## Growing Earth Literacy

by Bill Cahalan

IN MOVING TOWARD sustainable ways of living, we are applying our Quaker testimony of simplicity (along with the peace, justice, and integrity testimonies). We must discover the truth that living more simply, with fewer or less destructive possessions, need not be felt as a deprivation. We may feel enriched if we increasingly ground ourselves in a more harmonious and complex relationship with the web of life. We may find ourselves called to a more direct, sensuous, reverent, give-and-take relationship with our local landscapes and weather, with our waters, soils, wild lands, and neighbors. Moving step by step into such a life in nature seems to be essential to a sense of personal power and spiritual fulfillment. It is also what the community

of life urgently needs from us now, as we assume again a humbler place as plain citizens, rather



than as managers or owners, within Earth's marvelous symphony of life.

Science can be a major source of continuing revelation about the nature of reality, including the ways in which the Spirit is present within nature. However, many people still see nature through the eyes of pre-20th century Newtonian physics. In this worldview, the universe is perceived (usually unconsciously) as a clock-like or computer-like mechanism composed of inert matter. The whole is understood as merely the sum of discrete parts. When such reductionist materialism came to dominate Western thinking, it became harder to imagine or experience divinity as present within nature and to feel the passion and compassion required for deep change. Revelations of 20th century co-evolutionary biology, ecology, quantum physics, and scientific cosmology have opened the way to a radically different understanding of the world and our place in it. But most people today—even many scientists—have a hard time letting go of the old mechanistic worldview.

When the revelations of different sciences are integrated with each other and reflected upon, we discover the cosmos as being more like a living organism than a machine—a communion of subjects, rather than a collection of objects. Scientific findings suggest the omni-presence of sentience (the capacity of something to feel the presence of other things and thereby be influenced by them) and creative motion, of an "organizing and animating intelligence," which permeates and contains all things. Science thus reaffirms and extends an ancient intuitive, mystical awareness that has existed in many cultures for thousands of years.

SOME BASIC PATTERNS seem essential for us to learn as citizens of industrial culture. These patterns have been eclipsed by our pervasive mechanistic, de-spiritualized worldview. The relentless unraveling of Earth's ecological integrity is being caused by an economic system that violates these sacred realities. We must learn, and begin to see and feel, these patterns everywhere in the Creation in order to move toward sustainable lives rooted in a full sense of the Spirit:

1. *A central activity of the universe since the Great Flaring Forth has been the creation of self-organizing systems.* These include hydrogen atoms, ourselves, the earth, stars such as our sun, and the Milky Way Galaxy. And everything in this expanding, evolving universe, although actively maintaining itself, is also a manifestation of the unbroken wholeness of the universe. This Whole is ultimately beyond our rational analysis or comprehension.

2. *All things or events are sensitive and ceaselessly in motion; they have worth or value in and for themselves.* Every atom senses and responds to all other atoms. Matter has evolved from the light and heat of the Great Flaring Forth about l4 billion years ago—to sub-atomic particles/events, to hydrogen atoms, to stars within billions of galaxies. In the hearts of dying stars, the rest of the l05 elements evolved and seeded our solar system. On Earth, molecules, single-celled and then multi-celled organisms, ecological communities, and the Earth community itself organized themselves. There appears to be an organizing and animating intelligence inherent in matter/energy (and in the fertile emptiness which permeates and contains matter/energy). As every being engages in ceaseless self- organizing, it both differentiates itself from other things and communes with them and with the larger whole of which it is a part.

Such sensitivity, motion, and inherent worth seem self-evident when I simply open my senses and extend empathy not only to people but to plants, animals, landscapes, and other events in the more-than-human world.

3. *Everything, including each human, is interwoven with everything else, constantly giving to, receiving from, and changing into other elements and beings.* On Earth, plants turn water, soil, air, and sunlight into themselves. We then transform plants, and animals which ate them, into ourselves. And we turn back into water, soil, and air, and release heat each day in small ways and completely when we die. Each atom that constitutes us has been part of many living things, and in between has been part of the water, soil, and air countless times for billions of years. So, when we pollute our air or water or erode our topsoil, we defile something which has been, and will again become, a living being.

Because of this pervasive interwovenness, every living thing and the elements that compose it not only has inherent worth, but is valuable for its part in supporting other beings and the natural community as a whole. Also, every human action has unavoidable side effects besides the intended effect.

4. *Through this creative interwovenness, living things have cooperatively evolved into complex natural communities, such as woodlands, which tend toward a mature, stable state.* For example, in my Midwestern broadleaf forest region, there are several kinds of mature forests that have evolved over tens of thousands of years. These communities are composed of a high diversity of soil creatures and microbes, shrubs, herbs, ferns, vines, mosses, trees, insects, mammals, and birds. Their relationships often involve competition, but they are more generally seen in terms of cooperation. They recycle elements and nutrients at limited rates. The community tends not to show a net annual growth, since the microbes recycle dead organisms as fast as new growth happens. These qualities, which allow the communities to sustain themselves over the long run (in contrast with the quantitative growth-orientation of our industrial economy), also tend to exist in other kinds of mature communities in other regions, such as prairie, desert, chaparral, tundra, and lake ecosystems.

5. *The total network of these communities culminates in the whole Earth functioning as a self-regulating being, a vast symphony of life, maintaining balanced states essential for all of our lives.* As I stated earlier, the web of life evolved from matter that is "non-living" but that nonetheless embodies organizing intelligence. We are composed of light and the elements within soil, water, and air. We constantly return part of ourselves, and eventually will return all, to these elements. And miraculously, Earth's web of life is not only formed from the elements, but also has shaped the composition of soil, water, and air, and actively maintains them in what is actually a state of chemical disequilibrium. For example, the oxygen level is kept close to 2l percent of the atmosphere. Edward O. Wilson has stated that "The biosphere creates our special world anew every day, every minute, and holds it in a unique, shimmering, physical disequilibrium. On that disequilibrium the human species is in total thrall." Life keeps the elements in the kind of dynamic steady-state necessary for life to continue.

   To summarize much of the above, we not only evolved from, are composed of, and will return to, these ever-cycling elements. We also help the web of life to maintain them in a dynamic but steady state. For me, this is a revelation of great beauty and mystery that has the potential to radically transform how we experience ourselves and our fellow beings within Earth's body, within the wind, the rain, and the very landscape and sky.

6. *Spirit may be thought of (and ecstatically experienced during mystical illumination) as the most basic quality at the heart of reality*—the sentient, self-organizing activity of each thing or event as a manifestation of the self-organizing intelligence of the universe; or, alternatively, as a manifestation of a Creator that both contains and dwells within this Creation. So, although the revelations of science do invite the affirmation of Spirit as present within nature, there are various ways in which different theologies may assert this reality.

## Illustrative activities for Article 1

# Practicing Earth Awareness

IN OUR EFFORT to become ecologically literate, learning about the realities discussed in the Growing Earth Literacy section may begin primarily on an intellectual level. If our learning remains at that level it will make little difference in how we live and contribute to restoring the earth's ecological integrity. We must respond to the Spirit's call to fully awaken to these realities, embodying them and living them out in a deep, heartfelt way. We call such sensuous, wholehearted recognition and attentiveness "Earth awareness" or "natural awareness."

Experiencing such an awakening to the Spirit is hard for most of us as citizens of industrial-growth culture. The human-built environment distances and shields us from the other-than-human world. We eventually internalize this shielding as a process of personal "armoring." This mostly unconscious activity involves chronically being "in our heads" as we deflect our senses from and numb our emotional responses to nature. The living Earth is often spoken of as "the environment," something separate from ourselves, a collection of resources or mere scenery. Attempting to fill our emptiness, we screen out nature's enticing distractions from our striving as consumers and owners, narrowing our attention to the built environment.

As you read further and try the practices suggested, see if you begin to notice such distancing activity in yourself. The goal I suggest is not to eliminate all armoring, but to gently notice it, engage in it more selectively, and regularly step beyond it through lively attentiveness and deep inward and outward listening.

*Earth awareness or natural awareness involves an open-hearted, deep-listening attentiveness to the process of Creation (and therefore of the Spirit) ceaselessly unfolding around us and within us.* This practice may become an extension of Friends' listening or waiting-worship practice, which traditionally has tended to be more inwardly focused than natural awareness. Such awareness is enhanced by recognition of the basic realities listed earlier, and involves a more sensuous, relational, and empathic consciousness of the natural world than is usually present in our culture. It includes a less restricted recognition of the Spirit's functioning than many are used to. Natural awareness has the potential to support a radical change in worldview and in behavior.

As William Penn wrote in l693, "It would go a long way to caution and direct people in their use of the world, that they were better studied and known in the creation of it. For how could men find the conscience to abuse it, while they could see the great Creator look them in the face, in all and every part thereof?"

George Fox in his journal described an awakening to the Divine in the creation: "Now was I come up in spirit through the flaming sword into the paradise of God. All things were new, and all the creation gave another smell unto me than before, beyond what words can utter.... I was come up into the state of Adam which he was in before he fell. The creation was opened to me...." The Creation may be opened to each of us as well, if we cultivate the appropriate deep and patient attentiveness.

## Earth-body meditation

HERE IS ONE VERSION of a guided experience called an "Earth-body meditation," originally created for retreat participants. Try it in a grassy place near trees, and also ideally near a wild area large enough to lose yourself in during a deep listening walk (described later in this unit) after the meditation. It may help you to enter a relational, sensuous experience of membership within the Earth community or body, leaving behind at least temporarily the more common position of spectator in relation to an external "environment." At first you may want to have someone read the meditation to you, with the indicated pauses, or you can listen to a recording of yourself reading it:

> *We are members of Earth's body. We help the web of life to maintain the same ever-cycling elements, forms of light from the Great Flaring Forth, which we evolved from, are composed of, and will return to.*

*Sit down and settle on the ground, allowing yourself to comfortably adjust to the Earth's gravitational embrace…. Close your eyes. Maybe you can faintly feel blood pulsing in your neck and fingertips. Enjoy this automatic cycling, knowing that it is actually part of the larger water cycling of this region. Just as our blood nourishes us, water is the blood of Earth....*

*Now notice your breathing, and gently follow its rhythm for a few minutes, relaxing any tightening which may be hindering a full, relaxed in-breath and out-breath....*

*Like blood pulsing, breathing is mostly automatic, an enjoyable and natural, taken-for-granted life process. Know that all the oxygen that you and all animals are taking in at this moment is a gift of green plants, given off by them as they breathe in the carbon dioxide which we and other animals have exhaled.*

*Open your eyes and slowly scan and take in some of the plants, such as the grasses and trees, which are breathing with you. Feel the temperature and movement of air on your face and hands. As water is Earth's blood, so air is the breath of our larger Earth body....*

*Now close your eyes again, scanning your body slowly and savoring your own energy, which may have been rising as your breathing has deepened. This energy may be felt as slight movement, readiness to move, tingling, or warmth. Notice also any stiffening you may be doing to interrupt the free movement of energy in yourself. Know and appreciate the source of this energy, which is the sun....*

*Open your eyes now and take in the sunlight. See the contrast of light and shadow. Allow yourself to slowly take in the landscape, plants, any animals, and the sky, rather than quickly skimming over what you see. This sunlight energy in you is released with each heartbeat and each breath, having come to you from plants through your food chains....*

*Now use this energy to slowly stand up…. Begin to walk slowly around, feeling and savoring each step…. See the sunlight, present even if the day is cloudy. Let your breathing regulate its own pace and depth. Look at the plants and whatever else is here. See each plant, bird, insect, and person as a way-station for the cycling elements of soil, water, and air, and for the light. See each as a fellow participant within the self-regulating, evolving body of Earth.*

## Deep listening walk

YOU CAN NOW GO on a "deep listening walk" if you want, wandering or stalking (moving slowly and silently, pausing a lot, versus "hiking") for an extended time through the nearby wild areas, being led intuitively by your emotional responses to what you see, hear, or smell. Your only goal is to discover the beings, elements, and places that share the land with you, sensing them as emanations of the Divine, and discovering how they may move you or what they have to teach you.

It is typical at first to experience some boredom or anxiety as you withdraw even for an hour from your attachment to the built environment. If you accept these feelings and continue your opening to the world, compassion, wonder, and even ecstasy may eventually come. Allow yourself to open your senses to the places, animals, plants, and weather, silently scanning with a generalized attentiveness. Notice what moves you emotionally, what calls you out of your more contained self. Attend to living things and places as subjective presences, each with special sensitivities and unique functions within the circle of life. They may become sources of spiritual power and primary teachers of lessons for living.

As you slowly wander, stop and linger often with any place or thing which seems to invite you or speak to you. Allow yourself to imaginatively enter its life for a while. What it is sensing? What is it doing within this community? Take your leave when you feel ready, and move on.

When you eventually circle back to your starting place, you may want to write down, draw, or dance the spirit of a being or place that most stands out in your experience. You may also want to share your experiences with one or more friends, who ideally have taken part in the meditation and the walk with you (out of view, if possible). This can be done in a worship-sharing format. One query might be, "How has the breath of the Spirit, which animates all things, moved you or spoken to you?" You might try empathically assuming the identity of a

being or place that moved you on your walk, and describe "yourself" and the special gift or sensitivity you bring to the gathered people. What recognitions and emotions are aroused in you, in the roles of both speaker and listener? Such activities help you carry the life force and lessons of the Spirit's embodiments in nature back into everyday living.

## Everyday practice

THE MEDITATION AND WALK ideally will suggest activities for a regular practice of natural awareness, extending your current deep listening or waiting worship practice. A compelling reason for engaging in such a practice is that in our industrial culture we are constantly invited by people and the built environment to reassume our culture's mechanistic, nature-as-separate-environment view, moving back into the stance of armored spectator. It requires regular practice to live in a more richly fulfilling way, grounded in compassionate attentiveness to the movements and patterns of the Divine Presence within Creation. Such a practice may be essential both for informing us and for sustaining us as passionate, compassionate activists for peace *with* Earth as well as *on* Earth.

You may begin walking regularly through or near the wild areas of your neighborhood and home territory, coming to know the landscapes, watercourses, natural communities, plants, and animals. Get to know how these function, and how they affect you physically and spiritually. How do they speak to you and teach you?

## Taking time to increase your understanding

PERHAPS YOU CAN DISCOVER how the lay of the land is part of local creek and river watersheds. Book research and consulting with local elders can enrich your sensory discoveries on foot. How were local bedrock, soils, and landscapes formed? What are the common native wildflowers and edible plants? The major tree and animal species? What were the native old-growth communities, and are any of these left? What phase is the moon in? When is the next seasonal change day, and how does the angle of the sun hint at this? Where does your food come from? Is any of it local, or only coming from outside your region? Where does your household water come from? Your fuel for home and car?

Perhaps you will find yourself drawn into such an activity as a fascinating, lifelong process of discovery.

You also may begin to pause regularly each day from whatever you are doing, noticing and savoring what is happening in the natural world and how you are participating in and responding to this. Some good times to pause mindfully and gratefully include sunrise and sunset; before, during, and after meals; and when turning on the water tap or shower.

You might pause when you need a break from reading or working indoors, briefly stepping outdoors or gazing from a window into the wider world.

Eventually, as you become aware of ways that you are being sustained and nurtured, follow the naturally resulting urge to give back to the Earth and Cosmos. Find ways to begin harmonizing your Meeting, church, household, and lifestyle with basic Earth patterns and cycles.

Also, you may find yourself called to help limit suburban sprawl, to work for wildlife and wild areas preservation, or to move into any of the myriad forms of activism that our Earth community so badly needs from us now. In following these leadings, you move toward becoming a true native, rather than a mere occupant, of your home region, living in harmony with the processes and patterns of the earth, grounded in the Spirit.

We can support each other in our Meetings and our neighborhoods by waking up from the trance of consumerism. We can live simply and richly, regularly opening ourselves to a vivid, enlivening sense of the Divine Mystery at the heart of all that is.

This passage from Ecclesiastes seems fitting here:

> *One generation passes away, and another generation comes: but the earth abides forever. The sun arises, and the sun goes down, and hastens to his place where he arose. The wind goes toward the south, and turns about unto the north; it whirls about continually, and the wind returns again according to his circuit. All the rivers run into the sea; yet the sea is not full; unto the place from whence the rivers come, there they return again.*
>
> —Ecclesiastes 1:4–7

Article 2

# Earth Activism

by Ruah Swennerfelt

THERE ARE OVERWHELMING PROBLEMS in the world today. We live in a very complex set of cultures that have to find some harmony to provide a safe place for future generations. There is a rampant amount of greed that is guiding our treatment of the living creatures on our planet. While there are too many problems to name them all, here are some examples which will help illustrate the need:

1. When I was a child I went camping each summer with my family in the High Sierras of California. I remember vividly the early morning "scoop" of water from the stream. How cold and delicious it was! My grandchildren cannot go camping today and drink the water from the streams without first filtering it. We are using the waters of the world faster than they can be replenished, and we are polluting them as well.
2. In the 1930s a loaf of bread made from the flour grown in the Midwest was naturally full of vitamins. Today that same loaf of bread has to be fortified with vitamins because the soils are depleted of their nutrients from too much use of chemical fertilizers.* The only naturally healthy loaf of bread today comes from flour grown organically (with natural fertilizers and no herbicides or pesticides).
3. Where I live in Vermont we have an abundance of deer. In the winter there is not enough food for such large herds, and so they painfully starve to death. Humans have killed or driven out the natural predators of deer (such as wolves and mountain lions), and so the system is out of balance.
4. Today there are more shopping malls than high schools! We live in a culture where the dominant voice comes from large corporations who take up much of television and radio air time (even with advertising in our schools), encouraging us to buy more and more and more. Many of these goods come from countries where people are not paid fair wages and where even children are working long days. There is no justification for using children in this way; it's just wrong. Many of the resources used to make the goods are depleting the natural resources of the planet.
5. Our love of the automobile has polluted our cities and is making us demand more and more petroleum. This need for more oil has driven us to other countries to search for it, creating tensions and even leading us to war.

## We must speak out

WHEN WE FEEL CLOSE TO SOMEONE, say a friend or family member, we readily help them when they are in need. We care deeply for our pets and wouldn't think of letting them suffer. So, if we practice the suggested activities described on the following page and begin to feel our interconnectedness with all Creation, we may feel called to help wherever the needs may be. We *must* speak out on behalf of those who can't. For our own survival (I don't want to be too human-centered, but this helps illustrate the point) we need the rich biodiversity of the planet. The trees produce oxygen, and the animals and plants provide food, clothing, and shelter. Every living thing is part of a cycle of life. If you remove one part of the cycle, the rest suffers.

Many would like to act, but feel immobilized by the complexity and immensity of the problems. I often hear the following questions:

- What difference does it make if I take the bus instead of my car? Or if I use cloth napkins instead of paper? Or if I conserve water or electricity?

*The British *Globe and Mail* and Canadian *TV News* examined food tables that were prepared by government researchers in 1951, 1972, and 1999, and compared the nutrients available from 100 grams of the given food. According to the Canadian data, almost 80 percent of foods tested showed drops in calcium and iron, 3/4 drops in vitamin A, 1/2 lost vitamin C, 1/3 lost thiamine, and 12 percent lost niacin. The results were almost identical to similar research conducted in the United States and Great Britain. The UK research was published in the British Food Journal, while the U.S. data have been published only in alternative health journals.

- What can one person possibly do?
- Is this important enough that I must make do with less?
- What will I have to give up?

There is a fear of having to sacrifice for the good of the future. Can we continue this increasing use of the world's resources? The resources are finite, and we have to change. Yes, we will have to do with less. But we can work for a world where we have time for family and reflection. If we took our testimonies seriously, we would no longer feel afraid of change. We would have faith, like those Quakers before us, that with God's help we can live full and rich lives without irreparable destruction of the earth's natural resources.

It is important to keep aware of the issues of the day, not just "environmental issues" because all the issues are interrelated.

> *Therefore, whoever breaks one of the least of these commandments, and teaches others to do the same, will be called least in the kingdom of heaven; but whoever does them and teaches them will be called great in the kingdom of heaven. For I tell you, unless your righteousness exceeds that of the scribes and Pharisees, you will never enter the kingdom of heaven.*
>
> —Matthew 5:19–20

In the next section are some suggested first steps towards a life of Earth activism. Start small. Don't take on more than is possible for you, or you'll set yourself up for failure. But do take those first steps. God's Creation is depending on it.

## Illustrative activity for Article 2

## Practicing Earth Activism

TO BECOME MORE ACTIVE on behalf of the earth, start by making yourself aware of the issues. Learn from sources in addition to the conventional news reports. At the end of this book is an appendix of resources to help you begin.

Begin examining ways you can reduce your purchases. Buy local, rather than transported, goods. Walk or carpool, or use public transportation more. Buy second-hand clothing. Challenge your family to reduce energy consumption by installing compact fluorescent bulbs, turning the thermostat down and replacing old appliances with "Energy Star" rated appliances.

Be willing to talk about what you are doing. This is one of the most important steps. It will encourage others to take first steps so together we can really make a difference.

Try writing letters to your state and federal representatives. Friends Committee on National Legislation provides content for letters. Quaker Eco-Witness for National Legislation publishes the bi-monthly *Quaker Eco-Bulletin* on a variety of issues, as well as periodic "Eco-action Alerts." Work with members in your church or Meeting to provide education classes on the issues of the day including steps for action. (A good resource for such a class is the Quaker Earthcare Witness pamphlet, *Walking Gently on the Earth, an Earthcare Checklist*.) Write letters to the editor of your local newspapers. Write articles for *Quaker Life, Friends Journal, BeFriending Creation,* or *EarthLight* magazine.

Then, if you have made some personal changes, written some letters, made some phone calls, and engaged others into action, and you still feel you are not doing enough, maybe you are being led to demonstrate your concerns more actively. Encourage others in your Meeting or church to join together and participate in a vigil or march. Search out neighborhood activities such as a plan to clean up a stream or lake, preserve some land for wildlife habitat, create bicycle paths, clean up a park or the roads, or carry out some other worthwhile project. Working with others to make change can be an incredibly inspiring experience.

> *You are the light of the world. A city built on a hill cannot be hid. No one after lighting a lamp puts it under a basket, but on the lamp stand, and it gives light to all in the house. In the same way, let your light shine before others, so that they may see your good works and give glory to your Father in heaven.*
>
> —Matthew 5:14–16

## Questions for reflection

- What do I do daily to remind myself of my connections with people, other creatures, and all that sustains life? How does this bring joy, thankfulness, and nourishment into my spiritual life?
- Do I treasure as sacred the whole of Creation?
- Do I honor the Life of all living things, the order of nature, the wildness of wilderness, the richness of the world? Do I seek the holiness which God has placed in these things, and the measure of Light which God has lent them?
- What actions am I taking to reverse the destruction of the earth's ecosystems, and to promote the earth's healing?
- Do I contribute ideas, effort, resources to help heal and stabilize our ecosystem?
- As a member of my Friends community, as well as of my work and home communities, do I seek guidance in the Light for ways that I may lead and participate in actions which both heal the Earth and inspire others regarding the urgency of this healing?

## Prayer

*Oh Spirit/Creator, hear my intention*
*To take time each day to be aware of your beautiful Creation!*
*Help me to hear and listen to your Word by slowing down.*
*Hear my cry of too much business in my life.*
*Help me to discern the ways to act on behalf of the Creation.*
*Help me find my voice to speak out against the destruction of the earth.*

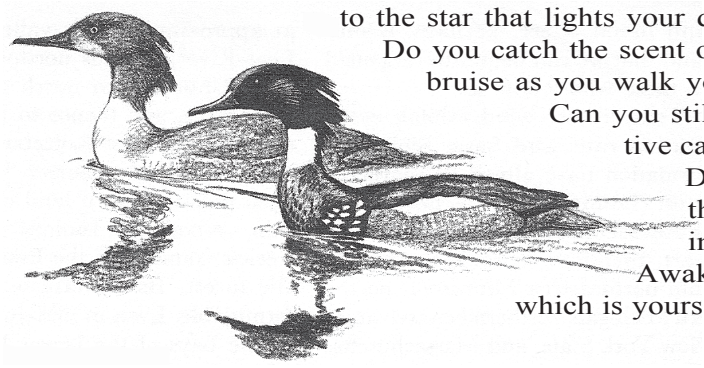
*Oh Spirit/Creator, hear my call.*
*Give me courage to make change and I will honor your Creation every day.*

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# *Awaken to the Earth*

*Some of Tom Goodridge's "Wild" Verses*

City Tom,
I greet thee.
My feet are sunk in moss
As my skin receives the sun
and intercepts the soft breeze.
Waves lick the pond's edge below me.
Changing from another realm:
*I will hold you.*
*I will hold you.*
*Let my fluid arms enfold you.*
But the crow caws:
*Look up, look up,*
*Where the clouds float free.*
*Look up, look up,*
*Come soar with me.*
I lean back against this birch,
Knowing my hopes can
perch upon its branches,
Knowing my desires can
descend down into its roots.
I remain here, yet claim the whole Earth as my terrain.
—Wild Tom



City Tom,
Are you dead? Are you alive?
Does your foot feel for the soft, dank earth
under the pavement?
Do you taste the lake as you drink
your beverage?
Do you search for the sunset and bid good-night
to the star that lights your day?
Do you catch the scent of the plants you
bruise as you walk your path?
Can you still hear the plain-
tive call of the loon?
Do you listen for
the often quiet cry
in all living things?
Awaken to the earth,
which is yours for a while.
—Wild Tom

*[From* BeFriending Creation, *July-August 1999. Tom Goodridge is a member of Morningside Friends Meeting in New York City.]*

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# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 17

## The Great Story

by Mary Coelho

### Purposes of this unit

1. To bring about a Copernican-like revolution in our thinking, arising from the New Story of the evolutionary universe and the new understandings of the nature of matter.
2. To help us move out of the dangerous objectification of matter that many of us learned in our studies, and to find a spiritually based foundation for changing our relationship with the earth.
3. To show that people are creative beings within a creative universe. This is basis of hope that we can create a sustainable future in this unique time.

MANY OF US, because of our Western education, have unexamined assumptions that alienate us from the earth. The New Story of the evolutionary universe has radical implications and revelations that are explored in this unit to help us move toward an urgently needed change in our understanding of the earth and human identity.

In an evolutionary universe we are not helpless before the ecological crisis, because there can be an evolution of human consciousness and human behavior. It is a creative universe, in which the person is an exponent of the creativity of the whole. This is the basis of a tenuous confidence that humanity can discover and build a culture in which we will live in a manner that is integrated with the systems and beauty and diversity of the earth.

### Sacred texts and other inspirational readings

> *For you shall go out in joy, and be led back in peace; the mountains and the hills before you shall burst into song, and all the trees of the field shall clap their hands. Instead of the thorn shall come up the cypress; instead of the brier shall come up the myrtle; and it shall be to the Lord for a memorial, for an everlasting sign that shall not be cut off.*
>
> —Isaiah 55:12–13

> *Happy are those who meditate on wisdom who reflect in their heart on her ways and ponder her secrets.*
>
> —Ecclesiastes 14:20–21

> I may mention a remarkable circumstance that occurred in my childhood. On going to a neighbor's house, I saw on the way a robin sitting on her next, and as I came near she went off; but having young ones, she flew about, and with many cries expressed her concern for them. I stood and threw stones at her, and one striking her, she fell down dead. At first I was pleased with the exploit, but after a few minutes was seized with horror, at having, in a sportive way, killed an innocent creature while she was careful for her young.
>
> I beheld her lying dead, and thought those young ones, for which she was so careful, must now perish for want of their dam to nourish them. After some painful considerations on the subject, I climbed up the tree, took all the young birds, and killed them, supposing that better than to leave them to pine away and die miserably. In this case I believe that Scripture proverb was fulfilled, "The tender mercies of the wicked are cruel." I then went on my errand, and for some hours could think of little else but the

cruelties I had committed, and was much troubled. Thus He whose tender mercies are over all his works hath placed a principle in the human mind, which incites to exercise goodness towards every living creature; and this being singly attended to, people become tender-hearted and sympathizing; but when frequently and totally rejected, the mind becomes shut up in a contrary disposition.

—*The Journal of John Woolman*, pp. 2–3, Whittier edition

*Four things on the earth are small, yet they are exceedingly wise:*
*the ants are a people without strength, yet they provide their food in summer;*
*the badgers are a people without power, yet they make their homes in the rocks;*
*the locusts have no king, yet all of them march in rank;*
*the lizard can be grasped in the hand, yet it is found in kings' palaces.*

—Proverbs 30:24–28

## Hymns and songs

For the Beauty of the Earth. *Worship in Song, A Friends Hymnal*, #10.
Take Off Your Shoes. *Worship in Song, A Friends Hymnal*, #311.

## Issue presentations

### Part I

# The Emergence of a New Story

THERE IS A GROWING concern that human beings are gradually losing an experiential, felt knowledge of our embeddedness in the earth and cosmos. The psychoanalyst Otto Rank has said that when humanity lost the cosmos, we became neurotic. Erich Neumann, a Jungian analyst, has asked if consciousness has lost its link to the whole and is thus deteriorating. Pierre Teilhard de Chardin was concerned with "the dying down of the zest for life" in the modern world. Thomas Berry asks how, if we are without roots in the earth and cosmos, we are to activate the psychic energy that is required to address the major ecological issues confronting us.

The following extended quotation from Thomas Berry's *Dream of the Earth* is his analysis of the situation in our culture.

## "It's all a question of story"

It's all a question of story. We are in trouble just now because we do not have a good story. We are in between stories. The old story, the account of how the world came to be and how we fit into it, is no longer effective. Yet we have not learned the new story. Our traditional story of the universe sustained us for a long period of time. It shaped our emotional attitudes, provided us with life purposes, and energized action. It consecrated suffering and integrated knowledge. We awoke in the morning and we knew where we were. We could answer the questions of our children. We could identify crime, punish transgressors. Everything was taken care of because the story was there. It did not necessarily make people good, nor did it take away the pains and stupidities of life or make for unfailing warmth in human association. It did provide a context in which life could function in a meaningful manner.

Presently this traditional story is dysfunctional in its larger social dimensions, even though some believe it firmly and act according to its guidance. Aware of the dysfunctional aspects of the traditional program, some persons have moved on into different, often New-Age, orientations, which have consistently proved ineffective in dealing with our present life situation. Even with advanced science and technology, with superb techniques in manufacturing and commerce, in communications and computation, our secular society remains without satisfactory meaning or the social discipline needed for a life leading to emotional, aesthetic, and spiritual fulfillment. Because of this lack of satisfaction many persons are returning to a religious fundamentalism. But that, too, can be seen as inadequate to supply the values for sustaining our needed social discipline.

> A radical reassessment of the human situation is needed, especially concerning those basic values that give life some satisfactory meaning. We need something that will supply in our times what was supplied formerly by our traditional religious story. If we are to achieve this purpose, we must begin where everything begins in human affairs—with the basic story, our narrative of how things came to be, how they came to be as they are, and how the future can be given some satisfying direction. We need a story that will educate us, a story that will heal, guide and discipline us.

## The discovery of a new origin story

WE NOW HAVE a remarkable new origin story, the story of the evolutionary universe discovered largely in the last three centuries. First evidence appeared in the realms of geology and paleontology, indicating that there was a time sequence in the very formation of the earth and of all life forms upon the earth. The earth was not the eternal, fixed, abiding reality that it had been thought to be. It suddenly dawned upon Western consciousness that earlier life forms were of a simpler nature than later life forms, that the later forms were derived from the earlier forms. The complex of life manifestation had not existed from the beginning by some external divine creative act setting all things in their place. The earth in all its parts, especially in its life forms was in a state of continuing transformation.

Discovery of this life sequence, with an explanation of how it came about, found expression in Darwin's *Origin of Species* in 1859. Now the evolutionary story has been vastly extended to include the beginning, the Great Flaring Forth of primal radiation, sometimes called "the Big Bang," estimated to have occurred 13.7 billion years ago. In a matter of seconds, the early radiation took form as the nuclei of hydrogen and helium. Subsequently, by a little-understood process, galaxies came into being when the universe was a billion years old, and it is within the galaxies that stars of many sizes began to shine as the primordial hydrogen underwent nuclear fusion within the stars. It was within stars and within exploding supernova that all the other elements (besides hydrogen and helium) that comprise the earth and our bodies were created. Our sun and the earth formed 4.6 billion years ago, at which time the earth began its stupendous creative journey. Life emerged very early in the earth's history, and then, over hundreds of millennia of gradual differentiation and complexification, the great diversity of species of the earth came into their astounding glory.

Although there are cycles of destructiveness, such as the major extinctions that closed several geologic periods on Earth, the overall thrust of the story is clearly one of great creativity. The very destructiveness prepares the way for bursts of creativity. Norman Pittenger, an Anglican process theologian, writes: "The evolution of the universe is not a mere unfolding of what has already been the case. There is continuity of process with the emergence of genuine novelty."

## A Copernican-like revolution in our thinking

THE REALIZATION that we and all the beings of the earth are differentiated forms of the substance of the universe and the earth offers of a Copernican-like revolution in our thinking. (The astronomer Copernicus demonstrated that the earth revolves around the sun rather than vice-versa.) In fact, Teilhard de Chardin says it involves the greatest change in human consciousness in 2 million years. We are the first humans to look into the night sky and see the birth of stars, the birth of galaxies, the birth of the cosmos as a whole. Our future as a species will be forged within this New Story of the world. Yet, since the story emerged out of science, many people are suspicious that it cannot significantly inform our identity and be a source of spiritual insight. Thomas Berry observes: "The secular school as presently constituted cannot provide the mystique that should be associated with this story. Nor can the religious-oriented school that has only superficially adopted this new story of the universe evoke this experience [the grandeur and meaning of the universe] in the child." Yet it is most heartening that Brian Swimme teaches that "expressed within the context of the dynamics of the developing universe, the essential truths of religion would find a far vaster and more profound form. The recasting would not be a compromise nor a diminution nor a belittlement; it would be a surprising and creative fulfillment, one whose significance goes beyond today's most optimistic evaluations of the value of religion." A convergence of great importance is developing between science and religion.

Brian Swimme says, "We are restructuring our fundamental vision of the world.... It overwhelms all previous conceptions of the universe for the simple reason that it draws them all into its comprehensive fullness." Furthermore it is a story around which "we can begin to organize ourselves for the first time, on the level of species." Loyal Rue, a professor of philosophy of religion, writes that the story is a "Wisdom tradition," tolerating a diversity of interpretations yet providing a means for global solidarity and cooperation. It is a story of mythic proportions with the power to engage the deep structure of the human nature and to transform how we think and what we do. It can protect us from sitting back and letting our knowledge be packaged and paid for by private, often corporate, interests.

## Part II

# New insights and many questions

THE REMARKABLE NEW STORY immediately offers many insights and raises innumerable questions. Without being aware of what was happening, during the years of our education in Western culture, most of us learned attitudes and adopted philosophical and religious assumptions that directly contribute to our alienation from the earth. One common assumption is the dualism of matter and spirit, and the associated radical scientific materialism that suggests that we live in a meaningless, random universe. The great danger of this dualism, placing God outside the natural world and outside the person, is that the natural world is denuded of value and becomes an object of commercial exploitation beyond our basic needs. There are no restraints on exploitation. Furthermore, also of tragic consequences, is the perception that the individual person is denied intrinsic power, creativity, and value, leading to the loss of psychic energy and zest for life. Also as a consequence of the dualism, there has been a move away from biblical holistic thinking to a dualism which separates the sacred realm from matter.

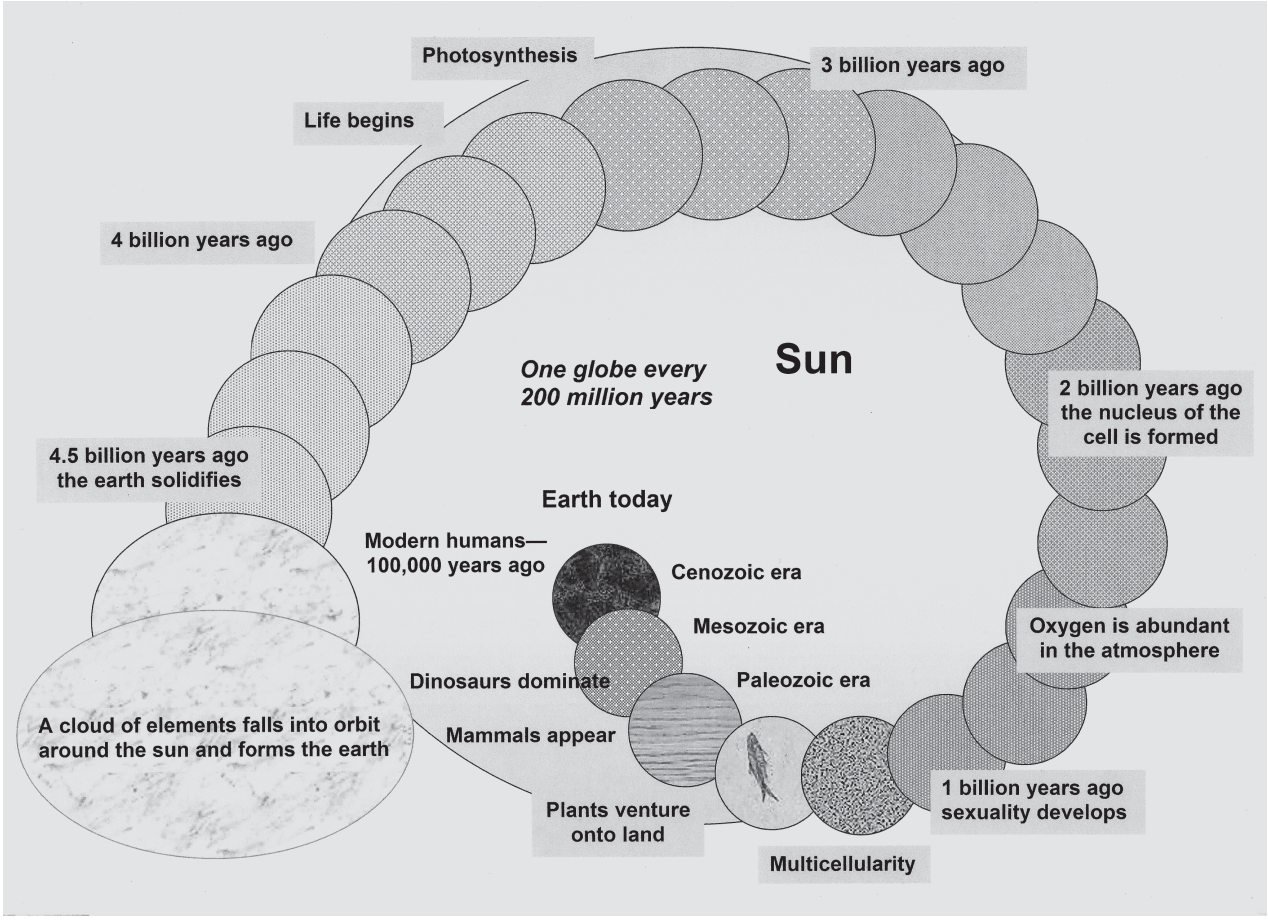
Parker Palmer has written: "Western culture has a million ways of reinforcing the illusions that the world consists of inert stuff out there and that we are the active agents of change whose role is to get that stuff in shape.... This is the assumption on which most modern education has been based, an education aimed at giving us the tools to exercise dominion over the earth." Closely related to this is Thomas Berry's observation that in our dominant Western worldview "the earth [was] no longer a communion of subjects. It has become a collection of objects to be adjusted to in an external manner."

Thomas Berry notes that: "Children who begin their Earth studies or life studies do not experience any numinous aspect of these subjects. The excitement of existence is diminished. If this fascination, this entrancement, with life is not evoked, the children will not have the psychic energies needed to sustain the sorrow inherent in the human condition. They might never discover their true place in the vast world of time and space. Teaching children about the natural world should be treated as one of the most important events in their lives."

## The mystery of matter

UNEXAMINED AND HARMFUL ASSUMPTIONS about the nature of matter, common to the Western educated person, are immediately challenged by the remarkable history of the earth. Figure 1 summarizes this history, starting when Earth formed 4.6 billion years ago as our sun began to shine within the Milky Way galaxy. Since the early material coalescing around the earth eventually became birds and trees and people, we see right away that matter must not be inert and dead. Otherwise how did the very substance of the early Earth undergo such dramatic change, involving untold transformations, to become Earth as we know it today?

Another source of challenge to our assumptions about matter has come from the experimental investigations of atoms at the turn of the last century, which gave sensational and totally unexpected results. It is important to be aware of them as we seek to understand the story of Earth. When Quantum Theory, the theoretical foundation of atomic physics, was worked out in the 1920s, it became clear that even the subatomic particles were nothing like the solid objects envisioned by classical physics. Far from being the hard and solid particles that they were believed to be since antiquity, atoms turned out to consist of vast regions of empty space in




which extremely small particles, electrons, moved around the nucleus—which contained the particles known as nucleons (protons and neutrons).

The subatomic units of matter are, we know now, very abstract entities. Depending on how we look at them, they appear sometimes as particles, sometimes as waves. This dual aspect of matter was extremely puzzling. The picture of a wave that is always spread out in space is fundamentally different from the picture of a particle, which implies a sharp location.

Mass, according to Fritjof Capra, is a form of energy. Energy is associated with activity and with processes, and this implies that the nature of subatomic particles is intrinsically dynamic. The being of matter and its activity cannot be separated. From the perspective of daily experience, material objects around us seem passive and inert, but when we magnify a "dead" piece of stone or metal we see that it is full of activity.

## The generative depth of things / the indwelling God

THOMAS BERRY describes the cultural situation as follows: "The pathos in our own situation is that our secular society does not see the numinous quality or the deeper psychic powers associated with its own story, while the religious society rejects the story because it is present only in its physical aspect. The remedy for the failure to recognize the numinous quality within the West's own story, is to establish a deeper understanding of the spiritual dynamics of the universe as revealed through our own empirical insights into the mysteries of its functioning."

If an atom were enlarged to the size of Yankee Stadium, it would consist almost entirely of empty space. Brian Swimme explains: "The center of the atom, the nucleus, would be smaller than a baseball sitting out in centerfield. The outer parts of the atom would be tiny gnats buzzing above at an altitude higher than any pop fly Babe Ruth ever hit. And between the baseball and the gnats? Nothingness. All empty. Indeed, if all the space were taken out of you, you would be a million times smaller than the smallest grain of sand."

Quantum physicists state this dramatically when they tell us that the wave/particles are so small that things made of matter, including ourselves, are proportionally as void as galactic space. Yet this very "emptiness," we are told, is *full* rather than empty; it is only referred to as empty because it is empty of *measurable* things. Dark energy is now being considered an aspect of empty space, also referred to as a vacuum. Brian Swimme teaches from the elementary perspective that "the root foundation of anything or any being is not the matter out of which it is composed so much as the matter together with the power that gives rise to matter." It is crucial for Westerners to learn that what we call matter has an *inside,* so to speak. As just described, it can no longer be conceived of as tiny particulate pieces, like very small grains of sand, but rather as a mysterious, generative emptiness within which there are interconnected, minute wave/particles of energy/matter. Werner Heisenberg, one of the creators of Quantum Theory, has argued that at the deepest level of reality, at the ground of the vacuum, there is emptiness, equivalent to what the Buddhists call *sunyata*, prior to anything that "is."

It is important to know that in Western theology there is also a tradition, the *apophatic* tradition, of understanding God as a nameless mystery, free of any distinctions. This realm is for Meister Eckhart and others a fertile, fecund ground. The similarity between this tradition and recent insights into the nature of matter cannot be without great significance. We have to guard against too facile assumptions, but it seems evident within our new context that both traditions are exploring the same mysterious realm, each in their particular mode of knowing. Fritjof Capra observes that it is ironic that physics, that extreme specialization of the rational mind, should be the science that has now led us to mysticism. According to Capra, mystical thought, in fact, provides a consistent and relevant philosophical background to the theories of contemporary science, a conception of the world in which scientific discoveries can be in perfect harmony with spiritual aims and religious beliefs.

*It is ironic that physics, that extreme specialization of the rational mind, should be the science that has now led us to mysticism*

Brian Swimme, a physicist by early training, says that the entire cosmos came from this "emptiness." He goes on to say; "The realm or power that brings forth the universe is not itself an event in time, nor a position in space, but is rather the very matrix out of which the conditions arise that enable temporal events to occur in space." Though "the originating power gave birth to the universe 15 [now estimated to be 13.7] billion years ago, this realm of power is not simply located there at that point in time but is rather *a condition of every moment of the universe, past, present, and to come."* (Italics added.) This realm is of what we ourselves are largely made. The entire cosmos came from the emptiness of which we and all of Earth and cosmos are largely made.

Most remarkably, Bede Griffiths, the Benedictine monk who established an ashram in India, says that the Hindu search is to find that inner center where the whole universe is in you. From this insight, we are conferred a remarkable identity, radically challenging many Western dualistic assumptions that so completely separate spirit and matter. We and all beings are rooted in mystery. We dwell in creativity. We are at the center of things.

This creative, bonding realm, this "no-thing-ness" or "emptiness" that is a *plenum*, what Brian Swimme calls the "All-Nourishing Abyss," does not visit now and then; it is always present. Clearly the New Story and the New Physics challenge some conceptions of God that developed within a static cosmology. Earlier dualistic theologies emphasized the transcendence of God, a God who only occasionally intervened to move material things that are otherwise lacking spirit and the fullness of life. This conception is not congruent with the evolutionary story.

It can be proposed with considerable confidence that it is this realm, the *plenum* that has been experienced as love, or known through a kind of alternative, intuitive knowing, or as Light.

It is here as we live within the *plenum* or it within us, that we find a very profound belonging that addresses directly the loss of roots and modern alienation. Often, a difficult, transformative journey is required to come to an ongoing consciousness of this nourishing Presence. Such a pathway has been worked out by many traditions. These pathways lead to personal wholeness and unity with the natural world.

## The universe carries within itself a psychic-spiritual dimension

PIERRE TEILHARD DE CHARDIN, a French Jesuit paleontologist born in 1881 in Auvergne, France, and Sri Aurobindo, from India, first articulated the New Story of the evolutionary universe from a religious perspective. They arrived at the same basic vision, which is that the unfolding of the universe is a physical evolution and also a spiritual evolution. Brian Swimme thinks of these two men as both geniuses who had insight into an integrated worldview.

Thomas Berry writes: "Empirical inquiry into the universe reveals that from its beginning in the galactic system to its earthly expression in human consciousness, the universe carries within itself a psychic-spiritual as well as a physical-material dimension. Otherwise human consciousness emerges out of nowhere. The human is seen as an addendum or an intrusion and thus finds no real place in the story of the universe. In reality the human activates the most profound dimension of the universe itself, its capacity to reflect on and celebrate itself in conscious self-awareness." Other beings share this psychic-spiritual identity in their particular mode.

When we tell the new story of our origins, we must seek to hear the story freshly, recalling these insights into matter and its mysterious depths.

# Part III

# Additional insights from the New Story

## Human beings belong to a diversified unity

MOST NOTEWORTHY is the revelation from the New Story that everything that exists in the universe came from a common origin. The material of our bodies and the natural world are intrinsically related. Our ancestry stretches back through the life forms and into the stars, back to the beginnings of the primeval fireball. Everything is a differentiation of a single energetic event. Brian Swimme explains that the universe is a single multiform energetic unfolding of matter, mind, intelligence, and life. With regard to the earth, we see clearly from the long history of the earth summarized in Figure 1 that the earth is a diversified unity. It is of critical importance to learn from the story that the unity derived from the common origin from the matter that coalesced around the sun 4.6 billion years ago is not broken with the emergence of diversity and complexity.

It is not only from the evolutionary story that we learn of the unity of things. The mathematical language of Quantum Theory convincingly reveals the basic oneness of the universe. It shows that we cannot decompose the world into independent existing smallest units. Fritjof Capra writes: "As we penetrate into matter, nature does not show us any isolated basic building block but rather appears as a complicated web of relations between the various parts of a unified whole."

One reason that it is difficult for us to recognize that we are part of an unfolding unity is that we easily assume, given our education, that complex beings and objects are put together the way a child piles one block on another to make a tower. This is another of our unexamined assumptions. If the atoms were separate, discrete particles as was once thought, there would indeed be no real unity among complex forms. However, given the radical discoveries about the nature of matter just outlined, we can now begin to appreciate and to imagine that there is *an organizing from within* matter by self-organizing processes such that distinct beings remain integral to the unfolding whole. Atoms themselves are self-organizing forms. There is a nesting of self-organizing forms within larger self-organizing wholes. An atom, a functioning whole, becomes part of a cell, which is also a functioning whole. The cell in turn may be part of an organism. We leave the world of discrete blocks and everything changes. In some manner not fully discerned, local laws of physics and random events are caught up in the larger form-patterning of the implicate orders and *plenum*. Ordering powers, or form-generating powers, according to David Bohm and others, are in the implicate order, a dimension of the *plenum*. The true meaning of form, said David Bohm, is known by realizing that they are generated and sustained from the *plenum*. This grounds complex forms in the mysterious plenum or All-Nourishing Abyss, undermining our illusion of a world of separate beings.

Thomas Berry asserts that we will enter the future as a single, sacred community of the human and other than human or we will perish on the way.

## A changed conception of time

HUMAN BEINGS are just beginning to realize that human activities are radically and irreversibly affecting the conditions of the earth and that the changes occurring now will be carried indefinitely into the future, affecting the unfolding Earth story in unpredictable ways. For centuries human beings assumed that, except for seasonal changes, the earth was static and unchanging, formed as it is from the hands of the Creator. We have not seen ourselves as integral players in the unfolding future of an evolving Earth. We believed we were placed on the earth, not forms of the earth itself, not key players in the earth's destiny. Only when we understand that the behavior and activities of human beings are integral to the unfolding story in a time-developmental universe will we begin to take seriously the consequence of our behaviors and reconsider our role as Earth-beings.

*We need to discern what time it is now here on Earth and live in a manner congruent with that time.*

In a time-developmental universe, time refers to the ongoing, changing state of affairs of each successive now. Time is not independent of the changing state of affairs of the earth, contrary to the impression of a clock measuring minutes as it ticks on the shelf. Time is not external to our lives. Depending on the characteristics of a rock, a geologist can assign a rock to the particular condition of the earth in which is formed, a certain time. A paleontologist can assign a fossil to a particular situation of the earth in which the organism once lived, the particular time in the unfolding story. The date, which human beings have assigned to that situation representing a certain year on our calendar, simply labels and identifies a certain condition. Brian Swimme reminds us that there was a time when the extensive New York subway system could be built. It could not be built now; it is no longer the time. There are times in human lives when we can do certain things, such as have a family. Later it is no longer the right time. *We need to discern what time it is now here on Earth and live in a manner congruent with that time.* The survival of our whole civilization may depend on whether we can learn to discern the time within the story of Earth.

Teilhard de Chardin seemed to say that the idea of awakening to eternity was very, very significant in human history, but not as difficult as awakening to the time-developmental nature of the universe.

## Creativity and Friends' leadings

BRIAN SWIMME writes: "The dynamics that fashioned the fireball and the galaxies also fashion your ideas and visions…. In your specific personal dreams and desire, the whole process is present in your personal self." This is a critical insight and remarkably congruent with Friends' understanding of leadings. We are awakening to the fact that human consciousness has the potential for being an exponent of the creative experiments of the whole. Our insights and activities can actually be occasions of the original creativity of the universe.

As an example of this original creativity, Brian Swimme describes Albert Einstein's experience when his insights into relativity came to him. "Chock-full with the very dynamics he sat contemplating, Einstein experienced a birth that permeated him whole, his mind, his muscle, his viscera. Effortlessly, and as a form of the very dynamics, he jotted down the field equations. This chunk of the Milky Way jotted down the dynamics of the Milky Way. This region of space- time, rich with the interactions of the universe, jotted down the symbolic form of the interactions of the universe. This fleshy portion of the world transformed its insides into graphite to reveal the harmonies at work throughout the fleshy world."

Although very few people are likely to have such comprehensive, original insights as did Einstein, given that we are a form of the unfolding whole, the movement of the whole may find expression in us. Creative ideas can be expressed in small acts of kindness and also quite radical changes in the way that we understand the earth, value it, and relate to it. Alternative forms of knowing and creative insights are available to all of us. We must be faithful to them and at the same time, faithful to the earth.

We have found more than a belonging. We join a dynamic, creative reality within which we can create a viable, life-giving future. It is a place that stirs the heart and soul.

As a conclusion we offer several excerpts from Thomas Berry's *Dream of the Earth* and a closing, summary paragraph:

> If this integral vision is something new both to the scientist and to the believer, both are gradually becoming aware of this view of the real and its human meaning. It might be considered a new revelatory experience. Because we are moving into a new mythic age, it is little wonder that a kind of mutation is taking place in the entire Earth-human order. A new paradigm of what it is to be human emerges. This is what is so exciting, yet so painful and so disrupting.
>
> Now a new way of understanding values is required. We are returning to a more traditional context of story as our source of understanding and value. It is somewhat fascinating to realize that the final achievement of our scientific inquiry into the structure and functioning of the universe as evolutionary process is much closer to the narrative mode of explanation given in the Bible than it is to the later, more philosophical mode of Christian explanation provided in our theologies.
>
> It is of utmost importance that succeeding generations become aware of the larger story outlined here and the numinous, sacred values that have been present in an expanding sequence over this entire time of the world's existence. Within this context all our human affairs—all professions, occupations and activities—have their meaning precisely insofar as they enhance this emerging world of subjective intercommunion within the total range of reality. Within this context the scientific community and the religious community have a common basis. The limitations of the redemptive rhetoric and the scientific rhetoric can be seen, and a new, more integral language of being and value can emerge.
>
> There is no way of guiding the course of human affairs through the perilous course of the future except by discovering our role in this larger evolutionary process. If the way of Western civilization and Western religion was once the way of election and differentiation from the others and from the earth, the way now is the way of intimate communion with the large human community and with the universe itself.
>
> Here we might observe that the basic mood of the future might well be one of confidence in the continuing revelation that takes place in and through the earth. If the dynamics of the universe from the beginning shaped the course of the heavens, lighted the sun, and formed the earth, if this same dynamism brought forth the continents and the seas and atmosphere, if it awakened life in the primordial cell and then brought us into being and guided us safely through the turbulent centuries, there is reason to believe that this same guiding process is precisely what has awakened in us our present understanding of ourselves and our relation to this stupendous process. Sensitized to such guidance from the very structure and functioning of the universe, we can have confidence in the future that awaits the human venture.

The new story of the evolutionary universe offers a vision of the whole that values differentiation without destroying unity; it values matter without becoming materialistic; it values unity without demanding uniformity; it values spirit without degrading matter; it values the present without disregarding the past; it values the future without failing to look honestly at the present out of which the future will unfold.

## Questions for reflection

1. Has your conception of God changed within the context of the vast, ever-changing cosmos, described by the New Story?
2. If you actually experienced the sacred within the natural world, how do you imagine you would behave differently?
3. Has the New Story of the evolutionary universe informed your self-understanding or assumptions about nature and the earth in a significant way?

# Illustrative activities

## 1. The Cosmic Walk

THIS FIRST ACTIVITY is a great multigenerational activity. One way to become more engaged in the new story of the evolutionary universe, to realize more fully that we have indeed emerged from the cosmos and Earth, and to appreciate the great time spans involved in the new origin story, is to participate in a Cosmic Walk. This consists in walking along a rope laid out in a spiral. the spiral represents 13.7 billion years of the cosmic and evolutionary journey. It begins in the center of the spiral where there is a candle representing the Great Flaring Forth of the cosmos and continues to the end of the spiral, which is the present moment. Along the way, events important in the history of the cosmos and Earth are marked, the space between the events being proportional to the actual time span between the events as they occurred in history of the cosmos. One event, for example is the creation the sun and the planets within our Milky Way Galaxy 4.6 billions years ago. The preparation of a clothesline with key events marked on it and the cards to explain those special events, can itself be engaging and a valuable group project.

When the actual Cosmic Walk is done, it can be done in silence, or there can be appropriate music accompanying those who are walking. Sometimes one person reads a description of the major events when the walker come to them, or they may be read by each individual walker as they come to place that is labeled. This is a multigenerational activity.

Materials

1. A length of thick yarn or rope to represent the time-line of the universe. Total length is arbitrary, but these are the measurements we use. A 130-foot line is divided into intervals (10 feet equals 1 billion years) when special events took place. Tie a piece of colored yarn at each interval so it is always visible, or use colored tape.
2. A tall candle to be placed at the center of the spiral or a bouquet of wild flowers or grasses, a bowl of stones, etc.
3. A small taper candle to be carried by each participant if you use candles.
4. 25 small vigil (votive) candles in glass containers to be placed at each interval marker or a small dish at each station to receive a stone or small vase or glass to receive a flower.
5. 25 individual papers with or without pictures, describing the event plus the narration.

*Note: We have found that candles can be difficult to work with. Outdoors they blow out and worry the carrier about their candle or even indoors they can be difficult to light, etc. The purpose is to depict the big bang at the center and that everything comes from that. So the pile of stones or bouquet seems to work just as well. Be creative and think of what would work where you are creating this event.*

Music

Use any appropriate solemn/contemplative/yet sometimes-energetic piece. We use Holst's *The Planets* or a custom-made audio tape or compact disk, which we can make available on a loan basis. Some use *The Fairy Ring* by Mike Rowland. (Have someone at the music source to turn down the volume when each person speaks and then back up for the walking.)

People

- Narrator
- Participants (hopefully 26, including the narrator, one for each "event." However, fewer can do it and double up by walking twice.

Procedure

In advance, in a large room, the rope is laid out in a spiral, which is large enough for people to walk it. Pre-light the candles and then blow them out and straighten the wicks for easier lighting during the walk. Also put the piece to read, face down, next to each candle, dish, or vase so the walker can easily light the candle and then pick up the paper to read.

The narrator stands off to the side and explains the procedure, reads the introductory words:

# The Great Story

*This is a story, the story of the cosmos, the story of Earth, the story of human, of gazelle, of mountain, the story of you and me. It is the narrative of one single integrated activity, universe*. (Start the music) *In the beginning was the Mystery. Through the Mystery all things came to be. Not one thing had its being but through the Mystery.*

The narrator then goes to the middle of the spiral and lights the center candle and reads: "Some 13.7 billion years ago our universe flashes into existence. Time, space, and energy become the gifts of existence." The narrator then solemnly walks out to the edge of the spiral.

Then one by one, each participant picks up a sheet with an event (in chronological order), goes to the center of the spiral, lights their taper, and walks to the next unlit votive candle, lights it and reads from their sheet. Have each person go to the center when the person ahead of them has walked half their distance. This helps keep a good rhythm. The order and events read aloud are:

| | |
|---|---|
| 300,000 years later | As the Universe continues expanding, small differences in the density of matter are stretched into gigantic filaments of streaming gases, forming the Cosmic Web, the primordial creator of structure. |
| 200 million years later | Concentrated by the gravitational force of dark matter these gaseous filaments collapse into enormous stars. |
| 1 billion years later | Flowing dark matter draws together stars, black holes, and gaseous clouds into small galaxies wherein stars are born, live, and die. Over time these clusters merge into the giant galaxies we see today. |
| 2 billion years later | Within the interstellar dust these chemical gifts of the supernovas are nurtured into simple organic molecules, vital components for the later emergence of life. |
| 4.6 billion years ago | Our ancestral star gives herself into the transforming mystery of a supernova. Our sun and a great disk of matter, all the planets and other members of our solar system family, emerge from the dispersed body of our grandmother star. Here begins the story of what will become one blue-and-white pearl of a planet. |
| 3.9 billion years ago | As the young molten Earth quiets and cools, an atmosphere begins to form. Then, the first rain! Within the newly formed oceans a rich variety of chemicals gather together to birth the wonder of life. Earth comes alive. |
| 3.8 billion years ago | Small bacteria learn to capture the sun's photons and store the energy in chemical bonds. In doing so, they claim a new source of energy, water, for the growing bacterial population of Earth. |
| 2 billion years ago | The cell with a true nucleus, the eukaryotic cell, forms. It's a consortium of different types of bacteria within one cell wall. It includes mitochondria, the cell organelle in all our cells in which oxygen is used to break up food molecules and release energy. Symbiosis and cooperation have been central to the evolutionary process. |
| 1 billion years ago | Sexual procreation emerges. Single-celled organisms learn to share their genetic heritage and bequeath to their progeny an extravagance of possibilities. |
| 600 million years ago | Predator organisms arise, ones who have learned to use the complex bio-molecules of neighboring organisms, thereby acquiring significant gain in energy. Here begins the predator-prey dance that pro- motes the vast diversity of life: the power of the lion and the speed of the gazelle. |
| 540 million years ago | Sight is invented: eyes emerge. |
| 460 million years ago | Plants and animals move on land. Leaving the water, they seek the adventure of weather and gravity. |
| 330 million years ago | Insects invent flight. |

| | |
|---|---|
| 235 million years ago | Dinosaurs emerge. For 170 million years, these creatures explore the extremes of size, speed, and strength. |
| 215 million years ago | Mammals emerge. |
| 150 million years ago | Birds and flowers emerge. |
| 65 million years ago | With the disappearance of the dinosaurs, mammals are given unlimited opportunities to explore new habitats, new food and new varieties of size, shape, defenses, and creative expressions. This new community of animals, plants, birds, and insects produce the great florescence of Earth life that will last 65 million years. |
| 150,000 years ago | Modern humans and language emerge. |
| 13,000 years ago | Human farming and herding emerge. |
| 3,000 years ago | Classical civilizations and religions emerge. Over several thousand years, humans invent writing and more complex technologies and with them arise a variety of religious perspectives that gradually become institutionalized as Hinduism, Confucianism, Judaism, Buddhism, Christianity, and Islam. |
| 75 years ago | Astronomers observe the expansion of the Universe. After 2½ million years we humans learn that we live in a developing Universe. |
| 50 years ago | Humans discover DNA, life's common language. |
| 40 years ago | Scientists observe the origin of the Universe. The cosmic background radiation, still streaming from the Great Emergence, is observed by humans for the first time. |
| 35 years ago | Earth is seen as whole from space. |
| Today | The Story of the Universe is being told as our sacred story. The creativity implicit in the Great Emergence and expressed in the remarkable longing of Earth for life continues as this moment, in us, as one. |

## A suggested Cosmic Walk program

Part I. (40 minutes)

Opening with silent worship
Brief Introduction
Words about Meditative Walking
The Cosmic Walk

Part II. (10 minutes)

Query for the entire group: *Is there anything you would like to share about your experience?*

Part III. (20 minutes)

In concentric circles, the inner circle facing out and the outer circle facing in. Both individuals who are opposite each other, answer assigned questions. One person listens for two minutes and then the facilitator marks the time and the second person listens for two minutes. Then the inner circle moves one space to the left so each person is facing a new partner. Those people then speak to another assigned questions.

Possible questions

1. Where on the spiral would you want to be a cosmic observer?
2. Were there any surprises or great insights for you on the walk?
3. How did this experience affect your perception of the global ecological situation?

Part IV. (20 minutes)

Query for the entire group: *What are you doing in your own life to move toward a more ecologically sound lifestyle?*

Close with some silent worship.

# Two-Hand Exercise

(with indebtedness to Joanna Macy)

*Choose a partner. One person, who will go first, takes the hand of the other person.*

- With both your hands and hold your partner's hand. Turn it, feeling it, flexing it to become familiar with this hand. Hold it with care and reverence. Take time to feel its warmth. It is both strong and gentle.
- Bend and fold the fingers several times and feel their flexibility.
- View the "map" of lines on the palm. Trace one line. Look at the nails. They protect the delicate, sensitive fingers. Feel the soft, sensitive padding on the palm and fingertips.
- Feel the skin, it is highly sensitive to touch, to heat and cold, to pressure. Are there blood vessels visible? Look at the delicate sensitive hairs on the skin. No heavy shell or pelt encloses this hand. It is vulnerable; it is easy to break or burn or crush. It is an instrument of knowing as well as doing. If you were anywhere in outer space, in intergalactic reaches, and you were to grasp this hand, you would know that you were home. It is only made here. This is a human hand of planet Earth, and it has taken five billion years of conditions particular to this planet to shape it.
- Be aware of the great chasm of time concentrated in this hand. The substance of the hand came out of the explosion of a star billions of years ago.
- Imagine all that is has caressed. Imagine all the care it has given. Imagine all the work this hand has done. Imagine all that it has made.

*Switch roles so that the person who was active now has their hand held.*

- Hold *this* hand with care and reverence.
- Feel the bones of the hand. The bone structure is highly intricate. The bones of the hand reach back into the earliest vertebrates, some *500 million years* ago.
- Note the delicacy of the musculature. This hand can play the piano or pick up the tiniest piece of sand. This was a fin once in the primordial seas where life began, just as it was again in its mother's womb in this lifetime. Countless adventures since then have shaped it, shaped it in connection with the convolutions of the neocortex and frontal lobes of the brain. This hand connected with the trees and wind as it refined its intelligence. The ancestors are in it, ancestors who learned to push up on dry land, to climb, to reach, to grasp, to chip rock, to gather weeds and wave them into baskets, to gather seeds and harvest them and plant them again; to make fire and carry it, banked, on the long marches through the ages of ice. It's all in that hand from an unbroken succession of adventures. It is an ancient hand, gradually created over millions of years in interaction with trees, with the earth, with food, with tools, with other living beings.
- Similarly, open your awareness to this hand's journey through this particular lifetime, ever since it opened like a flower as it came out of its mother's womb. Clever hand that has learned so much: learned to reach for breast or bottle, learned to tie shoelaces, learned to write and draw, learned to wipe tears, learned to give pleasure. You know there are people living now who believe they are worthwhile and lovable, because of what that hand has told them. There are people living now whose last touch in life will come from this hand and they will be able to go into their dying knowing they are not abandoned. You know there are people living now who will be healed in mind or body by the power that this hand allows to flow through it.
- So experience how much you want that hand to be strong and whole for this time, to serve its brothers-sisters beings and the planet of which it is a part. And before you part learn it by heart so that you can remember it is always part of your world. Experience how much you want it to be strong and play its part in the building of a culture of sanity and decency and beauty.
- Without words, express your appreciation of this hand, and your blessings for it. Hold this gift of the creative sacred Earth, look at it and feel it with great care. Hold it in a final blessing.

## 2. Nighttime and the Stars Exercise

THIS IS A CHALLENGING EXERCISE! Go out into a field on a starry night. Lie down on your back and look at the stars. Imagine that you are on the bottom of the earth. See the stars as down there below you. Let yourself go and feel the gravitational bonding wit the earth holding you and keeping you from falling down to the stars. Feel that you are a participant in the vast cosmic forces. Ask yourself, "What are my central bonds to the universe? What holds me as strongly as I am held here? What dreams am I bonded to?

## Prayers and responsive readings

That in the elements of earth, sea and sky I may see your beauty,
that in wild winds, birdsong and silence I may hear your beauty,
that in the body of another and the interminglings of relationship I may touch your beauty,
that in the moisture of the earth and its flowering and fruiting I may smell your beauty,
that in the flowing waters of springs and streams I may taste your beauty,
these things I look for this day, O God, these things I look for.

—J. Philip Newell
*Sounds of the Eternal, A Celtic Psalter,* p. 41

For the wisdom that fashioned the universe
and can be read in the earth's dark depths
and in heaven's infinity of lights.
*Thanks be to you, O God.*

For the wisdom of teachers before me
and their words and imaginative seeing,
for the wisdom of those I have known
and their silence and humility of speech,
and for wisdom's wellspring in my own soul
and in the soul of every human being
from which ancient truth and new realizations spring forth.
*Thanks be to you.*

Let wisdom unfold in my own heart and mind
and in the men and women of every nation.

Let us see the foundations for a new harmony
within us and between us,
the foundations for a recovered unity
with the earth and all its creatures,
for the ground of life is in you, O God,
the ground of all life is in you.

—J. Philip Newell
*Sounds of the Eternal, A Celtic Psalter,* p. 22

The strength of the rising sun,
the strength of the swelling sea,
the strength of the high mountains,
the strength of the fertile plains,
the strength of the everlasting river
flowing in me and through me this day,
the strength of the river of God
flowing in me and through me this day.

—J. Philip Newell
*Sounds of the Eternal, A Celtic Psalter*, p. 29

The Great Story

In the silence before time
began, in the quiet of the
womb,
in the stillness of early
morning is your beauty.
At the heart of all creation,
at the birth of every
creature, at the center of
each moment is your
splendour.
Rekindle in me the sparks of your beauty
that I may be part of the splendour of this moment.
Rekindle in me the sparks of your beauty
that I may be part of the blazing
spendour that burns from the heart of
this moment.

—J. Philip Newell
*Sounds of the Eternal, A Celtic Psalter,* p. 38

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## Organizations

American Teilhard Association. c/o Dr. John Grim, Bucknell University, Department of Religion, 701 Moore Ave., Lewisburg PA 17837;
*<http://www.orgs.bucknell.edu/teilhard/membership.htm>*

# Quaker Earthcare Witness
# Earthcare for Friends

## Unit 18

## The Earth Charter and Friends Testimonies

by Ruah Swennerfelt

### Purposes of this unit

1. To learn about the Earth Charter, its history and current status as a hopeful vision for the future with which all people can unite.
2. To compare the various principles of the Earth Charter to Friends' Testimonies.
3. To learn what steps can be taken within your Meeting or church to study and possibly endorse the Earth Charter.
4. To take steps within your community to enact the principles of the Earth Charter.
5. To learn what others have done to support the Earth Charter (see last page of this unit).

### Sacred texts and other inspirational readings

*He is the image of the invisible God, the firstborn of all Creation; for in him all things in heaven and on Earth were created, things visible and invisible, whether thrones or dominions or rulers or posers—all things have been created through him and for him.*
—Colossians 1:15,16

*The Earth is the Lord's, and everything in it.* —I Corinthians 10:26

*"The land must not be sold permanently, because the land is mine and you are but aliens and my tenants."*
—Leviticus 25:23

*Yours, O Lord, is the greatness and the power and the glory and the majesty and the splendor, for everything in heaven and earth is yours.*
—I Chronicles 29:11

*He (God) waters the mountains from his upper chambers; the Earth is satisfied by the fruit of his work. He makes grass grow for the cattle, and plants for humans to cultivate—bringing forth food from the earth: wine that gladdens the heart of man, oil to make his face shine, and bread that sustains his heart. The lions roar for their prey and seek their food from God. The sun rises, and they steal away; they return and lie down in their dens. Then man goes out to his work, to his labor until evening. How many are your works, O Lord! In wisdom you made them all; the earth is full of your creatures.*
—Psalms 104:13–15, 21–24

### Hymns and songs

From All That Dwell Below the Skies. *Worship in Song, a Friends Hymnal,* #4.

*From all that dwell below the skies let songs of hope and faith arise;*
*Let peace, good-will on earth be sung through every land by every tongue.*
*Praise God, from whom all blessings flow, praise God all creatures here below,*
*O give God praise ye heavens above, revealed in grace and truth and love.*

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## Basic information about the Earth Charter

THE FOLLOWING basic information is from the Earth Charter organization *(www.earthcharter.org)*. The Earth Charter is an authoritative synthesis of values, principles, and aspirations that are widely shared by growing numbers of men and women in all regions of the world. The principles of the Earth Charter reflect extensive international consultations conducted over a period of many years. These principles are also based upon contemporary science, international law, and the insights of philosophy and religion. Successive drafts of the Earth Charter were circulated around the world for comments and debate by non-governmental organizations, community groups, professional societies, and international experts in many fields.

### Structure of the Earth Charter

*A Preamble* briefly describes the major challenges and choices facing humanity. *There are 16 Principles divided into four parts. The first principle* is the foundation of the next three and of all the other principles in the Charter. *The second, third, and fourth principles in Part I* deal with the three major spheres of human relationship and ethical responsibility: relations between human beings and the greater community of life, relations among human beings in society, and the relations between present and future generations. *Twelve main principles in Parts II, III, and IV* spell out more fully the meaning of the first four principles. The titles of these three parts indicate the inclusive nature of the Earth Charter vision. *Sixty-one supporting principles* dealing with critical issues and clarifying the meaning of the 16 main principles.

### Why is the Earth Charter important?

At a time when major changes in how we think and live are urgently needed, the Earth Charter challenges us to examine our values and to choose a better way. It calls on us to search for common ground in the midst of our diversity and to embrace a new ethical vision that is shared by growing numbers of people in many nations and cultures throughout the world.

### What is the history of the Earth Charter?

In 1987 the United Nations World Commission on Environment and Development issued a call for creation of a new charter that would set forth fundamental principles for sustainable development. The drafting of and Earth Charter was part of the unfinished business of the 1992 U.N. Conference on Environment and Development "Rio Earth Summit." In 1994 Maurice Strong, the Secretary General of the Earth Summit and Chairman of the Earth Council, and Mikhail Gorbachev, President of Green Cross International, launched a new Earth Charter initiative with support from the Dutch government. An Earth Charter Commission was formed in 1997 to oversee the project, and an Earth Charter Secretariat was established at the Earth Council in Costa Rica.

### By what process was the Earth Charter created?

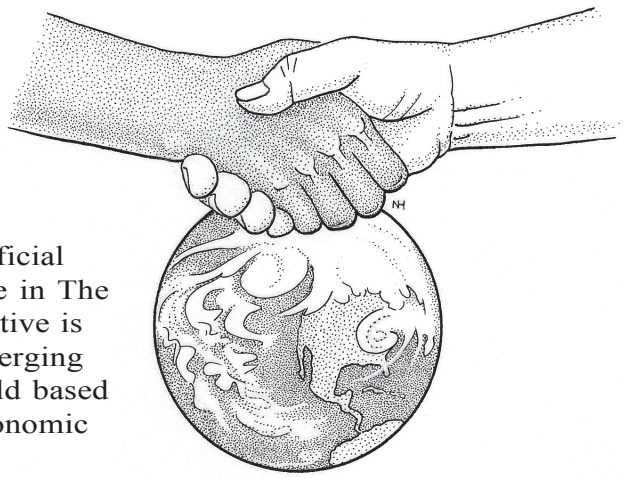
The Earth Charter is the product of a decade long, worldwide, cross-cultural conversation about common goals and shared values. The drafting of the Earth Charter has involved the most open and participatory consultation process ever conducted in connection with an international document. Thousands of individuals and hundreds of organizations from all regions of the world, different cultures, and diverse sectors of society have participated. The Charter has been shaped by both experts and representatives of grassroots communities. It is a people's treaty that sets forth an important expression of the hopes and aspirations of the emerging global civil society.

Who wrote the Earth Charter?

Early in 1997, the Earth Charter Commission formed an international drafting committee. The drafting committee helped to conduct the international consultation process, and the evolution and development of the document reflects the progress of the worldwide dialogue on the Earth Charter. Beginning with the Benchmark Draft issued by the Commission following the Rio+5 Forum in Rio de Janeiro, drafts of the Earth Charter were circulated internationally as part of the consultation process. Meeting at the UNESCO Headquarters in Paris in March 2000, the Commission approved a final version of the Earth Charter.

What are the sources of Earth Charter values?

Together with the Earth Charter consultation process, the most important influences shaping the ideas and values in the Earth Charter are contemporary science, international law, the teachings of indigenous peoples, the wisdom of the world's great religions and philosophical traditions, the declarations and reports of the seven UN summit conferences held during the 1990s, the global ethics movement, numerous non-governmental declarations and people's treaties issued over the past thirty years, and best practices for building sustainable communities.



What is the mission of the international Earth Charter Initiative?

A new phase in the Initiative began with the official launching of the Earth Charter at the Peace Palace in The Hague on June 29, 2000. The mission of the Initiative is to establish a sound ethical foundation for the emerging global society and to help build a sustainable world based on respect for nature, universal human rights, economic justice, and a culture of peace.

What are the goals of the Earth Charter Initiative?

1. To promote the dissemination, endorsement, and implementation of the Earth Charter by civil society, business, and government.
2. To encourage and support the educational use of the Earth Charter in schools, universities, faith communities, and many other settings.
3. To seek endorsement of the Earth Charter by the United Nations.

# The Earth Charter

March 2000

## Preamble

*W*E STAND AT A CRITICAL MOMENT in Earth's history, a time when humanity must choose its future. As the world becomes increasingly interdependent and fragile, the future at once holds great peril and great promise. To move forward we must recognize that in the midst of a magnificent diversity of cultures and life forms we are one human family and one Earth community with a common destiny. We must join together to bring forth a sustainable global society founded on respect for nature, universal human rights, economic justice, and a culture of peace. Towards this end, it is imperative that we, the peoples of Earth, declare our responsibility to one another, to the greater community of life, and to future generations.

## Earth, our home

Humanity is part of a vast evolving universe. Earth, our home, is alive with a unique community of life. The forces of nature make existence a demanding and uncertain adventure, but Earth has provided the conditions essential to life's evolution. The resilience of the community of life and the well-being of humanity depend upon preserving a healthy biosphere with all its ecological systems, a rich variety of plants and animals, fertile soils, pure waters, and clean air.

The global environment with its finite resources is a common concern of all peoples. The protection of Earth's vitality, diversity, and beauty is a sacred trust.

## The global situation

The dominant patterns of production and consumption are causing environmental devastation, the depletion of resources, and a massive extinction of species. Communities are being undermined. The benefits of development are not shared equitably and the gap between rich and poor is widening. Injustice, poverty, ignorance, and violent conflict are widespread and the cause of great suffering. An unprecedented rise in human population has overburdened ecological and social systems. The foundations of global security are threatened. These trends are perilous—but not inevitable.

## The challenges ahead

The choice is ours: form a global partnership to care for Earth and one another or risk the destruction of ourselves and the diversity of life. Fundamental changes are needed in our values, institutions, and ways of living. We must realize that when basic needs have been met, human development is primarily about being more, not having more. We have the knowledge and technology to provide for all and to reduce our impacts on the environment. The emergence of a global civil society is creating new opportunities to build a democratic and humane world. Our environmental, economic, political, social, and spiritual challenges are interconnected, and together we can forge inclusive solutions.

## Universal responsibility

To realize these aspirations, we must decide to live with a sense of universal responsibility, identifying ourselves with the whole Earth community as well as our local communities. We are at once citizens of different nations and of one world in which the local and global are linked. Everyone shares responsibility for the present and future well-being of the human family and the larger living world. The spirit of human solidarity and kinship with all life is strengthened when we live with reverence for the mystery of being, gratitude for the gift of life, and humility regarding the human place in nature.

We urgently need a shared vision of basic values to provide an ethical foundation for the emerging world community. Therefore, together in hope we affirm the following interdependent principles for a sustainable way of life as a common standard by which the conduct of all individuals, organizations, businesses, governments, and transnational institutions is to be guided and assessed.

# Principles

## I. Respect and care for the community of life

1. Respect Earth and life in all its diversity.

   Recognize that all beings are interdependent and every form of life has value regardless of its worth to human beings. Affirm faith in the inherent dignity of all human beings and in the intellectual, artistic, ethical, and spiritual potential of humanity.

2. Care for the community of life with understanding, compassion, and love.

   Accept that with the right to own, manage, and use natural resources comes the duty to prevent environmental harm and to protect the rights of people. Affirm that with increased freedom, knowledge, and power comes increased responsibility to promote the common good.

3. Build democratic societies that are just, participatory, sustainable, and peaceful.

   Ensure that communities at all levels guarantee human rights and fundamental freedoms and provide everyone an opportunity to realize his or her full potential. Promote social and economic justice, enabling all to achieve a secure and meaningful livelihood that is ecologically responsible.

4. Secure Earth's bounty and beauty for present and future generations.

Recognize that the freedom of action of each generation is qualified by the needs of future generations. Transmit to future generations values, traditions, and institutions that support the long-term flourishing of Earth's human and ecological communities.

In order to fulfill these four broad commitments, it is necessary to:

## II. Ecological integrity

5. Protect and restore the integrity of Earth's ecological systems, with special concern for biological diversity and the natural processes that sustain life.

Adopt at all levels sustainable development plans and regulations that make environmental conservation and rehabilitation integral to all development initiatives. Establish and safeguard viable nature and biosphere reserves, including wild lands and marine areas, to protect Earth's life support systems, maintain biodiversity, and preserve our natural heritage. Promote the recovery of endangered species and ecosystems. Control and eradicate non-native or genetically modified organisms harmful to native species and the environment, and prevent introduction of such harmful organisms. Manage the use of renewable resources such as water, soil, forest products, and marine life in ways that do not exceed rates of regeneration and that protect the health of ecosystems. Manage the extraction and use of non-renewable resources such as minerals and fossil fuels in ways that minimize depletion and cause no serious environmental damage.

6. Prevent harm as the best method of environmental protection and, when knowledge is limited, apply a precautionary approach.

Take action to avoid the possibility of serious or irreversible environmental harm even when scientific knowledge is incomplete or inconclusive. Place the burden of proof on those who argue that a proposed activity will not cause significant harm, and make the responsible parties liable for environmental harm. Ensure that decision making addresses the cumulative, long-term, indirect, long distance, and global consequences of human activities. Prevent pollution of any part of the environment and allow no build-up of radioactive, toxic, or other hazardous substances. Avoid military activities damaging to the environment.

7. Adopt patterns of production, consumption, and reproduction that safeguard Earth's regenerative capacities, human rights, and community well-being.

Reduce, reuse, and recycle the materials used in production and consumption systems, and ensure that residual waste can be assimilated by ecological systems. Act with restraint and efficiency when using energy, and rely increasingly on renewable energy sources such as solar and wind. Promote the development, adoption, and equitable transfer of environmentally sound technologies. Internalize the full environmental and social costs of goods and services in the selling price, and enable consumers to identify products that meet the high- est social and environmental standards. Ensure universal access to health care that fosters reproductive health and responsible reproduction. Adopt lifestyles that emphasize the qual- ity of life and material sufficiency in a finite world.

8. Advance the study of ecological sustainability and promote the open exchange and wide application of the knowledge acquired.

Support international scientific and technical cooperation on sustainability, with special attention to the needs of developing nations. Recognize and preserve the traditional knowledge and spiritual wisdom in all cultures that contribute to environmental protection and human well-being. Ensure that information of vital importance to human health and environmental protection, including genetic information, remains available in the public domain.

## III. Social and economic justice

9. Eradicate poverty as an ethical, social, and environmental imperative.

   Guarantee the right to potable water, clean air, food security, uncontaminated soil, shelter, and safe sanitation, allocating the national and international resources required. Empower every human being with the education and resources to secure a sustainable livelihood, and provide social security and safety nets for those who are unable to support themselves. Recognize the ignored, protect the vulnerable, serve those who suffer, and enable them to develop their capacities and to pursue their aspirations.

10. Ensure that economic activities and institutions at all levels promote human development in an equitable and sustainable manner.
    Promote the equitable distribution of wealth within nations and among nations. Enhance the intellectual, financial, technical, and social resources of developing nations, and relieve them of onerous international debt. Ensure that all trade supports sustainable resource use, environmental protection, and progressive labor standards. Require multinational corporations and international financial organizations to act transparently in the public good, and hold them accountable for the consequences of their activities.

11. Affirm gender equality and equity as prerequisites to sustainable development and ensure universal access to education, health care, and economic opportunity.

    Secure the human rights of women and girls and end all violence against them. Promote the active participation of women in all aspects of economic, political, civil, social, and cultural life as full and equal partners, decision makers, leaders, and beneficiaries. Strengthen families and ensure the safety and loving nurture of all family members.

12. Uphold the right of all, without discrimination, to a natural and social environment supportive of human dignity, bodily health, and spiritual well-being, with special attention to the rights of indigenous peoples and minorities.

    Eliminate discrimination in all its forms, such as that based on race, color, sex, sexual orientation, religion, language, and national, ethnic or social origin. Affirm the right of indigenous peoples to their spirituality, knowledge, lands and resources and to their related practice of sustainable livelihoods. Honor and support the young people of our communities, enabling them to fulfill their essential role in creating sustainable societies. Protect and restore outstanding places of cultural and spiritual significance.

## IV. Democracy, nonviolence, and peace

13. Strengthen democratic institutions at all levels, and provide transparency and accountability in governance, inclusive participation in decision making, and access to justice.

    Uphold the right of everyone to receive clear and timely information on environmental matters and all development plans and activities which are likely to affect them or in which they have an interest. Support local, regional and global civil society, and promote the meaningful participation of all interested individuals and organizations in decision making. Protect the rights to freedom of opinion, expression, peaceful assembly, association, and dissent. Institute effective and efficient access to administrative and independent judicial procedures, including remedies and redress for environmental harm and the threat of such harm. Eliminate corruption in all public and private institutions. Strengthen local communities, enabling them to care for their environments, and assign environmental responsibilities to the levels of government where they can be carried out most effectively.

14. Integrate into formal education and life-long learning the knowledge, values, and skills needed for a sustainable way of life.

    Provide all, especially children and youth, with educational opportunities that empower them to contribute actively to sustainable development. Promote the contribution of the arts and humanities as well as the sciences in sustainability education. Enhance the role of the mass media in raising awareness of ecological and social challenges. Recognize the importance of moral and spiritual education for sustainable living.

15. Treat all living beings with respect and consideration.

    Prevent cruelty to animals kept in human societies and protect them from suffering. Protect wild animals from methods of hunting, trapping, and fishing that cause extreme, prolonged, or avoidable suffering. Avoid or eliminate to the full extent possible the taking or destruction of non-targeted species.

16. Promote a culture of tolerance, nonviolence, and peace.

    Encourage and support mutual understanding, solidarity, and cooperation among all peoples and within and among nations. Implement comprehensive strategies to prevent violent conflict and use collaborative problem solving to manage and resolve environmental conflicts and other disputes. Demilitarize national security systems to the level of a non-provocative defense posture, and convert military resources to peaceful purposes, including ecological restoration. Eliminate nuclear, biological, and toxic weapons and other weapons of mass destruction. Ensure that the use of orbital and outer space supports environmental protection and peace. Recognize that peace is the wholeness created by right relationships with oneself, other persons, other cultures, other life, Earth, and the larger whole of which all are a part.

## The way forward

AS NEVER BEFORE IN HISTORY, common destiny beckons us to seek a new beginning. Such renewal is the promise of these Earth Charter principles. To fulfill this promise, we must commit ourselves to adopt and promote the values and objectives of the Charter.

*This requires a change of mind and heart. It requires a new sense of global interdependence and universal responsibility. We must imaginatively develop and apply the vision of a sustainable way of life locally, nationally, regionally, and globally. Our cultural diversity is a precious heritage and different cultures will find their own distinctive ways to realize the vision. We must deepen and expand the global dialogue that generated the Earth Charter, for we have much to learn from the ongoing collaborative search for truth and wisdom.* [Author's emphasis]

Life often involves tensions between important values. This can mean difficult choices. However, we must find ways to harmonize diversity with unity, the exercise of freedom with the common good, short-term objectives with long-term goals. Every individual, family, organization, and community has a vital role to play. The arts, sciences, religions, educational institutions, media, businesses, non-governmental organizations, and governments are all called to offer creative leadership. The partnership of government, civil society, and business is essential for effective governance.

In order to build a sustainable global community, the nations of the world must renew their commitment to the United Nations, fulfill their obligations under existing international agreements, and support the implementation of Earth Charter principles with an international legally binding instrument on environment and development.

Let ours be a time remembered for the awakening of a new reverence for life, the firm resolve to achieve sustainability, the quickening of the struggle for justice and peace, and the joyful celebration of life.

# How the Earth Charter Relates to Friends' Beliefs and Testimonies

by Ruah Swennerfelt

THE TIME HAS COME to find a common language for all the cultures of our planet. If we continue to believe in only one way which excludes others, we will continue to systematically destroy the ecology of the Earth. Whether we believe the planet is God's Creation or a random set of circumstances, or something between the two, we must all work together to assure the health of the planet for the future generations of all species. We understand the interconnectedness of the Earth's systems and that when one species becomes extinct, many other species are affected. I believe that the Earth Charter can be the common language of humans. It was written by a diverse set of people of all the major religions and cultures. If that group could come to agreement on the language, we Friends should be able to find how our particular language can harmonize with the language of the Earth Charter.

I believe the Earth Charter is very compatible with the historic Friends' Testimonies. I have listed here the Testimonies and which parts of the Earth Charter I believe support them. As you can see there are many overlapping ideas.

## Our Testimony of Simplicity

Principle 2: "*Care for the community of life with understanding, compassion, and love.*"

Principle 4: "*Secure Earth's bounty and beauty for present and future generations*."

Principle 7: "*Adopt patterns of production, consumption, and reproduction that safeguard Earth's regenerative capacities, human rights, and community well-being.*"

Principle 15: "*Treat all living beings with respect and consideration.*"

## Our Testimony of Peace

Principle 1: "*Respect Earth and life in all its diversity.*"

Principle 2: "*Care for the community of life with understanding, compassion, and love.*"

Principle 3: "*Build democratic societies that are just, participatory, sustainable, and peaceful.*"

Principle 13: "*Strengthen democratic institutions at all levels, and provide transparency and accountability in governance, inclusive participation in decision making, and access to justice.*"

Principle 15: "*Treat all living beings with respect and consideration.*"

Principle 16: "*Promote a culture of tolerance, nonviolence, and peace.*"

## Our Testimony of Equality

Principle 1: "*Respect Earth and life in all its diversity.*"

Principle 3: "*Build democratic societies that are just, participatory, sustainable, and peaceful.*"

Principle 10: "*Ensure that economic activities and institutions at all levels promote human development in an equitable and sustainable manner.*"

Principle 11: "*Affirm gender equality and equity as prerequisites to sustainable development and ensure universal access to education, health care, and economic opportunity.*"

Principle 15: "*Treat all living beings with respect and consideration.*"

## Our Testimony of Integrity

Principle 1: "*Respect Earth and life in all its diversity.*"

Principle 3: "*Build democratic societies that are just, participatory, sustainable, and peaceful.*"

Principle 9: "*Eradicate poverty as an ethical, social, and environmental imperative.*"

Principle 10: "*Ensure that economic activities and institutions at all levels promote human development in an equitable and sustainable manner.*"

Principle 14: "*Integrate into formal education and life-long learning the knowledge, values, and skills needed for a sustainable way of life.*"

## Our Testimony of Truthfulness

Principle 6: "*Prevent harm as the best method of environmental protection and, when knowledge is limited, apply a precautionary approach.*"

Principle 8: "*Advance the study of ecological sustainability and promote the open exchange and wide application of the knowledge acquired.*"

Principle 13: "*Strengthen democratic institutions at all levels, and provide transparency and accountability in governance, inclusive participation in decision making, and access to justice.*"

## Questions for reflection

1. As a member of my Friends community, as well as of my work and home communities, do I seek guidance in the Light for ways that I may lead and participate in actions which both heal the Earth and inspire others regarding the urgency of this healing?
2. Is the Meeting aware of the spiritual basis of our concern for the environment? Do we seek to be aware of God's love and energy in all of Creation? Living in that spirit, do we strive to relate with love and respect to ourselves, other people, other creatures, all living and inanimate objects, and materials that we meet each day? Are we formulating and implementing an ethic for responsible stewardship of our planet?
3. How do I see the Earth Charter and Friends' Testimonies intersecting?
4. How can we respond to the proposals in the Earth Charter? How would our congregation need to change to live up to the ideals set forth?
5. How do we strive to live up to our Testimonies? Do we believe the connections are clear between our beliefs and those of the Earth Charter?
6. What are our next steps?

## Illustrative activities

- Form an Earth Charter study group.
- Encourage your church or Meeting or Yearly Meeting to endorse the Earth Charter and then inform the Earth Charter Commission of your action.
- Distribute the Earth Charter in your community and encourage your town or city and businesses and churches to endorse and implement it. (Many organizations, businesses, churches including some Yearly Meetings, and municipalities have endorsed it. A list is available on the Earth Charter website.)
- Begin first steps to make changes in your corporate and personal lives to support the Earth Charter principles.

## Prayer

O most high, almighty, good Lord God, to Thee belong praise, glory, honor and all blessing:

Praised be my Lord God with all his creatures, and specially our brother the sun, who brings us the day and who brings us the light; fair is he and shines with a very great splendor: O Lord, he signifies to us Thee!

Praised be my Lord for our sister the moon, and for the stars, the which He has set clear and lovely in heaven.

Praised be my Lord for our brother the wind, and for air and clouds, calms and all weather by which Thou upholdest life in all creatures.

Praised be my Lord for our sister water, who is very serviceable unto us and humble and precious and clean.

Praised be my Lord for our brother fire, through whom Thou givest us light in the darkness; and he is bright and pleasant and very mighty and strong.

Praised be my Lord for our mother the earth, the which doth sustain us and keep us and bringeth forth divers fruits and flowers of many colors, and grass.

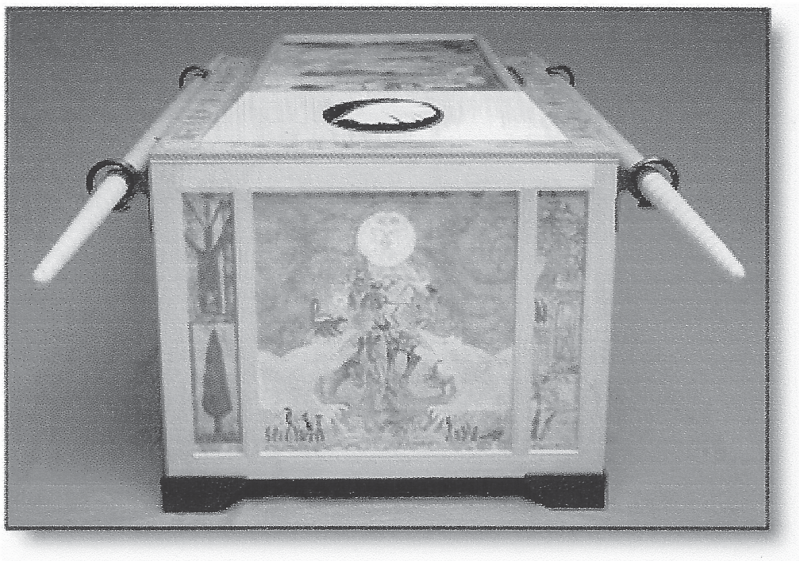
Praise ye and bless the Lord, and give thanks unto Him and serve Him with great humility.

—The Canticle of St. Francis

# The Ark of Hope

The Ark of Hope, a 49-inch (124.5cm) x 32-inch (81.3cm) x 32-inch (81.3cm) wooden chest, was created as a place of refuge for the Earth Charter document, an international peoples treaty for building a just, sustainable, and peaceful global society in the 21st century.

The Ark of Hope was created for a celebration of the Earth Charter that was held at Shelburne Farms, Shelburne, Vt., on September 9, 2001. The event, for Love of Earth, featured keynote speaker Jane Goodall, global peace walker Satish Kumar, musician Paul Winter, and Dr. Steven C. Rockefeller, a member of the Earth Charter Commission. Visit website *http://phlox.gardeners.com/earthcharter* for a description of the event and *http://www.jasonhouston.com/earthcharter* for photos of the day



On September 11, 2001, volunteers were cleaning up from the September 9th event when news of the New York and Washington, DC tragedies was heard. Sally Linder's immediate, spontaneous response to the horror was to begin walking the Ark of Hope more than 350 miles to New York and the United Nations. Joined by Andrea Morgante and Janet Fredericks, they carried the 200-pound chest across the meadows of the farm to Route 7, where they were joined by Susan Diehl Dufort. Many other walkers have since joined this pilgrimage to the United Nations, bringing with them hope and the vision of the Earth Charter to communities along the way. The Ark of Hope was presented as a gift to the United Nations and later exhibited at the United Nations during the World Summit PrepComII in January-February 2002. It was also exhibited at the Interfaith Center of New York. At the 2002 World Summit on Sustainable Development in Johannesburg, South Africa, the Ark of Hope was ceremoniously offered to the world by the children of Diepsloot, an informal settlement in Johannesburg.

The Ark of Hope also provides refuge for Temenos Books, Images for Global Healing, Peace, and Gratitude. Over 300 handcrafted 8-inch x 8-inch x 2-inch books were made by artists, schoolchildren, and Vermont citizens, expressing their individual and collaborative prayers and affirmations for Earth. The Earth Charter's 16 principles for building a just, sustainable, and peaceful global society were the guiding vision behind the creation of these books.

The Ark was designed and painted by Sally Linder, built by cabinet maker Kevin Jenness and lined by fabric artist Beth Haggart. It was crafted from a single plank of sycamore from a tree in Germany. The five painted panels that form the sides and top of the Ark each represent the flora and fauna of the world as seen through the images of the world's traditional artists. Each panel visualizes a season, a direction, an element, and a universal symbol. Symbols of faith from traditional religions and indigenous societies surround the top panel of "Spirit" that honors the children and young animals of the world.

Inside the Ark, the Earth Charter is handwritten on papyrus paper. The University of Cairo supplied Sally with instructions for making paper with papyrus—a plant known to have the ability to purify water of pollutants in the world. The papyrus was harvested from the Living Systems, Inc. waste treatment plant in South Burlington, Vt., soaked for two weeks in Sally's bathtub, then pressed using a 90,000-pound press at Landell Papers, a Vermont papermaker in East Topsham.

The Ark of Hope carrying the vision of the Earth Charter belongs to Earth and humankind. Its life grows when it is shared. It is hoped that nations around the world will bring the Ark of Hope to their people, continuing to introduce the Earth Charter to audiences globally, spreading hope and the recognition of the interdependence of justice, and economic and ecological integrity, which together build a culture of peace.

## References: Unit 18: Earth Charter and Friends Testimonies


- Earth Charter International Secretariat, Mirian Vilela, Executive Director, c/o University for Peace, P.O. Box 319-6100, San Jose, Costa Rica; 506/205-1600; *info@earthcharter.org*.
- Earth Charter Website: <*http://www.earthcharter.org*>.