Chapter One Native Americans: America's First Ecologists?

By Don Grinde

In the late twentieth century, increased pollution of air, water, and soil has spurred a mushrooming environmental movement. Increased attention to environmental problems has also fostered examination of the history of ecological thought, including the attitudes of Native Americans toward the natural world. Environmental philosophy has called the native example into service to question the basic assumptions of a technologically driven, resource-extracting economy. Study of many native cultures reveals a reverence for nature that was intertwined with daily life, solidified by rituals. In our time, many native peoples who practiced such a "natural theology" now face deadly pollution in their homelands, following the growth of industry. In fact, today some native reservations contain some of the worst toxic dumps in North America.

Native American Perspectives on the Environment

Environmental conservation was not a subject of general debate and controversy in the mid-nineteenth century, as Euro-American settlement spread across the land mass of the United States. Yet, from time to time, the records of the settlers contain warnings by native leaders whose peoples they were displacing describing how European attitudes toward nature would ruin the land, air, and water. Perhaps the most famous warning of this type came from Chief Seattle, a leader of the Duwamish, who in 1854 prepared to move his people across Puget Sound, away from the growing city of Seattle. He expresses the reverence his people have for the land:

> Our dead never forget the beautiful world that gave them being. They still love its verdant valleys, its murmuring rivers, its magnificent mountains, sequestered vales and verdant-lined lakes and bays.... Every part of this soil is sacred in the estimation of my people. Every hillside, every valley, every plain and grove has been hallowed by some sad or happy event in days long vanished. Even the rocks, which seem to be dumb and dead as they swelter in the sun along the silent shore, thrill with memories of stirring events connected with the lives of my people.

In the development of an environmental philosophy, Chief Seattle's words are often cited in the late twentieth century as evidence that many Native Americans practiced a stewardship ethic toward the earth long before such attitudes became popular in non-Indian society. The debate ranges from acceptance of several versions of Chief Seattle's speech (some of them embellished) to a belief that the original translator, Dr. Henry Smith, as well as many people who followed him, put the ecological concepts into the chief's mouth.

However, it is difficult to believe that Smith, in 1854, would have fabricated an environmental message for an English-speaking audience for whom conservation was not an issue, and no one has provided any motive for such a fabrication. Regardless of the exact wording of Seattle's speech, it did contain environmental themes. Chief Seattle was not telling the immigrants what they wanted to hear because they displayed no such ideological bent. If there was an environmental movement among whites in 1850s Seattle, local historians have yet to find any evidence of it.

Embellishment of the speech did occur, however, for a willing audience in 1972 after the modern advent of Earth Day. Ted Perry, a scriptwriter, put several phrases in the chief's mouth in his 1972 film Home. Two examples: Seattle never said, "The earth is our mother" in those words. Nor did he discourse on the whites' slaughter of buffalo–his people's culture was based on salmon and other fish. It should be noted, however, that references to the earth as "mother" were not uncommon across North America in the early years of Euro-American settlement. Despite its lack of authenticity, Perry's paraphrased version of Seattle's speech enjoyed wide coverage in the 1970s through the 1990s. On Earth Day 1992, organizers asked religious leaders to read the revised version of Seattle's speech from a children's book, Brother Eagle, Sister Sky: A Message from Chief Seattle. The book was released in September 1991 and sold 280,000 copies by May 1992. Two decades after his film paraphrased Chief Seattle, Perry, a professor at Middlebury College in Vermont, said he has been trying to set the record straight: "Why are we so willing to accept a text like this if it's attributed to a Native American?" he asked. It's another case of placing Native Americans upon a pedestal and not taking responsibility for our own actions.

Other environmentalists see attribution of their ideas to Native Americans as simple historical accuracy. On Earth Day 1992, several thousand participants in Kansas City decided to unify historical and ecological themes in looking at the consequences of five hundred years since the discovery of America by Columbus. Among other activities, in a Kansas City park they assembled from recyclable materials a turtle that was larger than two football fields end to end. The turtle was meant to observe the Iroquois creation myth in which North America (Turtle Island) is said to have come into being on the back of a turtle.

Unlike the quotations from Chief Seal'th, there has been no controversy regarding the authenticity of material from Luther Standing Bear, who watched the last years of settlement on the Great Plains. He contrasts the Euro-American and Native American conceptions of the natural world of North America:

We did not think of the great open plains, the beautiful rolling hills, and winding streams with tangled brush, as "wild." Only to the

white man was nature a wilderness" and only to him was the land "infested " with "wild " animals and "savage" people. To us it
was tame. Earth was bountiful, and we are surrounded with the blessings of the Great Mystery.

In the late twentieth century, similar sentiments were expressed by Jewell Praying Wolf James, a Lummi native who is a lineal
descendant of Chief Seattle:

> At one time our plains. plateaus, and ancient forests were respected and not considered a wilderness. The skies were
> darkened by migrating fowl; the plains were blanketed with massive herds of buffalo. Our mountains teemed with elk, deer,
> bear, beaver, and other fur-bearing animals. All the rivers were full of salmon and other fish -- so much that you could walk
> across their backs to get to the other side. The plants and trees were medicines and food for us.... In 1492 our holocaust
> began.

Vine Deloria, Jr., suggests that scholars who contend that Euro-Americans have "invented" the image of the Indian as ecologist
may be showing their own ignorance of history. Deloria cites Sam Gill's Mother Earth (1987) in which the author says he can find
only two native references to earth as "mother":

> As a by-product of researching Indian treaties, I have come up with numerous references to Mother Earth. Of course I did
> not find these references in ethnographic materials -- I found them in minutes of councils and treaty negotiations.... Indians
> were not sitting around in seminar rooms articulating a nature philosophy for the benefit of non-Indian students, after all.
> They were trying to save their lands from exploitation and expropriation.

Deloria documents the metaphor of earth as mother as far back as 1776. On June 21, at a conference in Pittsburgh during the
Revolutionary War, Cornstalk, who was trying to convince the Mingos (Iroquois) to ally with the Americans, said:

> You have heard the good Talks which our Brother [Gle orge Morgan; TPeepemachukthe (The White Deer)] has delivered
> to us from the Great Council at Philadelphia representing all our white brethren, who have grown out of this same ground
> with ourselves, for this Big [Turtle] Island being our common Mother, we and they are like one Flesh and Blood.~7

Native Ecology's Opponents

Euro-American observers have sometimes scoffed at assertions that Native American culture displayed any sort of ecological
ethos, occasionally charging that the natives had engaged in massive "buffalo kills," driving the animals off cliffs to their deaths.
This practice came into use after Plains Indians adapted to use of the horse, a European contribution to North America's modern

ecology. Even apart from buffalo killed during drives that the horse made possible, the Great Plains still were home to millions of buffalo during the mid-nineteenth century, as Euro-American settlement spread across the region. Actually, it was Europeans and immigrant Americans who obliterated the buffalo herds. The U.S. government at times subsidized hunters who slaughtered vast numbers of buffalo for their hides, or even only for their tongues. The government also subsidized the railroads which brought the non-Indian hunters to the buffalo. Carcasses of animals stripped of their skins were left on the Plains to rot in mountainous piles.

The near-extermination of the buffalo by invading Euro-Americans was no accident. It was partly due to the profit motive and partly due to intentional government policy designed to deprive native peoples of their economic base as well as to (as one popular phrase of the day put it) "kill the Indian and save the man." Since the Plains tribes typically used every part of the buffalo–meat, hides, horns, and teeth, without the buffalo, native life as it had been became impossible.

Those who believe that Native Americans had no general ecological ethic also sometimes point to native complicity in the slaughter of the beaver and other fur-bearing animals for trade. European or Euro-American traders contracted with Indians for so many pelts that the animals almost disappeared. Calvin Martin has speculated that some native peoples held the beaver responsible for the incursions of immigrants and so took "revenge" on the animals. In Keepers of the Game: Indian-Animal Relationships and the Fur Trade, Martin contends that the image of Native Americans as conservationists is just another stereotype of Native Americans by non-Indians:

> Late in the 1960s, the North American Indian acquired yet another stereotypic image in the popular mind: the erstwhile "savage," the "drunken" Indian, the "vanishing" Indian was conferred the title of "ecological " (i.e., conservationist-minded) Indian. Propped up for everything that was environmentally sound, the Indian was introduced to the American public as the great high priest of the Ecology Cult.~8

In Martin's view, millions of dead beaver effectively destroy the veracity of any argument that native peoples generally held nature to be sacred and that most native peoples took from nature only what they needed. For as long as harvestable numbers of beaver remained, native hunters teamed with Europeans and Euro-Americans to take as many as possible in the shortest time, using the motivations of a market economy rather than a conservation ethic.

However, the native peoples did not initiate the commercial fur trade. They had lived in natural symbiosis with the beaver and other fur-bearing animals for thousands of years before Europeans, so intent on remaking others in their own image, imposed mercantile capitalism on them. European immigrants employed the native peoples in this endeavor not vice versa. Further, by the time of the

fur trade, the market economy was destroying more than the beaver populations. The native societies themselves were being
destroyed through the spread of trade goods, liquor, and disease, as well as because of the loss of game animals and land base.
Simply put, during early contact native peoples were trying to survive under rules imposed upon them. Native peoples who took
part in the fur trade often did so to acquire trade goods that created other dependencies and caused them to abandon traditional
beliefs and modes of economy. Beginning as early as 1700, native peoples realized what was happening to them and debated in
their councils whether European trade goods should be accepted at all. It is clear that the fur trade was a post-contact
phenomenon and that if a trading industry had not existed, the beaver would not have been hunted to near extinction.

Some ethnohistorians maintain that Native Americans possessed little or no environmental philosophy, and that any attempt to
assemble evidence to sustain a Native American ecological paradigm is doomed to failure because the entire argument is an
exercise in wishful thinking by environmental activists seeking support for their own views. William A. Starna, professor of
anthropology at the State University of New York at Oneonta, has called the argument that Native Americans had an
environmental ethic "pan-Indian mythology."~9 As he does in the face of evidence that the Iroquois helped inspire democracy,
Starna asserts that modern Indian activists" made up the idea of native environmentalism.

To the contrary, anyone who believes that American Indians only recently began using the metaphor of earth as mother knows
precious little history. It has been documented that European colonists began hearing such references shortly after the first Pilgrims
arrived. In Brave Are My People: Indian Heroes Not Forgotten, Frank Waters describes a "purchase" by Miles Standish and two
companions of a tract of land fourteen miles square near Bridgewater, for seven coats, eight hoes, nine hatchets, ten yards of
cotton cloth, twenty knives, and four moose skins. When native people continued to hunt on the land after it was "purchased" and
were arrested by the Pilgrims, the Wampanoag sachem Massasoit protested:

What is this you call property? It cannot be the earth. For the land is our mother, nourishing all her children, beasts, birds, fish, and
all men. The woods, the streams, everything on it belongs to everybody and is for the use of all. How can one man say it belongs to
him only?~11

While Standish and his companions thought they had an English-style deed, Massasoit argued that their goods had paid only for use
of the land in common with everyone.

The metaphor of earth as mother recurs time and again in the statements of Native American leaders recorded by Euro-American

observers, in many areas of North America and long before Chief Seattle's well-known speech. Tecumseh, rallying native allies
with an appeal for alliance about 1805, said, "Let us unite as brothers, as sons of one Mother Earth.... Sell our land? Why not sell
the air.... Land cannot be sold."~l2 Black Hawk, exiled to a reservation near Fort Madison, Iowa, after the three-month war that
bears his name, opened a Fourth of July address to a mainly non-Indian audience in the late 1830s by observing, "The Earth is our
mother; we are on it, with the Great Spirit above us."~l3

In 1877, the Nez Perce Chief Joseph, who likely knew nothing of Massasoit, replied to an Indian agent's proposal that he and his
people move to a reservation and become farmers. This statement was made a few months before Joseph and his band fled 1,700
miles across some of the most rugged land in North America to avoid subjugation. Chief Joseph said: "The land is our mother....
She should not be disturbed by hoe or plow. We want only to subsist on what she freely gives us." ~l4 Smohalla, a religious leader
of the Nez Perce, said at the same meeting:

> You ask me to plow the ground? I should take a knife and tear my mother's bosom? Then when I die, she will not take me
> to her bosom to rest.... You ask me to dig for stone! Shall I dig under her skin for her bones? Then when I die I cannot
> enter her body to be born again. You ask me to cut grass and make hay and sell it, to be rich like white men! But how dare
> I cut off my mother's hair?~l3

A third Nez Perce chief, Tuhulkutsut, joined in: "The earth is part of my body. I belong to the land out of which I came. The earth
is my mother." In response to these statements, it is recorded that U.S. negotiator General Oliver O. Howard protested, "Twenty
times over [you] repeat that the earth is your mother.... Let us hear it no more, but come to business."~l6

In addition to the numerous references to the earth as mother, the ecological metaphors of Lakota holy man Black Elk, as told to
John Niehardt, emphasize the utmost reverence for the natural world. In the late nineteenth century, long before "pan-Indian
mythology" and long before environmental contamination became a widespread problem, Black Elk said: "Every step that we take
upon You [the earth] should be done in a sacred manner; every step should be taken as a prayer."

Ecological metaphors also were woven into the languages of many Native American cultures. For example, the Maya word for
"tree sap" is the same as the word for ablood."~l8 "Who cuts the trees as he pleases cuts short his own life," said the Mayas, long
before pan-Indianism.

Indeed, it is remarkable that, at the time of the first sustained contact with Europeans, so many diverse native cultures -- 2,000
distinct societies speaking several hundred different languages–all shared ways of life which involved symbiosis with the natural

world. Some evidence indicates that population densities were generally lower than those of twentieth-century North America, not
because resources were scarce or because native technology was limited but because they were kept low. The Cherokees' oral
history, for example, contains stories in which animals worry about the land becoming too crowded with human beings.~l9 Very
possibly, these stories were an example of the Cherokee aHarmony Ethic," which pervaded not only the relationships between
people but also people's regard for the earth. Many native peoples consciously spaced the birth of children, and certain plants were
used as contraceptives. Indeed, Thomas Jefferson comments: "[T]hey have fewer children than we do . . . [and] have learned the
practice of procuring abortion by the use of some vegetable.~20 Jefferson also noted that such herbal birth control practices
prevented "conception for a considerable time after. ~21

While many Native American customs and rituals also indicate a reverence for the earth as provider, or "mother," the tidal wave of
settlers who swept across North America in the nineteenth century typically thought of the earth in terms of a a mother lode" to be
exploited for profit. Most EuroAmericans did not quote the words of Seattle and Standing Bear with frequency until long after they
were spoken.

Christopher Vecsey and Robert W. Venables, in American Indian Environments: Ecological Issues in Native American History,
make a case that concepts of the earth as sustainer (or "mother") and the sky as "father," realm of the Creator, or a Great
Mystery," are shared by many native cultures across the continent and that the "sacred circle" (or ahoop) is symbolic of
encompassing creation or the sacred interdependence of all things in contrast to Euro-American notions of exploitation:

> The American Indians' concept of a sacred circle expresses a physical and spiritual unity. This circle of life is interpreted
> according to the particular beliefs of each Indian nation, but is broadly symbolic of an encompassing creation.... While
> non-Indians quite willingly admit to the complexity of the circle of "things" around them, what has been left behind by the
> scientific, post-Renaissance non-Indian world is the universal sacredness–the living mystery–of creation's circle. One of the
> themes of this book is the consequences of a conflict during which indigenous Indian nations, who saw their environments as
> the sacred interdependence of the creator's will, confronted waves of post-Renaissance Europeans who saw in the
> environment a natural resource ordained by God for their sole benefit.~22

The circle often becomes the primary native symbol for the world of nature. J. R. Walker's The Sun Dance and Other Ceremonies
of the Oglala Division of the Teton Sioux attributes the following to an Oglala Lakota informant named Tyon.

The Oglala believe the circle to be sacred because the Great Spirit caused everything in nature to be round except stone. Stone is an implement of destruction.... Everything that breathes is round, like the body of man. Everything that grows from the ground is round, like the stem of a tree. Since the Great Spirit has caused everything to be round, mankind should look upon the circle as sacred for it is the symbol of all things in nature except stone. It is also the symbol of the circle that marks the edge of the world and therefore the four winds that travel there. Consequently, it is also the symbol for a year. The day, the night, and the moon go in a circle above the sky. Therefore, the circle is a symbol of these divisions of time and hence the symbol of all time.~23

A similar attitude of reverence toward the earth as mother may be found among the Pueblos of the Southwest:

> We might consider the Pueblo view that in the springtime Mother Earth is pregnant, and one does not mistreat her any more than one might mistreat a pregnant woman. When our technologists go and try to get Pueblo farmers to use steel plows in the spring, they are usually rebuffed. For us it is a technical idea–"Why don't you just use the plows? You plow, and you get 'X' results from doing so. " For the Pueblos, this is meddling with the formal religious idea.... It is against the way in which the world operates. It is against the way things really go. Some Pueblo folks still take the heels off their shoes, and sometimes the shoes off their horses, during the spring. I once asked a Hopi whom I met in the country, "Do you mean to say, then, that if I kick the ground with my foot, it will botch everything up, so nothing will grow?" He said, "Well, I don't know whether that would happen or not, but it would just really show what kind of person you are. ~24

The Mohawks of Akwesasne expressed a similar reverence for nature as a living entity for hundreds of years before their homeland was degraded by pollution. More recently in 1990 Mohawk Nation Council subchief Tom Porter offered a traditional thanksgiving prayer to open the New York Assembly hearings into the crisis at Akwesasne in which he asked how humans could have forgotten our place in the order of nature. This thanksgiving prayer illustrates how intricately love and respect for the earth are woven into Mohawk culture, and how deeply pollution has wounded the traditional way of life:

> [Before] our great-great grandfathers were first born and given the breath of life, our Creator at that time said the earth will be your mother. And the Creator said to the deer, and the animals and the birds, the earth will be your mother, too. And I have instructed the earth to give food and nourishment and medicine and quenching of thirst to all life.... We, the people, humbly thank you today, mother earth.
>
> Our Creator spoke to the rivers and our creator made the rivers not just as water, but he made the rivers a living entity....

You must have a reverence and great respect for your mother the earth.... You must each day say "thank you" [for] every
gift that contributes to your life. If you follow this pattern, it will be like a circle with no end. Your life will be as everlasting
as your children will carry on your flesh, your blood, and your heartbeat.~25

A tribute to the Creator and a reverence for the natural world is reflected in many native greetings over the entire North American
continent. More than 2,500 miles from the homeland of the Mohawks, the Lummis of the Pacific Northwest coast might begin a
public meeting this way:

To the Creator, Great Spirit, Holy Father: may the words that we share here today give the people and [generations] to
come the understanding of the sacredness of all life and creation.~26

The natural world presented icons to the Iroquois. The eastern white pine has had a deep spiritual and political meaning as well as
many practical uses for the Iroquois.

British naval officers, on the other hand, found a different practical use for the tallest trees in eastern North America: they
provided British ships with taller, stronger masts than their French counterparts and thus gave the British a military advantage.

The origin story of the Iroquois Confederacy holds that a Peacemaker planted a Great Tree of Peace at the Onondaga Nation
(near present-day Syracuse, New York) to solve the internecine blood feuds that had been dividing the Haudonosaunee people.
Through the symbolic tree planting, Deganawidah, the Peacemaker, stopped blood feuds as he and his spokesman, Hiawatlla (or
Aionwantha), instituted peace, unity, and clear thinking among the Haudenosaunee. Today's environrllental devastation of the pine
forests of the Northeast caused by acid rain is, to the traditional Iroquois, a deeply troubling tragedy. The eastern white pine is not
only a symbol of peace and unity but also of practical use as a forest product to them. Such an ecological change is perceived
clearly as a threat not only to the physical environment but also to the spiritual and political well-being of the traditional I
Iaudenosaunee.

Native perspectives on the environment often were virtually the opposite of the views of many early settlers, who sought to 'tame"
the "wilderness. Many native peoples endowed all living things with spirit, even objects that Europeans regarded as nonliving, sucl1
as rocks. Most Native Americans saw themselves as enmeshed in a web of interdependent and mutually complementary life. As
Black Elk said: "With all beings and all things, we shall be as relatives." ~27

If Native American ecological philosophy has suffered from oversimplification, so have interpretations of native attitudes toward

land tenure. Often the vastly oversimplified notion that Indians had no concept of land ownership has served two contrary purposes
to Europeans–to bolster the stereotype of the "noble savage" and to salve the conscience of those who were actively expropriating
the land for their own uses. Some early New England colonists assumed that native people had no land tenure ethic because they
did not fence land or raise domestic animals on it. But although Native Americans did not have land deeds or trade in real estate,
they did use the land. William Cronon reminds us to consider the differences between individual ownership of land, which most
Native Americans did not practice, and collective sovereignty:

European property systems were much like Indian ones in expressing the ecological purposes to which a people intended to put
their land; it is crucial that they not be oversirnplified if the ir contributions to ecological history are to be understood. The popular
idea that Europeans had private property, while the Indians did not, distorts European notions of property as much as it d oes
Inclian ones. ~28

According to Cronon, both European and Native American property systems involved distinctions between individual ownership
and community property; and both ~dealt in Luludles of culturallv defined rights that determined what could and could not be done
with land and personal property." ~29 Customs of land tenure varied greatly in detail across New England (and the rest of North
America); generally, however, Native Americans owned the implements of their work, tleir clothing, and other items used in their
daily lives. An extended family which occupied the same lodge usually exercised a sense of ownership. Land, however, was
usually held collectively. America was not a "virgin land" (in the words of George Bancroft) when Europeans arrived. Large tracts
were under intensive management for hunting and agriculture by Native Americans. Because Indians often did not farm or r aise
domestic animals in a European manner, non-native observers often misunderstood this.

Because attitudes toward land tenure varied, negotiations which Europeans took to involve acquisition of land from native people
often involved a high degree of intercultural misunderstanding. When the English colonists of New England thought they were
buying land, Native Americans often took the same agreements to mean that they were agreeing to share it.~30

A Critique of Technology through Native Eyes

The use of sometimes-embellished Native American points of view to critique "modern" society is at least as old as the time of
Benjamin Franklin, who used fictionalized natives to twit pompous British lawyers. Whether Chief Seal'th said everything that has
been attributed to him may be largely beside the point. Native thought contains a reverence for the earth as provider that has

become apparent on a mass scale in non-Indian society in our own time. In recent years, there has been a concerted effort to fuse native points of view with environmental philosophy. One example of this fusion is Jerry Mander's In the Absence of the Sacred.

Mander, a former advertising executive turned critic of technology, introduces native points of view on the environment as a counterpoint to what he regards as a society overly driven by technology. Mander introduces Native Americans as "guardians of an earth-centered way of life, an outlook which may, even on the periphery of modern civilization, serve to call our collective spirit home."~31

Utilization of a Native American example to sharpen a critique of corporate capitalism also is not new. The patriots who dumped East India Company tea into Boston Harbor dressed as Mohawks. Today, such critiques seek to overturn an entire ingrained way of thinking about the earth that has supported expropriation, development, and "progress" for centuries. After more than five centuries of aggressive expansion, these ingrained modes of thinking are only slowly receding as their environmental consequences become more evident to non-native people.

Ironically, just as corporate activity invades the last parcels of indigenous land in places such as the Brazilian and Central American rainforests, the assumptions which underlie "technotopia" seem to be unraveling. In Peter MacDonald's article in Akrve:kon Journal, he writes that Mander has written a book which poignantly tells a story . . . which suggests that the great legacy of indigenous knowledge and culture may be all that stands between the natural world of redemption and the creeping Disney makeover of our environment which glosses over the shaved forests and our fetid rivers of toxins.~32

Mander's critique reflects a growing knowledge of native lifeways among non-Indians who are sensitive to environmental problems created by modern technology. His point of view echoes that of native people around the United States, and ilZe world, encapsulated here by the Lummi Jewell Praying Wolf James:

> The quest for the "higher standard of living" as defined by most Americans in the United States is the nightmare of the rest of the world. This standard has placed America at the top of the list as users of natural resources and producers of toxic contamination. Technology and science have "objectively" separated care and consideration of the cumulative impacts of humankind's collective behavior away from social responsibility. The global community must discover an orientation that teaches the world to do with the minirmal and not the maximum. We have to address our levels of consumption before the whole global community dies of ecocide. ~33

James calls for creation of a "world court of the environrnent" which would publicize the behavior of ~environmentally criminal

activity" around the world. That proposal was originally contained in a declaration by a group of native and non-native writers,
scientists, and environmentalists who met during 1991 in Morelia, Mexico, sometimes called the "Group of 100," of which James
was a member. The "Group of 100" seeks to reshape the assumptions of political economy, and, by doing so, to change modern
life. (See "The NIorelia Declaration," page 255). To do so would require radical surgery on dominant assumptions of a way of life
that Mander calls "technoutopic." Believing that the incentive of profit must be mitigated by concern for people and the earth,
Mander states: "No notion more completely confirms our technological somnambulism than the idea that technology contains no
inherent political bias." ~34 Mander argues that technology is itself an ideology, compelling the ruin of the earth's ecology for
innovation and monetary profit.

Native Ecological Rituals

Most native peoples incorporated nature into their rituals and customs because their lives depended on the bounty of the land
around them. Where a single animal comprised the basis of a native economy (such as the salmon of the Pacific Northwest or the
buffalo of the Great Plains), strict cultural sanctions came into play against the killing of these animals in numbers which would
exceed their natural replacement rate.

On the Great Plains, the military societies of the Cheyennes, Lakotas, and other peoples enforced rules against hunting buffalo out
of season and against taking more animals than could be used. Similarly, Northwest coast peoples treated the salmon with great
respect. The fishing economy formed a base of their subsistence, filling a role similar to that of the buffalo on the Great Plains.
Many native peoples who subsisted mainly on salmon runs intentionally let the fish pass after they had taken enough to see them
through the year. They were acting through conscious knowledge that the salmon runs would vanish if too few fish escaped their
nets to reach spawning grounds at the headwaters of rivers and streams. In addition, respect for these fish was shown through the
custom of thanking them for offering themselves to sustain human beings.

The salmon were also part of the spirit world of Northwest peoples. They were believed to be spirit beings who had their village
under the western ocean. Indians who visited them in visions saw them living in great houses like human beings. Their annual
pilgrimages to the rivers and bays were seen as acts of voluntary sacrifice for the benefit of their human friends. Though they
seemed to die, the spirits had simply removed their outer "salmon robes" and journeyed back to their undersea homes. But they
would return again only if their gifts of flesh were treated with respect. ~35

All along the Northwest coast, the first catch of salmon in the late summer or early fall was laid along a riverbank, often with their

heads pointed upstream, sometimes on a woven mat or cedar board. Sometimes a special shelter was constructed to catch the first
salmon. This first catch might be sprinkled with birds' down as a formal speech of welcome, such as the following, was given:

Oh friends! Thank you that we meet alive. We have lived until this time when you came this year. Now we pray you,
Supernatural Ones, to protect us from danger, that nothing evil may happen to us when we eat you, Supernatural Onesl For
that is the reason why you come here, that we may catch you for food. We know that only your bodies are dead here, but
your souls come to watch over us when we are going to eat what you have given us . . . ~36

The people assembled around the fish would respond with affirmations as the bodies were cooked and divided among them. Such
ceremonies might last for several days of feasting and gift-giving, as large numbers of migrating salmon were allowed past the
Indians' nets to ensure the continuation of the salmon runs; then fishing resumed.

Peoples across the continent customarily feted their main food source with events such as the First Salmon Ceremony of the
Pacific Northwest Indians. On the Great Plains, the buffalo was held in similarly high regard; among agricultural peoples of the
Northeast, the Iroquois for example, festivals celebrated the vital role of the "three sisters" -- corn, squash, and beans.

The Sun Dance ceremonies of the Plains Indians also reflect celebrations of the cycle of life. Like the Christian Easter, the Sun
Dance (which the Cheyennes call the "New Life Lodge") is associated with the return of green vegetation in the spring and early
summer, as well as the increase in animal populations, especially the buffalo. The ritual is communal and expresses a tribe or
nation's unity with the earth and dependence on it for sustenance. The Sun Dance pole is said to unite sky and earth, and the four
sacred directions are incorporated into the ceremonial design. The parts of the dance in which the skin is pierced ale not required
of anyone not ~ishing to participate in them. Some native peoples do not even practice skin piercing during the Sun Dance. In some
ways, the aim of the Sun Dance is similar to that of the First Salmon Ceremony: each is part of a cycle of life and sustenance, and
each demonstrates respect for a people's main food source.

Many native peoples honor and celebrate the plants as well as the animals that they consume, out of a belief that the essence of
life that animates human beings is also present in the entire web of animate and inanimate life. Long hefore a science of "sustained
yield" forestry evolved natives along the Northwest coast harvested plants in a way that would assure tlleir continued growth, as
part of a belief that the trees were sentient beings. ~37

Corn, the major food source for several agricultural peoples across the continent, had a special spiritual significance. Often corn

and beans (which grow well together because the beans, a legume, fix nitrogen in their roots) were said to maintain a spiritual union. Some peoples, such as the Omahas of the eastern Great Plains, "sang up" their corn through special rituals. In addition to "singing up the corn," the Pueblos cleaned their storage bins before the harvest, "so the corn [would] be happy when we [brought: it in." ~38 The Pawnees grew ten varieties of corn, including one that was used only for religious purposes (called "holy," or "wonderful," corn), and was never eaten.~39 The NIandans had a corn priest who officiated at rites during the growing season.
~40 Each stage of the corn's growth was associated with particular songs and rituals, and spiritual attention was said to be as important to the corn as proper water, sun, and fertilizer. Among the Zunis, a newborn child was given an ear of corn at birth and endowed with a "corn name." An ear of maize was put in the place of death as the "heart of the deceased" and was later used as seed corn to begin the cycle of life anew. To Navajos, corn was as sacred as human life. ~41

Some native peoples also used fire to raze fields for farmin g, to drive game while hunting, and to aid regeneration of vegetation. These were not fires left to blaze out of control; instead, Navajos who, for example, used range fires customarily detailed half of their hunting party to control the fire and to keep it on the surface, where the flames would clear old brush so that new plant life could generate, instead of destroying the forest canopy. Donald J. Hughes, in American Indian Ecology, points out that when Europeans first laid eyes on North America, it was much more densely forested than today: "Eastern America was a land of vigorous forests, not a fire-scarred wasteland." ~42 The park-like appearance of many eastern forests was a result of native peoples' efforts to manage plant and animal life, not a natural occurrence.~43

Although a majority of native peoples did not possess a concept of individual land ownership per se, their rituals and rites, as well as their daily lives, displayed a reverence for the land with which their lives were so closely intertwined. Land was typically (but not always) held in common by a particular group–clan, tribe, or native nation. In the Cherokee language, the word that means "land" (elohch) also denotes culture, history, and religion. ~44

The interweaving of ecological and religious themes is a constant among most native peoples across North America. T he application of Western environmental and religious terminology to native worldviews sometimes does not fit:

> Among many native peoples; religion is viewed as embodying the reciprocal relationships between people and the sacred processes going on in the world. It may not involue a "god." It may not be signified by praying or asking for favors, or doing what may "look" religious to people in our culture. For the Navajo, for example, almost everything is related to health, while for us, health is a medical issue.~45

Native modes of perception differ markedly in this regard from Western "knowledge" and ways of knowing. Sometimes ways of
seeing are not directly translatable across cultures.

The term "sacred," used by native peoples to describe certain places, does not carry the same meaning to a devout Catholic,
although it is the closest term English-speaking people have to express the Indian concept. Few native peoples thought of their
attitude toward the land as simply a "conservation ethic." For example, when a Nootka thanked a salmon for offering itself to him,
he also was engaging in a religious ritual.

Native Population Estimates

As we gain a more complete understanding of the native societies that flourished in North America before the voyages of
Columbus, evidence accumulates that many were ecologically successful–that is, native societies provided a larger than previously
thought number of people with the human relationships and technology with which to wrest a satisfactory material and spiritual life
from the environment without destroying it. Of course, America was no stereotypical Garden of Eden. People sometimes went
hungry (usually due to natural rather than societal circumstances); wars were fought, and people died in them. Occasionally, a
native civilization overtaxed its environment and collapsed. Generally, however, native peoples lived well, especially compared to
conditions prevailing after the invasion of the Europeans.

The question of the variety and numbers of peoples who lived in the Americas prior to permanent contact with Europeans has
opened a lively debate during the last third of the twentieth century. This debate involves two very different ways of looking at
historical and archaeological evidence. One side in the population debate restricts itself to strict interpretation of the evidence at
hand. Another point of view accepts the probability that observers (usually of European ancestry) recorded only a fraction of
phenomena that actually occurred in the Americas.

The fact that disease was a major cause of native depopulation is not at issue here–both sides agree on the importance of disease
in the depopulation of the Americas to the point where many settlers thought they had come to an empty land that was theirs for
the taking. The debate is over tile number of native people who died. There also seems to be little disagreement about the fact that
the plagues loosed on the Americas by contact with the Old World have not ended, even today. For example, between 1988 and
1990, 15 percent of the Yanomamis of Brazil, who had only limited contact Native people of European descent until this time, died
of malaria, influenza, and even the common cold. ~46

Henry F. Dobyns, of the Newberry Library, estimates that until the time of Columbus's first voyage about 16 million Native Americans lived in North America north of Mesoamerica, the area populated by the Aztecs and other Central American primitive nations. Since population densities were much greater in Central America and along the Andes, an estimate of 12 million north of Mesoamerica indicates to Dobyns that 90 to 112 million native people lived in the Americas before 1500, making some parts of the New World as densely populated at the time as civilized areas of Europe and Asia. ~48

Dobyns's estimates of indigenous population at contact represent a radical departure from earlier tallies, which depended for tlle most part on actual historical and archaeological evidence of the dead, assuming that Euro-American scholars were capable of counting native people who had, in some cases, been dead for several centuries. Although anthropologists usually date the first attempt at measuring native populations to Henry Schoolcraft in the 1850s, Thomas Jefferson's Notes on the State of Virginia (published in several editions during the 1780s) contained an extensive (if fragmentary) Indian census. Jefferson did not attempt to count the number of native people inhabiting North America during his time -- no one then even knew how large the continent might be, not to mention the number of people inhabiting it. Instead, he prudently settled for estimates of the population of Indian nations bordering the early United States.

The first systematic count of Indian populations was compiled during the early twentieth century by James Mooney, who maintained that at contact 1,153,000 people lived in the land area which is now the United States. Mooney calculated the 1907 native population in the same area at 406,000. Dividing the country into regions, he then calculated the percentage loss to be from 61 percent in the North Atlantic states to 93 percent in California. ~49

Following Mooney's "census", the most widely accepted population estimates were provided beginning in 1939 by A. L. Kroeber in his Cultural and Natural Areas of Native North America. ~50 By Kroeber's determination, only about 900,000 native people occupied North America north of Mexico at contact. According to Ann F. Ramenofky, Kroeber did not consider disease as a faetor in depopulation because he feared that such an emphasis would lead to an overestimation of precontact population. ~51 One may speculate whether this was a case of deliberate scientific oversight or simple prudence, but the fact was that for nearly a half-century his conservative figures were accepted as authoritative (it was a time when one could appear radical by arguing that in 1492 perhaps 2 million natives occupied the area now Icnown as the United States). Sooner or later a challenge was likely to arise. Dobyns, who did consider disease (some say he overemphasized it), challenged Kroeber's figures along with others, to initiate the present debate.

Defending his own precontact population estimates, Dobyns argues that "absence of evidence does not mean absence of phenomenon," especially where written records are scanty, as in America before or just after European contact. ~52 Dobyns's position is that European epidemic diseases invaded a relatively disease-free environment in the Americas with amazing rapidity, first in Mesoamerica (via the Spanish) and then in eastern North America along native trade routes long before English and French settlers arrived. The fact that Cartier observed the deaths of fifty natives in the village of Stadacona in 1535 indicates to Dobyns, for instance, that many more may have died in other villages that Cartier never saw. Because of lack of evidence, conclusions must be drawn from what little remains, according to Dobyns, who extends his ideas to other continents as well. "Lack of Chinese records of influenza does not necessarily mean that the Chinese did not suffer from influenza; an epidemic could have gone unrecorded, or records of it may not have survived," Dobyns has written. ~53

Critics of Dobyns assert that there is still little certain knowledge about pre-1500 population levels." On a historiographic level, Dobyns has been accused of misusing a few scraps of documentary evidence we have in an effort to sustain his argument for widespread 16th-century epidemics. ~54 To Dobyns's critics, the fact that fifty natives were recorded as dying at Stadacona means just that: fifty natives died, no more, no less. To Dobyns, however, such arguments align themselves with the Bandelier-Rosenblatt-Kroeber-Steward group," which minimizes Native American population magnitude and social structural complexity. ~55

While Snow and Lanphear, of the State University of New York at Albany, maintain that "there were often buffer zones between population concentrations or isolates that would have impeded the spread of diseases," ~56 Dobyns replies that the practice of trade, war, diplomacy, and other demographic movements obliterated such buffer zones and aided in the spread of disease. ~57 Snow and Lanphear also assert that the sparseness of native populations in North America itself impeded the spread of disease, a point of view which does not account for the speed with which smallpox and other infections spread once they reached a particular area.

Dobyns not only denies that buffer zones existed but maintains that smallpox was only the most virulent of several diseases to devastate New World populations. The others, roughly in descending order of deadliness, included measles, influenza, bubonic plague, diphtheria, typhus, cholera, and scarlet fever. ~58 According to Dobyns, the "frontier of European/Euroamerican settlement in North America was not a zone of interaction between people of European background and vacant land, nor was it a region where initial farm colonization achieved any 'higher' use of the land as measured in human population density. It was actually an

interethnic frontier of biological, social, and economic interchange between Native Americans and Europeans and/or
Euroamericans. ~59 The most important point to Snow and Lanphear, however, is "where one puts the burden of proof in this
argument . . . in any argument of this kind." They maintain that we cannot allow ourselves to be tricked into assuming the burden
of disproving assertions for which there is no evidence." ~60

Given the evidence they have in hand, however, even Snow and Lanphear acknowledge that between two-thirds and 98 percent of
the native peoples inhabiting areas of the northeastern United States died in epidemics between roughly 1600 and 1650. The
population of the Western Abenakis, for example, declined from 12,000 to 250 (98 percent), the Massachusetts (including the
Narragansetts) from 44,000 to 6,400 (86 percent), the Mohawks from 8,100 to 2,000 (75 percent), and the Eastern Abenakis from
13,800 to 3,000 (78 percent). ~61

David Henige, of the University of Wisconsin at Madison, also criticizes Dobyns for a ~remorseless attention to disease to the
exclusion of all else," as the major cause of depopulation among native peoples and asks why he [Dobyns] does not consider the
possible role of such factors as warfare, land exhaustion, climatic pressure, or cultural changes." ~62

It is clear from the preceding debate that the range of population estimates at contact reflects diverse viewpoints on the role of
disease and other factors. William M. Denevan, who edited a collection of articles surveying population estimates for 1492 across
North and South America, ~63 arrived at a consensus figure of 53.9 million native people for the entire hemisphere, including 3.8
million north of Mesoamerica. These figures represent a small decline from his first set of estimates, made in 1976.

Given the number of people killed and the lengthy period during which they have died, the world has probably not again seen such
continuous human misery over such a large area. One good example is the fate of the Aztec capital city Tenochtitlan, which
occupied the site of present-day Mexico City. Tenochtitlan impressed Hernan Cortes as a world-class metropolis when he first
saw it shortly after the year 1500. It is estimated that the Aztec capital had a population of 250,000 people at a time when Rome,
Seville, and Paris had a population of only about 150,000 each. Before he destroyed it, Cortes viewed the splendor of the Aztec
capital and called Tenochtitlan the most beautiful city in the world.

Spanish chronicler Bernal Diaz del Castillo stood atop a great temple in the Aztec capital and described causeways eight paces
wide, teeming with thousands of Aztecs, crossing lakes and channels dotted by convoys of canoes. He said that Spanish soldiers
who had been to Rome or Constantinople told Diaz that for "convenience, regularity and population, they have never seen the like."

~64 The comparisons of life among the Aztecs with what the Spanish knew of Europe acquire some substance as one realizes
that, in 1492, the British Isles held only about 5 million people, while Spain's population has been estimated at 8 million. ~65 Even
nearly three centuries later, at the time of the American Revolution, tlle largest cities along tlle eastern seaboard of the new United
States, -- Boston, New York, and Philadelphia -- had a population of no more than 50,000 people each.

Within a decade of Cortes's first visit, Tenochtitlan was a ruin. Ten years after the Aztec ruler Montezuma had hailed Cortes with
gifts of flowers and gold (and had paid for such hospitality with his life), epidemics of smallpox and other diseases carried by the
conquistadors had killed at least half the Aztecs. One of the Aztec chroniclers who survived w rote: "Almost the whole population
suffered from racking coughs and painful, burning sores." ~66

The plague followed the Spanish conquest as it spread in roughly concentric circles from the islands of Hispaniola and Cuba to the
mainland of present-day Mexico. Bartolome de las Casas, the Roman Catholic priest who questioned Spanish treatment of the
natives for decades, said that when the first visitors found it, Hispaniola was a beehive of people. Within one lifetime, the forests w
ere silent. Within thirty years of Cortes's arrival in Mexico, the native population decreased from about 25 million to roughly 6
million. After Spanish authorities set limits on money wagers in the New World, soldiers in Panama were said to have made bets
with Indian lives instead. When natives were not killed outright by disease, conquerors killed them slowly through slavery. Las
Casas, who arrived in the New World ten years after Columbus, described one form of human servitude, pearl diving: "It is
impossible to continue for long diving into the cold water and holding the breath for minutes at a time . . . sun rise to sun set, day
after day. They die spitting blood . . . looking like sea wolves or monsters of another species." ~62 Other conquistadors
disemboweled native children. According to Las Casas, they cut them to pieces as if dealing with sheep in a slaughterhouse. They
laid bets as to who, with one stroke of a sword, could cut off his head or spill his entrails with a single stroke of the pike. ~68

A century later, entering North America the Puritans often wondered why the lands on which they settled, which appeared so
bountiful otherwise, appeared to have been wiped clean of their original inhabitants. Four years before the Mayflower landed, a
plague of smallpox had swept through Indian villages along the coast of the area the settlers would rename New England. John
Winthrop admired abandoned native cornfields and declared that God had provided the epidemic that killed the people who had
tended them as an act of divine providence: "God," he said, hath hereby cleared our title to this place." ~69 As settlement spread
westward, native people learned to fear the sight of the honeybee. These "English flies" usually colonized areas about a hundred

miles in advance of the frontier, and the first sight of them came to be regarded as a harbinger of death. The virulence of the
plagues from Europe may be difficult to comprehend in our time. Even in Europe, where immunities had developed to many of the
most serious diseases, one in seven people died in typical smallpox epidemics. Half the children born in Europe at the time of
contact never reached the age of fifteen; and life expectancy on both sides of the Atlantic averaged thirty-five years.

Before contact, outside of a few specific areas (such as Mayan cities and Cahokia), population density was not great enough to
devastate the environment generally. Instead, early European observers marveled at the natural bounty of America–of Virginia
sturgeon six to nine feet long, of Mississippi catfish that weighed more than one hundred pounds, of Massachusetts oysters that
grew to nine inches across, as well as lobsters that weighed twenty pounds each. The immigrants gawked at flights of passenger
pigeons that sometimes nearly darkened the sky and speculated that a squirrel could travel from Maine to New Orleans without
touching the ground. Bison ranged as far east as Virginia. George Washington observed a few of them and wondered if they could
be crossbred with European cattle.

Despite the dispute over population size and density before the devastation of European diseases, it is rather widely agreed that
native populations in North America bottomed at about half a million in the early twentieth century (using Mooney's contemporary
figures) and that they have been increasing again since then. The latest figures for the United States, contained in the 1990 census,
indicate that roughly 2 million people list themselves as Native American. Such a measure may not be as precise as it sounds,
however, because the census allows people to categorize themselves racially.

Scholars who assert that Native Americans possessed no more of an environmental ethic than invading Europeans fail to look at
land-use patterns in North America before and after contact with Europe. The advent of widespread pollution, and a social and
political movement to restrain it, is a European import to the Americas. Despite populations that were as dense in some areas as
habitation today, Native Americans as a whole lacked a philosophy that stressed "development" of the earth for profit, although
they did develop resources to sustain their lives and societies. Native societies also lacked the technological drive to transform the
environment in the name of profit, although native people did adapt technology to suit their needs.

A supreme irony of our time is that peoples who have tried to live within the bounds of a natural ethic today face some of the
worst pollution in North America. Almost without exception, these conditions have been imposed on native peoples by the dominant
society. A sense that "this is the time at the end of time" conveys a sense of urgency in contemporary native appeals to save

unspoiled areas of North America from logging, ranching, and mineral extraction. Even as Western technology and resource exploitation spread to the final frontiers of the continent, a rising environmental movement is paying more attention to the ways in which native peoples in the Americas managed their relationships with the environment before industrialization–in a search for answers to contemporary ecological problems.

While some scholars may argue that the idea of Indian as ecologist is simply stereotyping and wishful thinking among present-day environmental advocates, the written and oral histories of many Native American peoples indicate that their cultures evolved over thousands of years largely in symbiosis with the earth that sustained them. Often these customs were incorporated into religious rituals that held the earth to be the sustainer of all things and linked the welfare of the earth to the survival of people who lived upon it.

home