Introduction to Environmental Ethics

by Michael P. Nelson

Introduction

Ethics play an important role in our conversations and decisions about biodiversity. But what exactly are ethics? What does it mean to assert that there is an ethical dimension to a debate, or that ethics should inform our decision-making and our actions? This essay provides a basic framework for understanding ethics and a summary of the major ethical viewpoints on the environment and biodiversity.

What Are Ethics?

People tend to use the term *ethics* in two different ways.

Ethics help us decide how we ought to live. In their most general form, we might say that ethics are the standards we employ (among other factors) to determine our actions. They are *prescriptive* in that they tell us what we should or ought to do and which values we should or ought to hold. They also help us evaluate whether something is good or bad, right or wrong.

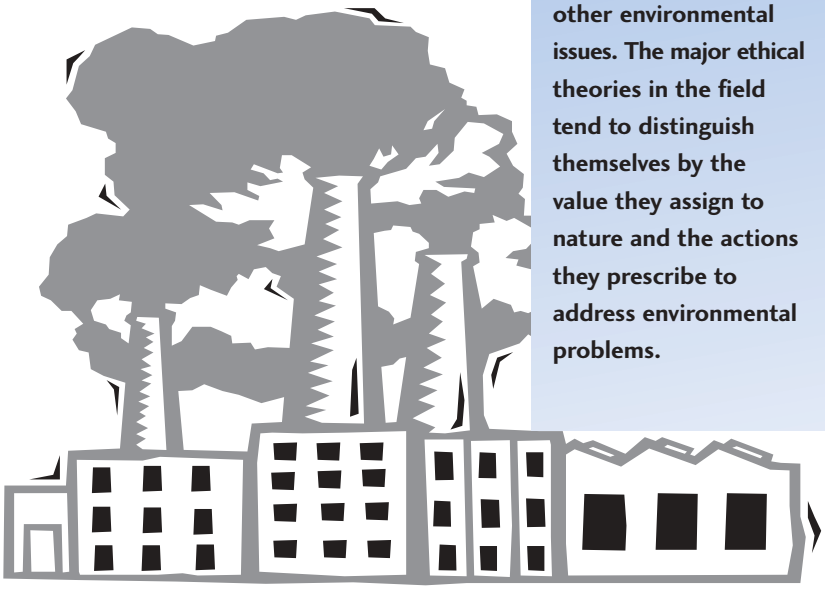
Ethics explain why things are important to us. Ethics are also concerned with how and why we value certain things and what actions properly reflect those values. In this sense, ethics appear more *descriptive*. Just as it is possible for taste to be a neutral and descriptive term—appreciation for a work of art can be a matter of *taste*—ethics can operate the same way. Hence, even though they clearly value nature differently, and therefore possess different environmental ethics, James Watt can be said to have an environmental ethic just as Aldo Leopold had one.

Either way, our ethics are not solely individual or deterministic: they are social constructs. This means that, while the raw capacity to extend moral consideration might be a product of our biology, our actual ethical beliefs are largely shaped by a cultural context and history.[1]

Grounding Ethical Claims

When someone offers an argument for or against protecting a threatened forest or river or plant, chances are that much of his or her argument will sound familiar. Places, species names, economic projections, etc., may all vary, but the logic of the argument will be similar, whether the debate is about beachfront condominium development in South Carolina or natural gas exploration in Wyoming. At a basic level, most of our arguments appeal to ethics: what is the right or wrong thing to do, what type of value do things hold, and why?

In turn, our ethical arguments—including those used in biodiversity debates—are often based on one of a number of established ethical theories. For instance, when someone argues that jobs are more important than environmental protection, he or



KEY POINTS

Ethics offer rules of conduct and ways of assigning value to and assessing the "rightness" of actions and things.

Most biodiversity debates reflect long-standing ethical assumptions and theories. Understanding these ethical grounds for arguments can help biodiversity advocates respond to the ethical underpinnings that inform most people's views on the environment.

The field of environmental ethics developed in response to the unique ethical problems presented by biodiversity loss, pollution, and other environmental issues. The major ethical theories in the field tend to distinguish themselves by the value they assign to nature and the actions they prescribe to address environmental problems.

STEVE MASLOWSKI USFWS

she may be appealing to an ethical structure that goes back to the eighteenth-century English philosopher Jeremy Bentham and his theory of Utilitarianism (see below). Understanding the roots of these theories helps us to understand where people are coming from when they say that an action is good or bad, right or wrong. It also helps us understand how to counter their perspective, if necessary. What follows are thumbnail sketches of some of the leading Western ethical theories that continue to shape and define people's views on the environment today.

Utilitarianism

In its most basic form, utilitarianism suggests that we ought to judge an action, or decide upon a course of action, on the basis of the utility, happiness, or pleasure that action produces. The phrase "the greatest good for the greatest number" is often associated with this theory. For example, a developer who justifies a new sprawling residential development on the basis that it will provide housing for many families or increase the local tax base is appealing to a utilitarian theory.

Responses: Utilitarian justifications must often confront certain problems. First are problems of measurement: How do we assign values to the possible outcomes of our actions? Do all pleasures count equally? Is all happiness identical? Second, are problems of consequence: How do we know what the consequences of our actions might be? Should we justify horrific practices—such as slavery, child labor, or the destruction of the Amazon rainforest—because such practices might be useful or produce the most overall utility?

Rights Theory

Often seen as a reaction to utilitarianism, these ethical theories claim that we should adhere to certain rules or guiding principles that define an action as good or right when determining whether that action is right or wrong, irrespective of its consequences. For example, if someone argues that people should not be enslaved regardless of the benefits of slavery, they are basing their argument on the principle that people have a basic right to freedom that applies in all circumstances and overrides all consequences. Some have argued that the Endangered Species Act grants such basic rights (the right to continue to exist) to all species quite apart from their economic value.

Responses: Rights theorists must respond to two important questions. First, how do we sort out conflicts among or between principles or rights?[2] Second, how do we ultimately justify or establish those duties or rights that we decide are fundamental?

Divine Command/Natural Law

Divine command theory suggests that ethical precepts are the product of divine or revealed dictate (i.e., ethical rules are dictated from above by God or Krishna or Allah).[3] For example, we may believe that our stewardship of the land (or even our malicious impact upon it) is the morally correct course of action because it is what God intended; or we may believe it is morally right because humans are by nature stewards, caretakers, and nurturers and that the land is a proper object of this natural caretaking role. A variant of this theory—natural law—suggests that ethical precepts are a result of uncovering and then following the dictates of nature: in other words, that which is moral is often seen as that which is natural.

Responses: Adherents of these theories must be prepared to consider several questions. First, can we accept certain presuppositions in order to believe this theory? For instance, do we accept the existence of a divine being to give us instructions or a clear idea of that which is natural? Second, how do we know what is and what is not the will of God or what is natural? Who's to say, and how do we know we have it

Ethical Theories in Practice

Utilitarianism

"Our mission, as set forth by law, is to achieve quality land management under the sustainable multiple-use management concept to meet the diverse needs of people."

USDA Forest Service Mission Statement (from the Forest Service Web site: www.fs.fed.us/fsjobs/forestservice /mission.html)

The Forest Service's "Land of Many Uses" motto has often been interpreted along strictly utilitarian lines, emphasizing land management priorities that principally serve the economic and recreational needs of people.

Rights Theory

"To live free from harm, and the fear of harm, by human beings is the fundamental right of all sentient beings." Article One, the Universal Charter of the Rights of Other Species, by Lawrence Pope, the Charter Project/the Australian and New Zealand Federation of Animal Societies (www.melbourne.net/animals_australia /specials/charter.html).

Divine Law

"Almighty God envisioned a world of beauty and harmony, and he created it, making every part an expression of his freedom, wisdom, and love . . . If we examine carefully the social and environmental crisis which the world community is facing, we must conclude that we are still betraying the mandate God has given us: to be stewards called to collaborate with God in watching over creation in holiness and wisdom."

From "Joint Declaration on Articulating a Code of Environmental Ethics," issued by Pope John Paul II and Ecumenical Patriarch Bartholomew of Constantinople, on June 10, 2002.

Natural Law

"Made from the Best Stuff on Earth' Snapple's array of tea and fruit beverages are made from all natural ingredients." —Cadbury Schweppes, Inc.

At the supermarket you're likely to find hundreds of products that tout their "natural ingredients." This common marketing strategy is based on natural law theory: that actions and things that are derived from or found in "nature" are by definition superior to those that are not.

Virtue Theory

"Every person has a role to play in saving our planet. Action begins with a personal commitment. One person's commitment is the first step toward saving the planet for future generations, towards a living planet. You really can make a difference." World Wildlife Fund —New Zealand Web site (www.wwf.org.nz)

Moral Sentiments

"Meat is Murder," Morrissey, former lead singer of the British rock band, The Smiths.

right? Third, how do we decide which messages or dictates, among many (some even contradictory) possible, are the correct ones to adhere to? Finally, does such an approach threaten to become less a matter of ethics, than one of merely following rules?

Virtue Theory

Some people hold to the belief that in general good people will perform good actions (as an extension of their goodness and perhaps as a way of attaining their own true happiness) and that they will help promote the well-being of all. Therefore, we need to maximize those qualities within people that make them virtuous. Although this appeal to ethics is not as popular as the others in environmental ethical discourse, it does occur. We conservationists often speak of nurturing the qualities or virtues of humility and respect within humans, and especially as humans interact with nature, with the assumption that by and large the humble and respectful person will act morally.

* Environmental issues are inherently and intractably philosophical and ethical issues.

Responses: Clearly such a theory assumes a great deal: It assumes the ability of humans to foster various virtues; it assumes our ability to foster the correct ones; it assumes our strength of will to remain virtuous in tough spots; and it assumes that the actions of the virtuous person will in fact be environmentally ethical.

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Moral Theory

This theory holds that we are ethical creatures because we are both rational and emotional creatures. If we reason that something commands our moral recognition, our moral sentiments (sentiments like compassion, sympathy, empathy) are prompted and spur our willingness to value that something and act on its behalf. Environmental philosopher J. Baird Callicott, for instance, has argued that it is such a theory of morality that underlies the Land Ethic of Aldo Leopold.[4] We see this theory when Leopold characterizes ethics as a product of both conscience and feeling:

> Obligations have no meaning without conscience, and the problem we face is the extension of the social conscience from people to land. No important change in ethics was ever accomplished without an internal change in our intellectual emphasis, loyalties, affections, and convictions.[5]

Responses: Theories of moral sentiments can be criticized for being overly subjective or relativistic and hard to pin down, for lacking prescriptive force since they seem at first glance only to describe the moral system at work, and for reducing ethics to a matter of biological determinism.[6]

Environmental Ethics

Environmental ethics is a new area of study within the larger and older field of ethics. In the early 1970s, a small cadre of philosophers began to realize that underlying our concern for and discussions about land use, biodiversity loss, and pollution were very real, interesting, and new ethical questions. We also began to see that complex philosophical notions lay at the core of our disagreements about what we should do with land, how we should value other species, and which policies we should enact to mitigate pollution. We quickly realized that environmental issues are

inherently and intractably philosophical and ethical issues.

Those outside of philosophy soon recognized how critical the work of environmental ethics and environmental ethicists was to natural resource issues. Courses in environmental ethics were promptly required for natural resource majors in college, and environmental ethicists were granted joint appointments in humanities and natural resources departments; we were asked to sit on natural resource advisory boards and editorial boards of natural resource journals, invited to participate in and join scientifically oriented organizations and conferences, and asked to contribute articles to journals and chapters to textbooks in conservation biology, forestry, and other natural resource areas.

As the subdiscipline has evolved over the past three decades, environmental philosophers have separated into a number of distinct camps. Such camps distinguish themselves most profoundly by the value that they assume nature possesses and hence by the method or standard by which they believe we ought to go about addressing our environmental woes.

Anthropocentrism

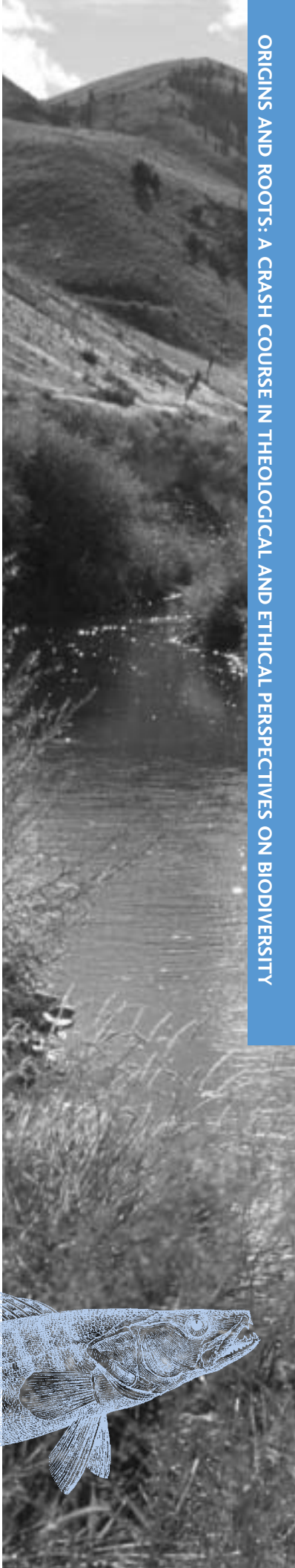
Anthropocentrists are those who believe that environmental policies ought to be motivated and justified by their effect upon humans.[7] Of course, these philosophers often recognize both the full range of human values and the fact that human well-being is intimately entwined with the well-being of at least certain parts of the nonhuman world. For them, the nonhuman world is valuable only insofar as it affects humans. For the anthropocentrist, only humans possess intrinsic value; all else is valuable only for its utility for people. Anthropocentrists, then, agree with Immanuel Kant, who argues that "all duties towards animals, towards immaterial beings and towards inanimate objects are aimed indirectly at our duties towards mankind," or John Passmore, who claims that, "the supposition that anything but a human being has 'rights' is…quite untenable." For the anthropocentrist, we ought to be concerned about the loss of biodiversity and act to mitigate it only because such loss does or might negatively affect human beings. Plant biodiversity in the rainforest is valuable, they might argue, because it might provide cures for certain human diseases.

Zoocentrism

Zoocentrists are environmental philosophers who believe that, in addition to humans, certain nonhuman animals possess intrinsic value and garner direct moral standing.[8] These animal-centered, or zoocentric, ethicists argue that for all the reasons that we consider humans as intrinsically valuable, logical consistency dictates that we ought also to value certain nonhumans as intrinsically valuable, given only that these nonhuman animals possess the same trait that makes humans morally relevant. For the zoocentrist, humans and certain nonhuman animals possess intrinsic value; all else maintains only instrumental value. Hence, the zoocentrist is concerned about the loss of biodiversity because of the actual and potential negative impact that it has on both humans and certain nonhuman animals. For instance, they would hold that rainforest biodiversity preservation is important because it might provide cures for diseases in both human and certain nonhuman animals.

Biocentrism

Some philosophers have argued that the only way to avoid logical moral inconsistency is to include within the moral community all individual living things.[9] These life-centered, or biocentric, thinkers argue for the direct moral standing and intrinsic value of all individual living things, leaving only nonindividual living things as possessive of merely instrumental value. Albert Schweitzer, perhaps the most popularly recognized biocentrist, summarizes the position thus:



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> Ethics thus consists in this, that I experience the necessity of practicing the same reverence for life toward all with a will-to-live, as toward my own. Therein I have already the needed fundamental principle of morality. It is good to maintain and cherish life; it is *evil* to destroy and check life.[10]

Hence for the biocentrist, concern for, or policy regarding, biodiversity degradation is motivated and justified by the impact that it might have on *all* individual living things: we ought to be concerned about biodiversity loss because of the effect it has on humans, fish, and trees.

Biocentrism has been associated with Deep Ecology—a popular philosophy that sees humanity as a part of nature, rather than apart from or superior to it. Deep Ecology is also related to Universalism and Ethical Holism (discussed below).

Universalism

Some philosophers have gone so far as to argue that the only sensible and logically consistent moral community would be inclusive of all individual things, whether living or not. Those advocating this "universal consideration" suggest that we live in a morally rich world where everything is imbued with intrinsic value and direct moral standing. As Thomas Birch argues,

> Universal consideration—giving attention to others of all sorts, with the goal of ascertaining what, if any, direct ethical obligations arise from relating with them—should be adopted as one of the central constitutive principles of practical reasonableness.[11]

For these philosophers, our reaction to biodiversity loss or policy proposals attempting to curb it ought to be motivated not only by the impact that such loss has on all living things, but also by the impact that such loss has on even nonliving things such as mountains or rocks.

Ethical Holism

Some philosophers, including deep ecologists, have reacted against the atomism or individualism of all the above approaches. They have argued that the biosphere as a whole, as well as the systems that constitute it, deserve moral consideration, based on holistic understandings of natural systems derived from the science of ecology.[12] Although their approaches and arguments vary, this ethical holism refocuses moral concern on maintenance of the health of biotic communities, species, ecosystems, and even the Earth as a whole (if one were to extend this idea as far as James Lovelock's Gaia Hypothesis). Aldo Leopold expresses the most recognized version of ethical holism when he asserts that, "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."[13] Thus, biodiversity loss is a matter of concern because the health of species as well as specimens, watersheds as well as rivers, and forest ecosystems as well as individual trees is negatively affected.[14]

Ecofeminism

These philosophical discussions have spawned a variety of interesting and exciting areas of specialty. For example, "ecofeminism," as defined by leading ecofeminist scholar Val Plumwood, "is essentially a response to a set of key problems thrown up by the two great social currents of the later part of this century—feminism and the environmental movement—and addresses a number of shared problems."[15] Ecofeminists have developed insightful analogies between the historical oppression of nature by humans, and that of women by men. They have suggested that Western environmental problems should be, perhaps even that they can only be, understood in light of a larger historical attempt to bifurcate the world in such a way that women and nature are linked with what is morally degraded or downgraded, and that men and the non-natural are conceptually tied to the morally relevant or superior.

Environmental Justice

Other thinkers have focused on how various forms of environmental degradation, and even various proposals to remedy this degradation, play out in terms of justice between and within societies. Critiquing such concepts as Gross National Product (GNP) as a measure of progress, capitalism and free market economics, technological fixes to environmental problems, the imposition of wilderness areas and parks on local populaces, and economic development, those interested in issues of environmental justice (or ecojustice) have dramatically illustrated the negative global result of our current environmental problems, and especially how the costs of environmentally negligent behavior are unfairly borne by some. As philosopher Peter Wenz puts it, "questions about justice arise concerning those things that are, or are perceived to be, in short supply relative to the demand for them." Given that the Earth's resources are finite, and given that we are all concerned with getting our fair share of those resources, environmental issues and ethics are inherently a matter of justice.[16]

Notes

[1] One must be careful not to assume that this means that ethics are relativistic; that conclusion does not necessarily follow from the premise that ethics are social constructs. The value of the dollar is also a social construct, but it is very real and very objective nonetheless.

[2] On this see, "Rights and Responsibilities: What Obligations Do We Owe to the Natural World (and Each Other)," at page [#].

[3] Some might suggest that raw appeals to the "laws of nature" might also fit within this category.

[4] See especially J. Baird Callicott's work in *In Defense of the Land Ethic and Beyond the Land Ethic* (Albany, NY: State University of New York Press, 1989 and 1999, respectively).

[5] Aldo Leopold, *A Sand County Almanac: With Essays on Conservation from Round River* (New York, NY: Ballantine Books, 1966), 246.

[6] Many of these concerns as they apply to the land ethic have been addressed by Callicott in his essay, "Can a Theory of Moral Sentiments Support a Genuinely Normative Environmental Ethic?" in *Beyond the Land Ethic: More Essays in Environmental Philosophy* (Albany, NY: State University of New York Press, 1999), 99-115.

[7] See William Baxter, *People or Penguins: The Case for Optimal Pollution* (New York: Columbia University Press, 1974); John Passmore, *Man's Responsibility for Nature*, 2nd ed. (London, UK: Duckworth, 1980); and Bryan Norton, *Why Preserve Natural Variety?* (Princeton, NJ: Princeton University Press, 1988).

[8] See Peter Singer, Animal Liberation, 2nd ed. (New York, NY: Random House, 1990); and Tom Regan, *The Case for Animal Rights* (Berkeley, CA: University of California Press, 1983).

[9] See Kenneth Goodpaster, "On Being Morally Considerable," *Journal of Philosophy* 75 (1978): 308-25; Robin Attfield, *The Ethics of Environmental Concern*, 2nd ed. (Athens, GA: University of Georgia Press, 1991); and Paul W. Taylor, *Respect for Nature* (Princeton, NJ: Princeton University Press, 1986).

[10] See Albert Schweitzer, *Civilization and Ethics, Part II, Philosophy of Civilization*, trans. John Naish (London, UK: A & C Black, 1923), 254.

[11] See Thomas Birch, "Moral Considerability and Universal Consideration," *Environmental Ethics* 15, no. 4 (Winter 1993): 313.

[12] See the works of J. Baird Callicott, mentioned above, and Arne Naess, *Ecology, Community and Lifestyle* (Cambridge, UK: Cambridge University Press, 1989); George Sessions and Bill Devall, *Deep Ecology: Living as if Nature Mattered* (Layton, UT: Gibbs-Smith, 1985); and Warwick Fox, *Toward a Transpersonal Ecology*, 2nd . (Albany, NY: State University of New York Press, 1995).

[13] Aldo Leopold, A Sand County Almanac: With Essays on Conservation from Round River (New York, NY: Ballantine Books, 1966).

[14] In fact, for the ecocentrists, biodiversity itself is more than just a collection of various individual living things; they construe it in a far more holistic fashion than any of the other more individualistic environmental ethical theorists do.

[15] See Val Plumwood, *Feminism and the Mastery of Nature* (London, UK: Routledge, 1993); and Karen Warren, "The Power and the Promise of Ecological Feminism," *Environmental Ethics* 12, no. 2 (1990): 125-46.

[16] See Peter Wenz, *Environmental Justice* (Albany, NY: State University of New York Press, 1988); Ramachandra Guha, "Radical American Environmentalism and Wilderness Preservation: A Third World Critique," *Environmental Ethics* 11, no. 1 (1989): 71-83; and Vandana Shiva, *Staying Alive: Women, Ecology, and Development* (London, UK: Zed Books, 1989).

STEVE TUREK

2,000 Years of Western Ideas About Nature in Less than 2,000 Words[1]

by Michael Nelson

GERALD H. EMMERICH JR.

People do not do or believe things "just because." Our ethical sensibilities, our ideas, and our assumptions about reality flow from the past. This chart is an attempt to present a rough overview of the sources of the conceptual and ethical ideas embodied in Western culture. In all fairness, the reader should be forewarned that intellectual history is a complex web that, by its very nature, resists this sort of reduction. Hence, any such presentation will, of necessity, be incomplete. The point is, however, to see and be able to make sense of the origins of our ideas about humans, nature, and what constitutes an appropriate human/nature relationship. Such awareness provides us with an understanding of one another, an important step toward working together.

Ethical/Metaphysical/ Spiritual Belief	Origin of Belief	What Does it Mean?	Implications
Nature is messy and inefficient.	Ancient Greeks (6th century BC), David Hume (1711-1776)	Purity of form is an expression of that which is good .	Nature ought to be "neatened up" or ordered by humans
Nature is knowable and quantifiable; humans can control it (manifests itself in Atomism, Materialism, and Mechanism).	Ancient Greeks (6th century BC), John Locke (1632-1704), Francis Bacon (1561-1626), certain views of science	We know nature by taking it apart, by knowing it we gain control of it, by gaining control of it we increase our mastery of it.	We should learn about nature in order to control it; the whole of nature is nothing but the sum of its parts—no more, no less.
Dualism	Pythagoras (580-500 BC) who influenced Socrates (470-399 BC) and Plato (427-347 BC), Christianity, René Descartes (1596-1650), most contemporary Westerners.	The mind and body are distinct, at least for humans (sometimes seen as a reaction to Atomism, as a way to save human uniqueness).	Humans are separate from and special with regard to nature. The real nature of humans is otherworldly; all else is of this world and the bodily realm.
Nature is suspect, dangerous, the realm of Satan.	Puritanism, Jonathan Edwards (1703-1758), Cotton Mather (1584-1652))	Untamed nature is Satan's foothold, is not only without value, but is of disvalue, is bad, even evil; those humans associated with the world of nature (Pagans, American Indians) are also bad.	The role of humans is to rid the world of room for the devil as well as everything associated with this realm, transform the "natural" into the "artificial," prepare the world for God, fulfill its proper mission.

Application to Biodiversity	Quotation
The results of the straightened streams, monoculture pine plantations, and filled-in wetlands generally have a negative impact on biodiversity.	"Nature hates calculators." —*Ralph Waldo Emerson*
Although it's important to learn about nature/biodiversity, it's important only insofar as it helps us control it.	"Knowing the nature and behavior of fire, water, air, stars, the heavens, and all the other bodies which surround us…we can employ these entities for all the purposes for which they are suited, and so make ourselves masters and possessors of nature." —*René Descartes*
Sometimes employed as a justification for anthropocentrism, it explains and sanctions our indifference to the biologically diverse world around us.	"One can no more ask if the body and the soul are one than if the wax and the impression it receives are one." —*Aristotle* "It is certain that I (that is, my mind, by which I am what I am) is entirely and truly distinct from my body, and may exist without it." —*René Descartes*
Biodiversity is clearly associated with the "natural"; either it's therefore bad, or it's of little importance.	"Nature red in tooth and claw" —*Tennyson* "Nature is a hanging judge." —*Anonymous*

Ethical/Metaphysical/ Spiritual Belief	Origin of Belief	What Does it Mean?	Implications
Dominion	Genesis, Francis Bacon (1561-1626); later becomes cornerstone of John Calvin (1509-1564) and Calvinism.	Humans are to have dominion over nature; the human/nature relationship is despotic. This results in the idea that we work to produce and to consume in order to confirm our salvation.	Humans are not only separate and special, but are commanded to "dominate and subdue" nature, to turn the natural into the civilized. We produce and consume; therefore we are good.
Nature and humans are a miracle called Creation.	Genesis, John Muir (1838-1914)	We are all meant to be here and we are valued by God.	Both humans and nature are spiritually significant and possess value; both are the handiwork of God
Stewardship	Reinterpretation of Genesis I	Humans are properly viewed as stewards or caretakers of nature.	The human/nature relationship ought to be a caretaker relationship, with humans in charge but for the good of the Earth.
Natural Law/Divine Command Theory	Aristotle (384-322 BC), early thinkers in various religious traditions	Right and wrong is dictated or determined by some higher entity, either nature itself or some divine being.	That which is natural is that which is right or good, or that which God commands is that which is good; both can be discovered.
Rights Theory (one of the dominant contemporary ethical theories)	Immanuel Kant (1724-1804)	Humans have certain fundamental rights (e.g., to continue to exist, to be free, etc.); all else is only a means to secure human ends.	Humans are valuable and distinct as ends in and of themselves; nature is valuable only insofar as it provides for the fulfillment of basic human rights (whatever they might be).
Utilitarianism, which manifests itself as Capitalism and Neo-Classical economics (one of the dominant contemporary ethical theories).	Jeremy Bentham (1748-1832), John Stuart Mill (1806-1873), Adam Smith (1723-1790)	Nature is valuable only insofar as it provides for the utility or happiness or well-being of human beings. The market determines what is of value or has utility.	Nature has value insofar as it secures the well-being of human ends. Decision making is driven only by market value—if it can't pay for itself, it can't be saved.

Application to Biodiversity	Quotation
Biodiversity loss might be bad if it negatively affects humans, but it might also be seen as good because it's an indication that humans are successfully dominating and subduing nature. Idle land is bad land (John Muir's father, Daniel Muir—a Calvinist minister—believed this).	"Let us make man in our own image…and let them be masters of the fish of the sea, the birds of the heaven, the cattle," etc. "Be fruitful and multiply, fill the earth and conquer it. Be masters of the fish of the sea", etc. —*Genesis I* "Nature's secrets must be tortured out of her." —*Francis Bacon*
It is wrong to undo God's handiwork by facilitating the loss of biodiversity.	"And God said, 'Let the earth bring forth vegetation, plants yielding seed, and fruit trees bearing fruit in which is their seed, each according to its kind,'…'Let the waters bring forth swarms of living creatures, and let the birds fly above the earth'…'Let the earth bring forth living creatures according to their kind'…And it was so…And God saw that it was good." —*Genesis* "God himself seems to be always doing his best here, working like a man in a glow of enthusiasm." —*John Muir*
Humans have a moral obligation to tend to the preservation of biodiversity as a function of their role as stewards.	"The Lord God took the man and put him in the garden of Eden to till it and keep it." —*Genesis*
Biodiversity is important or good if we conclude that it is natural or if God says it is; biodiversity loss is a matter of indifference if we conclude that it is natural or if God says it is unimportant.	"If one way be better than another, that you may be sure is Nature's way." —*Aristotle* "Never does Nature say one thing and Wisdom another." —*Juvenal* "Deviation from Nature is deviation from happiness." —*Samuel Johnson*
Biodiversity is valuable only insofar as it provides for the fulfillment of certain human rights; it is indirectly valuable at best.	An action is right if it "signifies consistency with the will of God." —*William Paley* "Act only on that maxim whereby thou canst at the same time will that it should become universal law." —*Immanuel Kant* "Safeguarding the rights of others is the most noble and beautiful end of a human being." —*Kahlil Gibran*
Biodiversity is valuable only insofar as it secures or provides for the well-being of humans, and is economically profitable. Protecting biodiversity is purely and solely a matter of cost-benefit analysis.	"The principle of utility approves or disapproves of every action, whereby it tends to produce benefit, advantage, pleasure, good, or happiness or to prevent the happening of mischief, pain, evil, or unhappiness to the party whose interest is considered." —*Jeremy Bentham* "Nature is not a temple but a workshop in which man is the laborer." —*Ivan Turgenev*

Ethical/Metaphysical/ Spiritual Belief	Origin of Belief	What Does it Mean?	Implications
Wise-Use Conservation (not to be confused with the current Wise-Use movement)	Adaptation of utilitarianism, Gifford Pinchot (1865-1946)	Nature provides for human well-being.	Nature is valuable only insofar as it provides for human well-being, but should be managed to maintain a reliable supply of natural goods.
Cornucopia	Julian Simon (1932-1998)	Nature is unlimited in its ability to provide resources and absorb impact.	Humans can do whatever they please with regard to nature since nature is ultimately forgiving.
Holism	Evolutionary theory (Charles Darwin [1809-1882]), ecology, new physics quantum theory, relativity theory (Albert Einstein [1879-1955]) interpreted by Aldo Leopold (1887-1948), J. Baird Callicott, Fritjof Capra, Deep Ecologists, Paul Shepard (contemporary)	The whole is more than the sum of its parts; relationships among parts also have a fundamental reality, ecological wholes (species, ecosystems, biotic communities, watersheds) exist and have moral value.	The world, parts of the world, and parts of those parts, are systemically related and integrated with one another; thus ethical systems cannot merely account for individuals; human well- being is provided for by tending to the well-being of the systems of which they are a part and upon which they depend.
Gaia Hypothesis	James Lovelock, Lynn Margulis (contemporary)	The earth itself is, or is like, a living organism in that it has the ability to sustain itself amidst external change, absorb and mitigate impact, and secure its own health.	This challenges our concept of "individual living thing"; ecological systems are crucial to the functioning of the larger Earth system; parts of the whole are ultimately important.
Ecofeminism	Val Plumwood, Karen Warren, Rosemary R. Ruether (contemporary)	A strong parallel exists between the historical oppression of nature by humans and historical oppression of women by men; instances of oppression are manifestations of a similar conceptualization and the logic of domination.	To the extent that environmental problems are problems of humans dominating nature, they are conceptually linked to other oppressive structures. The focus should be on oppressive conceptual structures in general, not merely particular representations of them.

Application to Biodiversity	Quotation
Biodiversity is good as a source of natural resources, medicine, recreation, etc.	"The use of natural resources for the greatest good of the greatest number for the longest time." "There are just two things on this material earth—people and natural resources." —*Gifford Pinchot*
There seems little need to be worried about the human impact on biodiversity.	"Constraints are set by political and economic, not ecological or physical, facts." —*William W. Murdoch* "The major constraint upon the human capacity to enjoy unlimited minerals, energy, and other raw materials…is knowledge. And the source of knowledge is the human mind…this is why an increase of human beings…constitutes a crucial addition to the stock of natural resources." —*Julian Simon*
Biodiversity is seen as more than merely collections of individual specimens or a variety of species types; it is far more inclusive, thus biodiversity preservation is important, even intrinsically valuable.	"What makes it so hard to organize the environment sensibly is that everything we touch is hooked up to everything else." —*Isaac Asimov* "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." —*Aldo Leopold*
Preservation of biodiversity is ultimately important, for t provides for the mechanism for global health, which secures the health of everything that is a part of Gaia.	"[The Gaia Hypothesis holds that] the nonliving and the living represent a self-regulating system that keeps itself in a constant state." —*James Lovelock* "Earth is a single huge organism intentionally creating an optimum environment for itself." —*Richard Kerr*
Loss of biodiversity is but one example and manifestation of an inappropriate conceptualization of a relationship (the human/nature relationship in this case). Preservation of biodiversity cannot be seen in isolation from other oppressive systems.	"We cannot criticize the hierarchy of male over female without ultimately criticizing and overcoming the hierarchy of human over nature" —*Rosemary R. Ruether* "Does the wanton subjugation of nature by our species have a causal connection with the wanton subjugation of women by men?" —*David Quammen*

[1] See Joy A. Palmer, ed., *Fifty Key Thinkers on the Environment* (London, UK: Routledge, 2001); this is an excellent reference resource for the ideas and publications of many who have historically shaped environmental thought.