

ASSIGNING A VALUE TO BIOLOGICAL DIVERSITY: ETHICS AND AESTHETICS

Introduction

When you hear the word “value” used to justify conservation, it is often associated with economic or financial value. As we have seen over the past couple of lectures, there are some serious concerns about whether applying economic approaches to valuing biodiversity are likely to be useful in helping to conserve biodiversity.¹ The difficulties with an economic approach to valuation are often attributed to its focus on what’s of value to humans. It’s important to understand, however, that the anthropocentric focus does *not* mean that only humans are valuable. It means that only humans do the valuing. “Deep ecology” and related approaches would argue that values exist independently of humans and that those values deserve respect.²

Broadly speaking there are three reasons why we might place a value on biodiversity:

1. We might need it. — Values associated with use.
2. We like it. — Values associated with pleasure, appreciation, or aesthetics.
3. We think we ought to. — Values associated with ethics or morality.

We’ve talked a lot about the ways in which we derive benefit from biological diversity — food, feed, fiber, and pharmaceuticals. These are *use* values. What we haven’t talked about, or haven’t talked about much are values that derive from aesthetics or morality. We discussed methods of trying to quantify non-use values when we talked about economic approaches to estimating “willingness to pay” or “willingness to accept”. Today I’m going to focus on a different approach to understanding what non-use values are, i.e. we’re going to have a very short course in ethics, and I’ll describe a few of the major strains in ethics that emerge from the history of western philosophy. It may feel a little uncomfortable introducing ethical ideas into a science course, but as van Houtan [5] points out,

¹A cynic might well conclude that the discussion we’ve just completed is evidence that it probably isn’t worth it to try to conserve biodiversity. I’m not a cynic, or I wouldn’t be teaching this course.

²This section draws heavily from Chapter 4 of [2]

Conservation, even if conceived on scientific grounds, is a framework for a specific “right” outcome. Protecting species, designing nature preserves, restoring degraded ecosystems, promoting sustainable use — these are thought of as “good” undertakings....

“Right” and “good” are ethical concepts. An underlying theme throughout this course has been that we have to determine what outcomes are desirable. Now I want to explore whether we can argue that certain outcomes are “right” or “good”, not merely desirable.

Intrinsic vs. instrumental value

One of the concepts conservationists often try to use to indicate the limitations of economic approaches to valuation is to distinguish between things that have intrinsic value and those that have instrumental value.

- Something is said to have intrinsic value if it is good “in and of itself,” i.e., not merely as a means for acquiring something else.

Happiness might be an example of an intrinsic value, because being happy is good just because it’s good to be happy, not because being happy leads to anything else.

- Something is said to have instrumental value if it is good because it provides the means for acquiring something else of value.

Having a net worth of a million dollars is an instrumental value. Having those assets is good only to the extent that you can use them to get something else — like happiness.

Biodiversity, those who argue in this vein would claim, is intrinsically valuable. Attempts to quantify this intrinsic value, seem wrongheaded. How can you put a price on the existence of a species or an ecosystem if it has its own value independent of humans?

Perhaps if we all agreed about the source of intrinsic value in nature, arguing that biodiversity is intrinsically valuable would be compelling.³ Things that are intrinsically valuable seem to be of virtually infinite value, so it is worth almost any price to save them. Unfortunately, I doubt that we’ll ever agree on the source of intrinsic value in nature. To see why, let’s take a brief tour through some different ethical theories.

³Although you do have to wonder whether we would genuinely believe that biodiversity is *infinitely* valuable. Certainly I think we’d all agree that it is extremely valuable, but would any of us claim that it is so valuable that preventing loss of biodiversity is more important than anything else?

Consequentialist vs. non-consequentialist theories of ethics

There are two broad categories of ethical theories concerning the rightness or wrongness of actions: consequentialist and non-consequentialist.

- A consequentialist theory judges the rightness or wrongness of an action based on the consequences that action has. The most familiar example would be utilitarianism — “that action is best that produces the greatest good for the greatest number” (Jeremy Bentham).
 - Over what “ethical community” are the consequences to be measured? Does damage to trees count as much as damage to human beings?
 - * John Stuart Mill — “Socrates dissatisfied should have more moral weight than a pig satisfied.”
 - The criterion might be satisfied by an action that causes great harm to a small number of people while giving a small benefit to a great number.
 - Biodiversity implication — Biodiversity has instrumental value, because it can contribute to human welfare, but it has no intrinsic value.
- A non-consequentialist theory of value judges the rightness or wrongness of an action based on properties intrinsic to the action, not on its consequences.
 - Libertarianism — People should be free to do as they like as long as they respect the freedom of others to do the same.
 - * Biodiversity implication — Biodiversity has instrumental value, and only to the extent that it can contribute to the expression of individual freedom. It might be possible to develop a libertarian theory that included the rights of non-human organisms to be “free”, but (a) I’m not aware that it’s been done⁴ and (b) I think it would be very difficult to do.⁵
 - Contractarianism — No policy that causes uncompensated harm to anyone is permitted (Pareto safety).

⁴Of course, I’m an amateur philosopher at best, so me being unaware of a philosophical theory is weak evidence of its non-existence.

⁵Feel free to ask me why, if you’re curious about my reasons.

- * Biodiversity implication— Depending on how broadly the term “anyone” is defined⁶ biodiversity might or might not have intrinsic value. In a widely influential version of contractarianism due to John Rawls, it is very difficult to imagine how biodiversity could have intrinsic value.⁷ Here there have been philosophers, notably “deep ecologists” and those promoting animal rights who have attempted to extend ethical theories that fall broadly within this realm to non-human organisms, or at least to animals. More recently, Martha Nussbaum has developed a contractarian approach to ethics that is broader than the one Rawls proposed.⁸ While Nussbaum develops her ideas in ways that allow the contractual approach to be applied to non-humans, that extension involves something like “rights” for individual animals, not for species and certainly not for biodiversity.⁹

In any case it should be clear from this brief discussion that although appeals to intrinsic value sound good and make us feel good, they are very difficult to justify philosophically.

Instrumental value *versus* use value

We’ve seen that using economic approaches to placing a value on biological diversity pose great challenges, and we’ve seen that an important part of using those approaches must be incorporating non-use values into the economic framework. We’ve just finished a very brief review of philosophical approaches to ethics, and I’ve already suggested that under both consequentialist and some non-consequentialist views biodiversity seems to have only instrumental value. Now it’s vital to remember that *instrumental* value is not the same thing as *use* value.

- *Use* values are those derived either from using a resource, e.g., the commercial value of lumber extracted from a forest, or from the costs we incur from failing to protect a

⁶Does it include only humans, for example?

⁷Rawls’ approach is based on the idea that just outcomes are those to which any of the participants would agree if they didn’t know their role in society. It is clearly focused on determining just outcomes within human society and considers other parts of the world, if at all, only to the extent that those other parts of the world influence outcomes that affect human beings.

⁸See, for example: Nussbaum. M. C. 2006. *Frontiers of Justice: Disability, Nationality, Species Membership*. Belknap Press of Harvard University Press, Cambridge, MA.

⁹I should mention that Nussbaum’s approach does, to some extent, involve something like the rights of individual animals to be free, but it develops those rights in the context of a contractarian ethical system, not a libertarian one.

resource, e.g., the cost of levees and dams used to control river flooding when floodplain wetlands are converted to residential or industrial use.

- *Non-use* values include those associated with pleasure or appreciation, i.e., aesthetic values, and those associated with obligation or duty, i.e., ethical values.

It is therefore not problematic for an adherent of *any* ethical system to incorporate non-use values of biodiversity into decisions about what is right or just, so long as the non-use values concerned are aesthetic values. It's interesting to ask, though, whether there is some sense in which we have a duty, i.e., an ethical or moral obligation, to conserve biodiversity (or protect the biological integrity of a system or ensure the ecological sustainability of our use of a system and its resources).¹⁰

Problems for an environmental ethic

So the question becomes: Is there a reasonable basis on which to argue that we have an ethical obligation to promote conservation of biodiversity? The question arises because values that reflect ethical obligations are more likely to command adherence than those that reflect taste or preference. In an effort to persuade others that conservation efforts are worthwhile, being able to show them that those efforts are required to fulfill certain ethical observations will carry a lot of weight.

There are, however, several problems facing the development of a conservation ethic: the problem of holism, the problem of “natural”, and the problem of deciding.

The problem of holism

Sober [4] points out one particularly important distinction to keep in mind: Often the things we'd like an environmental ethic to place a value on are whole species, communities, ecosystems, or landscapes not the individual organisms of which they are composed.¹¹

- Consider the question of whether to control the size of deer populations in reserves maintained by The Nature Conservancy. Many would agree that such management is needed to conserve the species and communities within those reserves.

¹⁰I'm going to use the phrase “conserve biodiversity” throughout the rest of these notes. I don't mean to imply that conserving biodiversity is the *only* thing we might have an ethical obligation to do towards the environment. I just don't want to repeat myself constantly.

¹¹In the case of landscapes we might even hope that we'd be able to place values on inanimate objects.

- Philosophers like Peter Singer [3] argue that we have an ethical obligation to prevent the suffering of *individual* animals. On this view, management of deer populations would be unethical if it involves any harm to individual deer, e.g., by allowing hunters to kill some deer, even if this harm to individual deer was beneficial to other conservation values associated with the preserve, and arguably even if it prevented the suffering of other deer.
- Jane Goodall has been criticized by some conservationists for devoting too much attention to the welfare of individual chimpanzees and to little attention to the “broader” issues of ensuring that chimpanzees have the habitat they need to survive in the wild.

Suggesting that we have a duty to a whole species, as opposed to its individual members, is analogous to the way we often suggest that we have a duty to a group — our department, the University, the profession, our country — that goes beyond our obligation to the individual members of that group. Moreover, we often recognize a conflict between our duty to individuals and our duty to a group, e.g., the conflict between individual liberties and national security.

So suggesting that we have a duty to protect biodiversity commits us to conserving species, but not necessarily the individual organisms of which they are composed. Suggesting that we have a duty to protect ecosystems might mean that we have a duty to prevent the extinction of the species of which it is composed, or it might mean that we have a duty to protect the processes that structure it. In neither case is the primary focus of concern on the welfare of individual organisms.

The problem of “natural”

“Every ethical theory must provide principles that describe which objects matter for their own sakes and which do not” [4, p. 188]. So how do we determine that species, to take one example, “matter for their own sake?” In particular, how do we determine that causing a species to go extinct is “bad” and that preventing its extinction is “good,” especially when we remember that the eventual fate of every species is extinction?¹² Part of the response I gave in one of the first lectures in this class was that the current rate of extinction is much higher than it has been at any time in the recent geological past. But why is a high extinction rate bad?

One response might be that it isn’t a “natural” rate of extinction. It’s a “human-caused” rate of extinction. We’ve seen repeatedly that distinguishing between “human-caused” and

¹²The reason everything isn’t extinct is that some species give rise to one or more new species before they go extinct.

“natural” states of a system is problematic because it’s very difficult, if not impossible to identify an objective baseline for comparison. Think about our discussion of how past land use history affects the current structure and composition communities or about how the structure and composition of the Pisgah forest in New Hampshire has changed over the last three centuries. But there’s an even more fundamental issue associated with trying to define a “good” or “desirable” state of a system with its “natural” state:

If we are part of nature, then everything we do is part of nature, and is natural in the primary sense. When we domesticate organisms and bring them into a state of dependence on us, this is simply an example of one species exerting a selection pressure on another. If one calls this “unnatural,” one might just as well say the same of parasitism or symbiosis (compare human domestication of animals and plants and “slave-making” in the social insects).[4, p. 180]

Similarly, if humans are causing a higher rate of extinction and we are part of nature, how can we say that human-caused extinctions are unnatural?

As Callicott et al. point out [1] whether we regard humans as part of the system or not goes well beyond simply noting that we are evolutionarily related to all other living things on this planet. The answer depends on whether we take a more compositionalist view of ecosystems or a more functionalist view.

- *Compositionalist*s view the biotic world as consisting of organisms that are aggregated into populations, communities, and ecosystems.
- *Functionalists* view the biotic world as consisting of physical and chemical processes associated with energy flow and nutrient cycling.
- *Compositionalist*s tend to think of human beings as separate from nature “because culture uniquely enables *Homo sapiens* to adapt ... orders of magnitude faster than can other species ...” [1, p. 24].
- *Functionalists* tend to think of human beings as part of nature because “human dissipative structures do not stand out so sharply from others of comparable size and distribution” [1, p. 24].

Callicott et al. suggest that terms like *biological diversity*, *biological integrity*, and *ecological restoration* are values typically associated with a compositionalist approach, while terms like *ecosystem health*, *ecological services*, *adaptive management*, *ecosystem management*, *sustainable development*, *ecological sustainability*, and *ecological rehabilitation* are values typically associated with a functionalist approach. They argue that a synthetic approach combining insights of both is needed.

The problem of deciding

There's one final question that we've skirted throughout these discussions that I want to mention, not answer, as a prelude to one of the questions I want to raise in our final class discussion on Wednesday: Who gets to make the decisions about conservation policy?

- If I am committed to democracy and individual rights, I must also be committed to the right of others to choose differently from me, even when they make what I think is the wrong choice.
- If I am also committed to conserving biological diversity, I must either be convinced that I can persuade others of the rightness of my views so that the policies I favor will be democratically adopted, be willing to accept a democratic decision allowing policies that will harm conservation values I hold dear, or be willing to believe that my opinion matters more than the opinion of those who don't value biodiversity as highly as I do and make policies for them that's in their own best interest.

That's the dilemma. I choose democracy. Which do you choose?

A solution?

That last problem also hints at a solution. Van Houtan [5] describes an approach to ethics deriving from the work of the philosopher Alasdair MacIntyre, an approach known as virtue ethics. MacIntyre argues that it's a mistake to argue abstractly about moral or ethical rules with the expectation that those rules can then be applied in particular contexts. He would argue, for example, that it makes no sense to ask in the abstract whether reducing the number of deer on a Nature Conservancy preserve by hunting is "right" or "justified." He would argue that it makes sense to ask that question only in the context of a particular shared tradition.

Van Houtan argues that the history of the civil rights movement in the United States illustrates that MacIntyre was right. Leaders of the movement drew explicitly on the biblical tradition to argue for an end to racial discrimination.

Enthusiasm and solidarity did not come from a theoretical or academic "common sense" but were legitimized through the language and practices of Christianity.

He argues that we should describe conservation as a virtue, like honesty or generosity.

To succeed as a social cause, conservation needs a hope that academic science itself cannot provide. Conservation needs a cultural legitimacy that inspires enthusiasm, allegiance, and personal sacrifice—in other words, actual changes in human behavior. Such a vision does not provide a straight path to easy answers; rather, it offers a description of ethics currently estranged from conservation science.

What do you think? Is Van Houtan’s proposal an answer? Is an environmental or conservation ethic necessary?

References

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