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Why Intrinsic Value Is a Poor Basis for Conservation Decisions

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Conservationists from Muir (1916) to McCauley (2006) have championed intrinsic value as the right basis for conservation, one that derives from qualities innate to nonhuman biota, independent of human affairs. They argue that intrinsic value acknowledges the integrity of all species and ecosystems, protects them from short-term human whims, and gives conservation the ethical status it deserves. Many of the same authors deride instrumental value as a basis for conservation, claiming that valuing nonhuman biota in relation to human interests and preferences cheapens the biota's innate worth and makes them vulnerable to competing demands from human population growth and land-use change. In contrast, they describe intrinsic value as "priceless," even "infinite," trumping other assertions of value, and thus providing the strongest foundation for conservation (e.g., McCauley 2006).

We think this view is mistaken for two reasons: (1) intrinsic value is a vaguely formulated concept and not amenable to the sort of comparative expression needed for conservation decisionmaking, and (2) instrumental value is a much richer concept than generally appreciated, permitting a full range of values of biota to be considered in conservation decisions.

What's wrong with intrinsic value?

The idea that species and ecosystems have intrinsic value inspires many conservationists, perhaps drawing on deep-seated emotional connections to the nonhuman environment. However, although intrinsic value may get conservationists out of bed in the morning and into the field or up to the bargaining table, it does not serve them well once they get there.

Conservation requires decisionmaking, and here intrinsic value falls short. Decisionmaking requires trade-offs: competition among conservation projects for limited funds and personnel, compromises between preservation of biota and other human uses, and even conflicts between conservation goals (e.g., predation by endangered peregrine falcons threatening recovery of also endangered California least terns). Trade-offs require comparative evaluation of competing claims, whether this evaluation is done explicitly (e.g., by eliciting preferences, as in multicriteria decision analysis, or by monetizing value, as in contingent valuation [Chee 2004]) or implicitly, by taking a particular decision (e.g., approving a development proposal for a land parcel that harbors a threatened ecosystem, such as longleaf-pine savannah).

Proponents of intrinsic value as a basis for conservation action hope that it will take precedence over competing claims and guarantee conservation. This rarely happens, even for decisions relatively insulated from the pressures of competing demands. For example, any species that is threatened or endangered is eligible for protection under the US Endangered Species Act (ESA). In principle, intrinsic value should give any kind of species equal access to ESA listing. In practice, however, limited funds and personnel to administer the ESA, and political and legal pressures to list particular species (or not), have forced agencies responsible for listing decisions to assign priorities to species on the basis of "scientific" characteristics, such as taxonomic distinctiveness and geographic distribution, and "visceral" characteristics, such as large size and charismatic appeal (Metrick and Weitzman 1996). Intrinsic value may get a proposed listing to the table, but it does not muster the attention needed to get it off the table and into action.

When protection of species and ecosystems conflicts with economic development or with immediate human needs, intrinsic value is even less likely to be an effective basis for conservation. Although proponents of intrinsic value hope that it will take priority over competing socioeconomic demands, it is more likely that conservation goals will be cast aside in favor of those more easily computed in familiar metrics such as dollars. This is not unique to conservation decisionmaking. Many assert that human life has intrinsic value and object to evaluating the preservation or extension of a life in relation to profit, convenience, or other desired ends. Yet decisions about health and safety regulations, such as setting highway speed limits or permissable levels of pesticide residues in food, require at least implicit calculation of what human life is "worth." Sometimes that calculation is made explicitly, and extension of life or prevention of illness is expressed in quantitative, perhaps monetary, terms.

What's right about instrumental value?

Characteristics such as those used to assign priorities among species proposed for ESA listing show that some people attribute greater conservation value to some species than to others. These char-

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acteristics depend upon *instrumental* values, which express values species have in relation to other desired ends (e.g., preservation of genetic diversity or evolutionary processes, or aesthetically desirable ecosystems) rather than in terms of the value intrinsic to the species itself. This is a comparative concept of value rather than the incommensurate, priceless, or perhaps infinite value that some claim for intrinsic value; this comparative value is exactly what conservation decisionmaking requires.

Proponents of intrinsic value have objected to the use of instrumental value as a basis for conservation on several grounds. One is that valuing nonhuman biota in relation to some further end is morally objectionable. In this view, species and ecosystems are regarded as having "sacred" value, in the sense used by Hanselmann and Tanner (2008), who characterized trade-offs involving sacred values as "taboo," distressing those facing such choices. But such trade-offs must be made, and methods of measuring conservation values against competing demands are therefore required.

Some objections to instrumental value as a basis for conservation stem from too narrow a view of instrumental value, in particular, one that puts too much emphasis on market-based and monetary expressions of instrumental value. For example, McCauley (2006) criticized the use of ecosystem-services markets to motivate conservation as "selling out on nature," arguing that only rarely will conservation of biota provide the services that humans need more cheaply than engineered solutions. But this neglects other types of instrumental value that might contribute to the value of species and ecosystems: aesthetic, spiritual, educational, scientific, and even "existence" value—satisfaction humans derive from knowing that species and ecosystems remain, even if they are not experienced directly (Chee 2004). This broader view of instrumental value captures much that proponents ascribe to intrinsic value, but in a form that can be evaluated comparatively and used in conservation decisionmaking.

There are qualitative and quantitative methods for eliciting different kinds of instrumental value for use in formal and informal decision frameworks (e.g., Chee 2004). Some, such as contingent valuation through willingness-to-pay or willingness-to-accept survey protocols, express various kinds of instrumental value and trade-offs between costs and benefits in monetary terms. Others, such as utility or preference elicitation protocols from decision analysis, express value in terms of relative preference of decisionmakers or stakeholders among possible levels for particular instrumental values, such as aesthetic value. These methods articulate trade-offs among competing goals by showing how much of one instrumental value (e.g., aesthetics) a stakeholder or decisionmaker would be willing to exchange for another (e.g., an ecosystem service such as clean water). These protocols represent relative value in numerical, but nonmonetary, terms. Monetary expressions of instrumental value can be used in cost-benefit analyses, and both monetary and nonmonetary expressions can be used in cost-effectiveness analyses and in multicriteria decision frameworks, such as multiattribute utility analysis, the analytic hierarchy process, or outranking procedures (e.g., Chee 2004). Cost-benefit analyses and multicriteria decision frameworks can aid stakeholder negotiations convened to adjudicate controversies about conservation actions (e.g., Gregory and Wellman 2001).

Undoubtedly, arguing that instrumental value is more useful for conservation decisions than intrinsic value will not satisfy everyone. The essential tension between the emotional appeal of intrinsic value and the trade-offs required by conservation decisions is probably irreconcilable. Using instrumental value to bring aesthetic, spiritual, and cultural values of biota into conservation decisionmaking will not satisfy deep ecologists and others who find weighing one form of value against another abhorrent. But those defending conservation against competing uses and allocating scarce resources among conservation actions are better served by building their decisions on a strong foundation of instrumental value rather than on the weak concept of intrinsic value.

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