Review Essay

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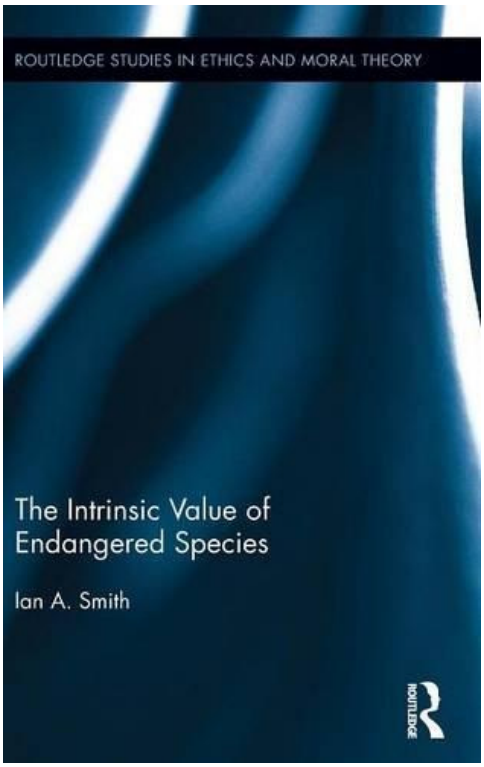
Endangered Species and Intrinsic Value: A Virtue-Centered Approach

I. A. Smith, *The intrinsic value of endangered species*. New York: Routledge, 2016. 158 pp. $49.95 pb.



Is there any good reason to take measures to protect endangered species that have no value for anything we care about? This question propels Ian Smith's *The Intrinsic Value of Endangered Species.*

Smith ambitiously, yet effectively, tackles historied questions about the nature of species and their objective value, while highlighting connections between those questions and advancing a sophisticated new view of natural intrinsic value. Throughout the book, he proficiently navigates debates about the metaphysical status

of species and their intrinsic value, and repeatedly revisits how his conclusions can bear on species management decision-making. Smith's view of species and his account of their intrinsic value is insightful, novel, and nuanced; he has succeeded in writing a book that should interest not only philosophers of science and environmental philosophers, but also biologists (restoration ecologist in particular), and natural resource managers. It would work well for teaching upper level undergraduate or graduate courses in environmental philosophy or philosophy of biology, and even certain ecology or conservation biology courses. Smith's view also has clear implications for how environmental policies and resource management strategies could be more ethical, and offers guidance on how to realize more ethical and effective responses to particular endangered species cases. The overall argumentative progression of this book is as follows.

In Chapter 1, Smith motivates his project by discussing the crucial need to understand the value of species, and on what grounds they ought to be protected, given the magnitude of ongoing and imminent species extinctions we now confront due to anthropogenic climate change (10-12).1 The chapter focuses on a case study of efforts to protect the endangered humpback chub (*Gila sypha*) from extinction. The chub illuminates the role considerations of intrinsic value can play in justifying species preservation efforts as a paradigm of a species with no appreciable instrumental value.

The chub has no clear aesthetic value that would compel anyone to save it. Indeed, a google search immediately confirms the chub is at best unimpressive, and quite ugly compared to other species. As Smith says, "it is certainly not one of the charismatic megafauna, like species of bear, whale, and cheetah that seem to have obvious aesthetic value" (7). And even if some could find the chub cute or somehow impressive, other potential sources of value the species lacks outweigh saving it simply because a few find it cute. For instance, the species doesn't matter environmentally. Smith cites the director of the group charged with protecting the chub from extinction in the Colorado River, the Native Fish Work Group (NFWG), explaining that the chub lacks "ecosystemic value"; insofar as its entering the process of extinction has not changed the tropic community it is a part of in any way and no other species in that community has been or is expected to be negatively impacted by its extinction (8). The chub's functional ecological contributions are negligible. It also lacks anthropogenic instrumental value. Smith explains that although it was once a significant source of food for local indigenous peoples, the numerous species of bass and trout that now populate the river make the chub a far inferior catch by comparison. Worse still for pathetic chub, there are severe economic disadvantages to trying to save it.

To make this clear, Smith focuses on the strategy for saving the chub, and other endangered minnows, advocated by the Glen Canyon Institute, which entails decommissioning the Glen Canyon Dam in the Colorado River Basis. This would have the effect of warming the waters and making the formerly muddy banks muddy once again, which would improve conditions for minnows, including the chub. Yet, these conditions would negatively impact the far more instrumentally valuable bass and walleye species that thrive in the river's current cool and clear conditions. In fact, decommissioning the dam would drain the lake, Lake Powell, which the dam was erected to create. In turn, this would destroy the thriving introduced fisheries, the main sources of tourism to the area, as well as the stores of potable water the dam creates (8).2 Saving the chub is a resource sink. The species has no apparent value for anything. Thus, any good reason to consider taking efforts to save it would have to be rooted in some non-derivative value; intrinsic value that the species has in and of itself (3). Through his subsequent engagement with debates about the nature of species and their intrinsic value, Smith makes a compelling case that we are morally required to save endangered species in many cases, even those like the chub, because they do possess intrinsic value.

Chapter 2 looks at the theories born out of the long and lively debate in biology and philosophy about the nature of species and potential criteria for individuating natural species. Out of context, this may strike some as a departure from a critical discussion of intrinsic value. Yet, Smith shows that it is a fruitful and instructive exercise. The value of understanding different species concepts proves useful over and over again later in the book when he critically appraises others' views on intrinsic value and species management that appeal to different species concepts.

Smith narrows down his working conception of what kind of entity a "species" is such that it could have intrinsic value,3 adopting the Hennigian species concept (HSC) put forth by Meier and Willmann, named after biologist Willi Hennig, a founder of phylogentics and cladism. According to the HSC, a species is a reproductively isolated population or group that originates in speciation (i.e. "a dissolution of their stem species") and cease existing either by going extinct or being outmoded through speciation (29). Smith acknowledges the limitations of the HSC, and notes that adopting this conception limits his subsequent account of intrinsic value to just those groups of organisms that are delineated by the HSC. He shows that, despite these limitations, the HSC fares better than nine major competing conceptions of species for the purposes of

his project in the book. He also shows that the HSC enables one to find faults in numerous other views about the intrinsic value of species (Chaps. 3-5), and later in the book he explores how the view of intrinsic value that he extrapolates from the HSC can be extended to larger groups of organisms (higher order taxa) that are not picked out by the HSC (Chaps. 9-10).

For readers more interested in the nature of intrinsic value than the metaphysics of species Smith's systematic defense of the HSC in Chapter 2 may be a bit dense. Fortunately, his discussion is very organized (see Table 2.1, p. 22), and he does not bury the lead. The takeaway from the HSC upon which Smith's positive account of intrinsic value rests is clear. The HSC provides definite spatiotemporal criteria for identifying and individuating populations of any species. As Smith puts it, according to the HSC, "[species] are real — that is, they are not mere artifacts created by the minds of observers" (29). Indeed, according to the HSC they are created and destroyed by speciation events or extinctions, and therefore have a sort of existence in and of themselves. Smith's view of the intrinsic value of species is thus built on the simple fact that things can go better or worse for such groups. Basically, a species tending toward extinction, or "dying" through the deaths and failed reproductions of their members, is bad for a species and persisting is good. But, of course, a group of organisms can also persist in better or worse shape across time, and this is where Smith's appeal to an Aristotilean ethic comes in. In his view, it is best for a species to be flourishing, and virtuous for us — as rational beings with the ability to assess how things can go better or worse for other sort of entities — to help them flourish to the extent possible in light of various mitigating factors. Before fleshing out this view in Chapter 6, Smith motivates the need for this new conception of intrinsic value by considering problems faced by well-known competing conceptions of the intrinsic value of species in Chapters 3-5.

Chapter 3 focuses on Holmes Rolston's neo-Kantian account of intrinsic value. Referring back to the discussion of different "species" in Chapter 2, Smith initially points to difficulties Rolston's view faces because it is unclear exactly how he conceives of a species (48-50). He then assembles a charitable reconstruction of Rolston's view and, though he says much more in the ways of critical analysis, Smith points out one critical flaw of Rolston's account.

As many readers of this journal will know, Rolston argues that species are "ends in themselves" in the Kantian sense, such that they are individuals with a goal or telos. Their *telos* is to survive and successfully reproduce via the strategies and

behaviors their members have evolved in the environment(s) in which they have done so. Thus, in Rolston's view, "a species is what it is where it is," and is a thing with objective value that is defended by the individual organisms constituting it through their struggles to survive and reproduce (50-52). Smith argues that Rolston's view is insufficient as a conception of intrinsic value, because the view goes no further than this. That is, Rolston provides an account of how species exist such that they have value in and of themselves, but this alone does not tell us why we ought to act to protect species. In Smith's summation, "he jumps the 'good to ought' gap without sufficient argumentation"; simply assuming that because species have intrinsic value we are therefore somehow automatically responsible for protecting it (53).

Chapter 4 considers an alternative view, proposed by Lawrence Johnson. Johnson's view extends to human and non-human species his conception of what it is for an individual person to have intrinsic value. In gloss, according to Johnson, we each, in and of ourselves, have "well-being interests" such that it is more or less good for us to satisfy our well-being interests and more or less bad to not do so (60-3). This is the source of our intrinsic value as persons. Whether or not any species has intrinsic value is then dependent on how Johnson conceives of "species." As Johnson has it, a species is a "genetic lineage sequentially embodied in different individual organisms that is alive just so long as the lineage is embodied in living organisms" (63). Johnson recognizes that species are of course not conscious over and above the consciousness of the individual organisms that carry on the genetic lineage, but he notes that realization of well-being for a species can nevertheless go better or worse in a number of ways, depending on how the members of lineage interact with their environments across time (64). Thus, according to Johnson, species have intrinsic value, since it is objectively good for the genetic lineage as whole to maintain ecological functioning that preserves the lineage and enable it to thrive.

A natural objection to Johnson's view is that he is making a category mistake and double counting the well-being satisfaction of individual organisms. In an attempt to counter such objections, Johnson contends that the interests of a species are distinguishable from those of its constitutive individual members. An example that he thinks makes this point is as follows. The evolution of exceptionally large secondary wing feathers in the male pheasant (*Argusianus argus*) serves to bolster the well-being interests of individual males, while at once threatening the well-being of the species. This is because having the larger feathers attracts more mates (in the interest of

individual males), but also makes it difficult for the males to evade predators, leading to a decline in their population levels (against the interest of the species) (65).

My own view, which I'll not defend here, is that Johnson is in fact making a category mistake; and that talk about well-being interests of the species is elliptical for talk of the well-being and fates of individual organisms. In the cited example, the evolution of larger feathers is simply an adaptation that works in favor of individual males successfully satisfying their interests in one way, and that works against them doing so in another way. What's more, I cannot see how Johnson's view does any better than Rolston's, since he too "jumps the value to ought gap" without argument. Smith, however, gives Johnson the benefit of the doubt on these points, and instead points out that Johnson's conception of species is flawed (66-7), and that his conception of the "well-being interests of a species" does not logically support his comparison of the intrinsic value of species to that of individual persons. Smith's argument for the latter is straightforward; he denies Johnson's assumption that it is possible to have "interests" in any substantive sense without having the capacity to experience whether or not those interests are satisfied. Accordingly, he contends that while persons are the sorts of individuals that can have well-being interests — since we have the capacity to consciously experience things going better or worse with respect to those interests — species just aren't the sorts of things that can have well-being interests, because they can't have interests at all (68).

Chapter 5 critically evaluates Baird Callicott's account of the intrinsic value of species. Smith, I think aptly, separates out the Humean, Darwinian, and Leopoldian elements of Callicott's view. The Humean bit of Callicott recognizes the we have evolved, psychologically, to have both self-regarding and other-regarding sentiments; we are at once egoistic and altruistic. The Darwinian bit recognizes that it is sometimes to our evolutionary advantage as a species to be altruistic, as when a parent sacrifices things for their offspring or when we cooperate as a member of a tribe to survive. Callicott argues accordingly that, even though this is tempered by our egoistic tendencies, our altruism can be extended beyond our families and communities to members of other human communities and of larger "communities" like nations and humanity in general. The Leopoldian bit then expands on Leopold's conception of individual members of the human species being functional members of ecological communities; our altruism should naturally extend to other species and ecosystems because maintaining their well-being can also tend to be to our evolutionary advantage (70-71). On this view, non-human species thus have intrinsic value to us, because when we direct an altruistic, other-regarding, sentiment at some other-than-human entity we are valuing it *for its*

own sake — not just for its instrumental value for us (72). For example, when we naturally extend sympathy to a drowning animal we are valuing it for its own sake.
In Smith's interpretation, Callicott's view does not succumb to the problems of Rolston's or Johnson's. He argues, rather, that Callicott's further argument for why *we ought to* extend moral considerability to other species of organisms does not provide sufficient reasons to conclude that we ought to extend moral considerability to species. Callicott's reasons for why we ought to extend moral considerability to nonhuman things is also Humean. This is that we have evolved such that our reason (in the philosophical sense) can inform, and thus direct our attention to what things ought to be "proper objects of our concern" (72-3). Smith offers a complex evaluation of why Callicott's view cannot consistently hold that we ought to preserve the intrinsic value of individual organisms and also preserve the intrinsic value of species, which I will not bullet out here. In short, Smith points out that, unless he's interpreted in ways that are inconsistent with parts of his overall view, Callicott simply does not clearly articulate any reason why we ought to preserve the intrinsic value of any species, but only gives sufficient reasons to preserve individual organisms (and maybe populations) (74-5).

The second half of Smith's book is where one finds the robust bits of his positive account. Smith fleshes out his virtue-centered account of the intrinsic value of species in Chapter 6. He then elaborates on how the view suggests we should evaluate considerations of preserving sexually reproducing species we've endangered in particular in Chapter 7; he responds to anticipated objections to his view in Chapter 8; he explains how his view enables us to evaluate tradeoffs and competing considerations in evaluating preservation strategies in Chapter 9; and he considers the extent to which his account of the intrinsic value can be extended to higher order taxa (e.g. genera, families, and orders), and what this implies about whether we ought to preserve such groups, in Chapter 10. Since his arguments throughout these chapters are more careful and complex than the preceding critical chapters, and so as not to ruin the book for potential readers, I will forgo repeating Smith's arguments in these later chapters in detail here. I'll instead outline the main thread of his positive argument, and then close by discussing some potential objections to parts of Smith's overall argument that make it a good foil for further thinking about endangered species and our obligations to protect them.

As I've noted, Smith's is a virtue-centered view of the intrinsic value of species. His view is founded on the observation, and basic premise, that life is apparently valuable, since all living things naturally value life in some way or other. In other words, living

things value life to the extent that they actively avoid death and harm and strive to maintain life in various ways (77-78). Smith's conception of intrinsic good and flourishing then builds on John O'Neill's conception of "biological good." In O'Neill's view, the "extrinsic," or instrumental, goods of a biological entity are environmental conditions that enable it to realize its natural capacities and to flourish, and the intrinsic goods of a biological entity are its natural capacities. Thus, for a biological entity to flourish is for an individual of a kind of biological entity to realize its capacities and potentials (80). Smith extends this conception of intrinsic good to species, or at least many species, by tying it to his prior commitment to the HSC. He argues accordingly that "an HSC species flourishes if it maintains reproductive isolation over time" (81). As I understand his argument, this is a minimal condition for any HSC species' flourishing, since maintaining reproductive isolation means that the living members of the species were able to realize their capacities and potentials, at any given time, such that their species could persist. And so, since life is objectively good, on Smith's view, the persistence of any human or non-human species is objectively, and intrinsically, good.

This line of thought, if correct, establishes Smith's claim that endangered species — even pitiful ones like the humpback chub — are intrinsically valuable. But why ought we save them? In line with his virtue-centered argument to establish their value, Smith further argues that it is a virtue for our species to protect and save endangered species for three reasons. First, he argues that humility is a human virtue; and that, since it is our actions that have caused most, if not all, endangered species to be so, we ought to save them to exercise our humility (Ch. 7). Second, he argues that exercising our virtues is partially constitutive of our flourishing. Thus, in his view, exercising our species-directed virtues is partially constitutive of our flourishing (118). This, I think, is to say that using our reason to conclude that species are intrinsically good and exercising our virtues by taking actions to save them is good for our psychological well-being; thereby serving as a potential means of helping each of us flourish. Third, Smith argues that protecting and saving species is partially constitutive of our well-being because they are external goods for our species (118-120). his is to say that other species are good for our survival and well-being as individuals, and thus as a species, because they are functional parts of the environments in which we live, as Leopold emphasizes. Yet, Smith further argues that this does not imply that we ought to save all endangered species.

In his view, we should not save species that we have endangered in cases where doing so would be that a threat to the survival of humans. Perhaps shockingly, he contends not just that we aren't morally required to save such species, but that we are morally

required to let them go extinct. In his view, saving them would be wrong, because preventing humans from existing would be preventing them from flourishing and doing good. He argues that this is wrong, and that humans have a sort of moral priority, because we are the only species capable of doing virtuous, moral, things (9).

In the later chapters, Smith is careful to consider many implications and extensions of his view, as well as different sorts of tradeoffs and value conflicts that can come up when considering to save any particular endangered species. I will leave that material for potential readers to discover. As I believe Smith's book is a worthy read and can help further critical debates about the value of species and how we ought to manage endangered species, I'll conclude now with some brief critical points that may pique the interest of those who remain unmoved by my review so far.

There are indeed many contentious claims made throughout Smith's book. This is not a fault of the book, as one has to say something contentious to say anything new and substantive. Nevertheless, some of Smith's central claims make it a great foil for further critical thought about intrinsic value and species management.

Some will take issue with Smith's claim that for an individual (organism, population, clade, species, etc.) to have intrinsic value, it must be objectively real. Why couldn't a species be intrinsically valuable even if it were a conceptual construct? Surely, one might think that social, psychological, and conceptual constructs of other sorts have a certain sort of value in and of themselves. For example, countries, states, social clubs, and universities one may argue have certain kinds of intrinsic value. And, on different grounds, numerous environmental philosophers argue that there just is no value without valuers; that value itself is a construct (cf. Callicott; Norton; McCord). Accordingly, one might contend that Smith could defend his virtue-centered normative position without committing to the robust views about the metaphysical status of species he defends. After all, we could exercise our species-directed virtues of humility even if species are a conceptual construct. Likewise, efforts to protect species that are partially constitutive of our biological well-being could still help us flourish in various ways, even if species aren't objectively real.

On a somewhat related point, some may find Smith's treatment of Callicott's Humean view of intrinsic value to be unnecessarily critical. Smith contends that Callicott does not give reasons for why we ought to preserve any species, since, in Smith's interpretation, our "other-regarding sentiments" only extend to organisms and perhaps

populations. Yet, Callicott's overall view is not inconsistent with Smith's virtue-centered position, since Smith provides a conception of the intrinsic value of species that would enable one to extend other-regarding sentiments to HSC species. One might reasonably argue, moreover, that extending such other-regarding sentiments is a virtue that is partially constitutive of human flourishing. It is thus arguable that Smith unfairly positions his view as an alternative to Callicott's.

Although he addresses such concerns directly (in Chapter 8), some may also be inclined to still deny Smith's claim that species have intrinsic value on the grounds that having such value requires having self-interests of the sort that organisms have but species do not and cannot (cf. Johnson; Sandler). Smith simply has an alternative view that both organisms and species have intrinsic value because there are objective ways in which they can flourish and things can go better or worse for them. But this is just a different conception intrinsic value, and one could reasonably deny that it is the right one. Since he makes an earnest attempt to show that his conception is of value and practical use for species management decision-making about, the onus would be on anyone who argued as much to show that Smith's conception is worse than any other. This is nevertheless a point on which some might take issue with Smith's arguments.

Smith's commitment to the HSC may also be a point of contention, since one could argue that the HSC is flawed, or that other species concepts are superior for a number reasons. For instance, one could reasonably argue that the HSC, as Smith interprets it, is too unspecific; and that species are really much smaller, localized, historical groups than he considers throughout his book (see De Queiroz). The consequences of this would not be inconsistent with Smith's overall argument necessarily However, it would require positing a new variation of the HSC, whose focus was limited to something like localized "population types." It would also have ramifications for how the practical implications of the view would have to be reframed; "species preservation" efforts would have to focus not on species as delineated by taxa but, rather, on discrete local populations of any species (cf. Donhauser; Sagoff, "Environmental Harm"). Such a revisioning of the HSC may also have ramifications for Smith's counterarguments to anticipated objections and for his claims about how his view suggests evaluating tradeoffs and competing considerations in species management decision-making. Of course, there would be similar sorts of ripples and potential troubles for Smith's account if any alternative species concept (e.g. the ecological species concept) were shown to fare better than the HSC.

Finally, I imagine some readers might question how useful Smith's theory, or even any theory of intrinsic value, really can be for practical decision-making. While Smith considers numerous ways he thinks his view could bear on such decision-making, it is nevertheless arguable that appeal to intrinsic value isn't really useful for making decision. For example, some argue that it isn't considering the intrinsic value of species, but considering their instrumental values, that actually enables us to assess tradeoffs and make effective management decisions (see, for instance, Maguire & Justus). Since Smith's own considerations of various tradeoffs in species management decision-making are prioritized relative to how they bear on human flourishing along various dimensions, some may even gripe that his view collapses intrinsic value to instrumental value.

It is not my mission here to undermine Smith's arguments or to defend them against any of the sorts of potential concerns just glossed. My task has been to evaluate Smith's book and to provoke interest in it, as I believe that it is a theoretically and practically valuable work. nyone interested in natural intrinsic value, species concepts, or species management issues ought to read it.

Notes

1. All cited page numbers refer to Smith's text.

2. Curious about what the NFWG was doing to save the chub in view of all of this, a bit of googling quickly revealed that the situation is even more dire for the pathetic chub than Smith presents. The NFWG has tried to save the chub by breeding them in a hatchery, transferring the hatchlings to lakes around Nevada to mature, and then transferring those mature chubs to the Colorado River; only to have the transferred populations go extinct within one generation because their offspring cannot survive in the Colorado River (see Chessa).

3. Smith does not argue as much, but some would also argue that having criteria for determinately locating any natural thing, such as species, is necessary for even devising ways to study and/or protect and save it (cf. Haskell; Odenbaugh; Sagoff, "What does environmental protection protect?").

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