

individuals to cooperate for the sake of ecosystem goals? I know of no plausible candidates. If the verdict against group selection stands up, I see no way to justify ecosystem moral considerability with the argument from goal-directedness.

X

Earlier I mentioned several distinct strategies for justifying what I call the “preservationist intuition”—intrinsic value, the good of individual plants and animals, and ideals of human excellence. Any of these might be enough. Still, we may find ourselves tempted to believe that whole ecosystems have interests and are therefore morally considerable. This avenue, however, is not promising. Genuine goal-directedness is a step—an essential step—

STUDY QUESTIONS

1. Explain what Cahen means by “moral considerability.”
2. Explain why Cahen thinks that Wright’s account of goal-directedness is better than Nagel’s account.
3. How is a “goal” different from a “byproduct,” according to Cahen? Why does he think it is difficult to distinguish an ecosystem’s goals from its byproducts?
4. Do you agree with Cahen that we should not attribute moral considerability to ecosystems? Why or why not?

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Why Do Species Matter?

LILLY-MARLENE RUSSOW

Prior to her death in 2012, Lilly-Marlene Russow taught philosophy at Purdue University. She was the author of several works in philosophy, and is well known for her contributions to environmental and animal ethics.

toward moral considerability. It makes sense (as I have argued) to claim that plants and other sentient organisms are morally considerable—but only because those beings’ own biological goals provide a nonarbitrary standard for our judgments about their welfare. Were ecosystems genuinely goal-directed, we could try for the next step.

Some ecosystems do indeed appear to have goals—stability, for example. There is a complication, however. Mere behavioral byproducts, which are outcomes of no moral significance, can look deceptively like goals. Moreover, on what I take to be our best current ecological and evolutionary understanding, the goal-directed appearance of ecosystems is in fact deceptive. Stability and other ecosystem properties are byproducts, not goals. Ecosystem interests are, I conclude, a shaky foundation for the preservationist intuition.

In this essay, Russow first examines various test cases to show some of the complexities involved in any attempt to describe obligations to species. Next, she analyzes three arguments for obligations to protect endangered species and concludes that not only do they fail but that there is a conceptual confusion in any attempt to ascribe value to a species. Whatever duty we do have in this regard must rest on the “value—often aesthetic—of individual members of certain species.” Although some of the examples in this article are now outdated (the red wolf’s status as a separate species has been the subject of controversy; the Bullock’s oriole and the Baltimore oriole are no longer considered to be merging into the same species, the northern oriole), the philosophical point made by the test cases remains: what we care about in species preservation often differs from species to species.

I. INTRODUCTION

Consider the following extension of the standard sort of objection to treating animals differently just because they are not humans: the fact that a being is or is not a member of species *S* is not a morally relevant fact, and does not justify treating that being differently from members of other species. If so, we cannot treat a bird differently *just* because it is a California condor rather than a turkey vulture. The problem, then, becomes one of determining what special obligations, if any, a person might have toward California condors, and what might account for those obligations in a way that is generally consistent with the condemnation of speciesism. Since it will turn out that the solution I offer does not admit of a direct and tidy proof, what follows comprises three sections which approach this issue from different directions. The resulting triangulation should serve as justification and motivation for the conclusion sketched in the final section.

II. SPECIES AND INDIVIDUALS

Much of the discussion in the general area of ethics and animals has dealt with the rights of animals, or obligations and duties toward individual animals. The first thing to note is that some, but not all, of the actions normally thought of as obligatory with respect to the protection of vanishing species can be recast as possible duties to individual members of that species. Thus, if it could be shown that we

have a *prima facie* duty not to kill a sentient being, it would follow that it would be wrong, other things being equal, to kill a blue whale or a California condor. But it would be wrong for the same reason, and to the same degree, that it would be wrong to kill a turkey vulture or a pilot whale. Similarly, if it is wrong (something which I do not think can be shown) to deprive an individual animal of its natural habitat, it would be wrong, for the same reasons and to the same degree, to do that to a member of an endangered species. And so on. Thus, an appeal to our duties toward individual animals may provide some protection, but they do not justify the claim that we should treat members of a vanishing species with *more* care than members of other species.

More importantly, duties toward individual beings (or the rights of those individuals) will not always account for all the actions that people feel obligated to do for endangered species—e.g., bring into the world as many individuals of that species as possible, protect them from natural predation, or establish separate breeding colonies. In fact, the protection of a species might involve actions that are demonstrably contrary to the interests of some or all of the individual animals: this seems true in cases where we remove all the animals we can from their natural environment and raise them in zoos, or where we severely restrict the range of a species by hunting all those outside a certain area, as is done in Minnesota to protect the timber wolf. If such efforts are morally correct, our duties to preserve a species cannot be grounded in obligations that we have toward individual animals.

Nor will it be fruitful to treat our obligations to a species as duties toward, or as arising out of the rights of, a species thought of as some special superentity. It is simply not clear that we can make sense of talk about the interests of a species in the absence of beliefs, desires, purposeful action, etc. Since having interests is generally accepted as at least a necessary condition for having rights, and since many of the duties we have toward animals arise directly out of the animals' interests, arguments which show that animals have rights, or that we have duties towards them, will not apply to species. Since arguments which proceed from interests to rights or from interests to obligations make up a majority of the literature on ethics and animals, it is unlikely that these arguments will serve as a key to possible obligations toward species.

Having eliminated the possibility that our obligations toward species are somehow parallel to, or similar to, our obligation not to cause unwarranted pain to an animal, there seem to be only a few possibilities left. We may find that our duties toward species arise not out of the interests of the species, but are rooted in the general obligation to preserve things of value. Alternatively, our obligations to species may in fact be obligations to individuals (either members of the species or other individuals), but obligations that differ from the ones just discussed in that they are not determined simply by the interests of the individual.

III. SOME TEST CASES

If we are to find some intuitively acceptable foundation for claims about our obligations to protect species, we must start afresh. In order to get clear about what, precisely, we are looking for in this context, what obligations we might think we have toward species, what moral claims we are seeking a foundation for, I turn now to a description of some test cases. An examination of these cases illustrates why the object of our search is not something as straightforward as "Do whatever is possible or necessary to preserve the existence of the species"; a considera-

tion of some of the differences between cases will guide our search for the nature of our obligations and the underlying reasons for those obligations.

Case 1. The snail darter is known to exist only in one part of one river. This stretch of river would be destroyed by the building of the Tellico dam. Defenders of the dam have successfully argued that the dam is nonetheless necessary for the economic development and well-being of the area's population. To my knowledge, no serious or large-scale attempt has been made to breed large numbers of snail darters in captivity (for any reason other than research).

Case 2. The Père David deer was first discovered by a Western naturalist in 1865, when Père Armand David found herds of the deer in the Imperial Gardens in Peking: even at that time, they were only known to exist in captivity. Père David brought several animals back to Europe, where they bred readily enough so that now there are healthy populations in several major zoos. There is no reasonable hope of reintroducing the Père David deer to its natural habitat; indeed, it is not even definitely known what its natural habitat was.

Case 3. The red wolf (*Canis rufus*) formerly ranged over the southeastern and south-central United States. As with most wolves, they were threatened, and their range curtailed, by trapping, hunting, and the destruction of habitat. However, a more immediate threat to the continued existence of the red wolf is that these changes extended the range of the more adaptable coyote, with whom the red wolf interbreeds very readily; as a result, there are very few "pure" red wolves left. An attempt has been made to capture some pure breeding stock and raise wolves on preserves.

Case 4. The Baltimore oriole and the Bullock's oriole were long recognized and classified as two separate species of birds. As a result of extensive interbreeding between the two species in areas where their ranges overlapped, the American Ornithologists' Union recently declared that there were no longer two separate species; both ex-species are now called "northern orioles."

Case 5. The Appaloosa is a breed of horse with a distinctively spotted coat; the Lewis and Clark

expedition discovered that the breed was associated with the Nez Perce Indians. When the Nez Perce tribe was defeated by the U.S. Cavalry in 1877 and forced to move, their horses were scattered and interbred with other horses. The distinctive coat pattern was almost lost; not until the middle of the twentieth century was a concerted effort made to gather together the few remaining specimens and reestablish the breed.

Case 6. Many strains of laboratory rats are bred specifically for a certain type of research. Once the need for a particular variety ceases—once the type of research is completed—the rats are usually killed, with the result that the variety becomes extinct.

Case 7. It is commonly known that several diseases such as sleeping sickness, malaria, and human encephalitis are caused by one variety of mosquito but not by others. Much of the disease control in these cases is aimed at exterminating the disease carrying insect; most people do not find it morally wrong to wipe out the whole species.

Case 8. Suppose that zebras were threatened solely because they were hunted for their distinctive striped coats. Suppose, too, that we could remove this threat by selectively breeding zebras that are not striped, that look exactly like mules, although they are still pure zebras. Have we preserved all that we ought to have preserved?

What does an examination of these test cases reveal? First, that our concept of what a species is is not at all unambiguous; at least in part, what counts as a species is a matter of current fashions in taxonomy. Furthermore, it seems that it is not the sheer diversity or number of species that matters: if that were what is valued, moral preference would be given to taxonomic schemes that separated individuals into a larger number of species, a suggestion which seems absurd. The case of the orioles suggests that the decision as to whether to call these things one species or two is not a moral issue at all. Since we are not evidently concerned with the existence or diversity of species in *this* sense, there must be something more at issue than the simple question of whether we have today the same number of species represented as we had yesterday.

Confusion sets in, however, when we try to specify another sense in which it is possible to speak of the "existence" of a species. This only serves to emphasize the basic murkiness of our intuitions about what the object of our concern really is.

This murkiness is further revealed by the fact that it is not at all obvious what we are trying to preserve in some of the test cases. Sometimes, as in the case of the Appaloosa or attempts to save a subspecies like the Arctic wolf or the Mexican wolf, it is not a whole species that is in question. But not all genetic subgroups are of interest—witness the case of the laboratory rat—and sometimes the preservation of the species at the cost of one of its externally obvious features (the stripes on a zebra) is not our only concern. This is not a minor puzzle which can be resolved by changing our question from "why do species matter?" to "why do species and/or subspecies matter?" It is rather a serious issue of what makes a group of animals "special" enough or "unique" enough to warrant concern. And of course, the test cases reveal that our intuitions are not always consistent: although the cases of the red wolf and the northern oriole are parallel in important respects, we are more uneasy about simply reclassifying the red wolf and allowing things to continue along their present path.

The final point to be established is that whatever moral weight is finally attached to the preservation of a species (or subspecies), it can be overridden. We apparently have no compunction about wiping out a species of mosquito if the benefits gained by such action are sufficiently important, although many people were unconvinced by similar arguments in favor of the Tellico dam.

The lesson to be drawn from this section can be stated in a somewhat simplistic form: it is not simply the case that we can solve our problems by arguing that there is some value attached to the mere existence of a species. Our final analysis must take account of various features or properties of certain kinds or groups of animals, and it has to recognize that our concern is with the continued existence of individuals that may or may not have some distinctive characteristics.

IV. SOME TRADITIONAL ANSWERS

There are, of course, some standard replies to the question "Why do species matter?" or, more particularly, to the question "Why do we have at least a *prima facie* duty not to cause a species to become extinct, and in some cases, a duty to try actively to preserve species?" With some tolerance for borderline cases, these replies generally fall into three groups: (1) those that appeal to our role as "stewards" or "caretakers," (2) those that claim that species have some extrinsic value (I include in this group those that argue that the species is valuable as part of the ecosystem or as a link in the evolutionary scheme of things), and (3) those that appeal to some intrinsic or inherent value that is supposed to make a species worth preserving. In this section, with the help of the test cases just discussed, I indicate some serious flaws with each of these responses.

The first type of view has been put forward in the philosophical literature by Joel Feinberg, who states that our duty to preserve whole species may be more important than any rights had by individual animals. He argues, first, that this duty does not arise from a right or claim that can properly be attributed to the species as a whole (his reasons are much the same as the ones I cited in Section 2 of this paper), and second, while we have some duty to unborn generations that directs us to preserve species, that duty is much weaker than the actual duty we have to preserve species. The fact that our actual duty extends beyond our duties to future generations is explained by the claim that we have duties of "stewardship" with respect to the world as a whole. Thus, Feinberg notes that his "inclination is to seek an explanation in terms of the requirements of our unique station as rational custodians of the planet we temporarily occupy."

The main objection to this appeal to our role as stewards or caretakers is that it begs the question. The job of a custodian is to protect that which is deserving of protection, that which has some value or worth. But the issue before us now is precisely *whether* species have value, and why. If we justify our obligations of stewardship by reference to

the value of that which is cared for, we cannot also explain the value by pointing to the duties of stewardship.

The second type of argument is the one which establishes the value of a species by locating it in the "larger scheme of things." That is, one might try to argue that species matter because they contribute to, or form an essential part of, some other good. This line of defense has several variations.

The first version is completely anthropocentric: it is claimed that vanishing species are of concern to us because their difficulties serve as a warning that we have polluted or altered the environment in a way that is potentially dangerous or undesirable for us. Thus, the California condor whose eggshells are weakened due to the absorption of DDT indicates that something is wrong: presumably we are being affected in subtle ways by the absorption of DDT, and that is bad for us. Alternatively, diminishing numbers of game animals may signal overhunting which, if left unchecked, would leave the sportsman with fewer things to hunt. And, as we become more aware of the benefits that might be obtained from rare varieties of plants and animals (drugs, substitutes for other natural resources, tools for research), we may become reluctant to risk the disappearance of a species that might be of practical use to us in the future.

This line of argument does not carry us very far. In the case of a subspecies, most benefits could be derived from other varieties of the same species. More important, when faced with the loss of a unique variety or species, we may simply decide that, even taking into account the possibility of error, there is not enough reason to think that the species will ever be of use; we may take a calculated risk and decide that it is not worth it. Finally, the use of a species as a danger signal may apply to species whose decline is due to some subtle and unforeseen change in the environment, but will not justify concern for a species threatened by a known and foreseen event like the building of a dam.

Other attempts to ascribe extrinsic value to a species do not limit themselves to potential human and practical goods. Thus, it is often argued that each species occupies a unique niche in a rich and

complex, but delicately balanced, ecosystem. By destroying a single species, we upset the balance of the whole system. On the assumption that the system as a whole should be preserved, the value of a species is determined, at least in part, by its contribution to the whole.

In assessing this argument, it is important to realize that such a justification (a) may lead to odd conclusions about some of the test cases, and (b) allows for changes which do not affect the system, or which result in the substitution of a richer, more complex system for one that is more primitive or less evolved. With regard to the first of these points, species that exist only in zoos would seem to have no special value. In terms of our test cases, the David deer does not exist as part of a system, but only in isolation. Similarly, the Appaloosa horse, a domesticated variety which is neither better suited nor worse than any other sort of horse, would not have any special value. In contrast, the whole cycle of mosquitoes, disease organisms adapted to these hosts, and other beings susceptible to those diseases is quite a complex and marvelous bit of systematic adaptation. Thus, it would seem to be wrong to wipe out the encephalitis-bearing mosquito.

With regard to the second point, we might consider changes effected by white settlers in previously isolated areas such as New Zealand and Australia. The introduction of new species has resulted in a whole new ecosystem, with many of the former indigenous species being replaced by introduced varieties. As long as the new system works, there seems to be no grounds for objections.

The third version of an appeal to extrinsic value is sometimes presented in Darwinian terms: species are important as links in the evolutionary chain. This will get us nowhere, however, because the extinction of one species, the replacement of one by another, is as much a part of evolution as is the development of a new species.

One should also consider a more general concern about all those versions of the argument which focus on the species' role in the natural order of things: all of these arguments presuppose that "the natural order of things" is, in itself, good. As William Blackstone pointed out, this is by no means

obvious: "Unless one adheres dogmatically to a position of a 'reverence for all life,' the extinction of some species or forms of life may be seen as quite desirable. (This is parallel to the point often made by philosophers that not all 'customary' or 'natural' behavior is necessarily good.)" Unless we have some other way of ascribing value to a system, and to the animals which actually fulfill a certain function in that system (as opposed to possible replacements), the argument will not get off the ground.

Finally, then, the process of elimination leads us to the set of arguments which point to some *intrinsic value* that a species is supposed to have. The notion that species have an intrinsic value, if established, would allow us to defend much stronger claims about human obligations toward threatened species. Thus, if a species is intrinsically valuable, we should try to preserve it even when it no longer has a place in the natural ecosystem, or when it could be replaced by another species that would occupy the same niche. Most important, we should not ignore a species just because it serves no useful purpose.

Unsurprisingly, the stumbling block is what this intrinsic value might be grounded in. Without an explanation of that, we have no nonarbitrary way of deciding whether subspecies as well as species have intrinsic value or how much intrinsic value a species might have. The last question is meant to bring out issues that will arise in cases of conflict of interests: Is the intrinsic value of a species of mosquito sufficient to outweigh the benefits to be gained by eradicating the means of spreading a disease like encephalitis? Is the intrinsic value of the snail darter sufficient to outweigh the economic hardship that might be alleviated by the construction of a dam? In short, to say that something has intrinsic value does not tell us *how much* value it has, nor does it allow us to make the sorts of judgments that are often called for in considering the fate of an endangered species.

The attempt to sidestep the difficulties raised by subspecies by broadening the ascription of value to include subspecies opens a whole Pandora's box. It would follow that any genetic variation within a species that results in distinctive characteristics

would need separate protection. In the case of forms developed through selective breeding, it is not clear whether we have a situation analogous to natural subspecies, or whether no special value is attached to different breeds.

In order to speak to either of these issues, and in order to lend plausibility to the whole enterprise, it would seem necessary to consider first the justification for ascribing value to whichever groups have such value. If intrinsic value does not spring from anything, if it becomes merely another way of saying that we should protect species, we are going around in circles, without explaining anything. Some further explanation is needed.

Some appeals to intrinsic value are grounded in the intuition that diversity itself is a virtue. If so, it would seem incumbent upon us to create new species wherever possible, even bizarre ones that would have no purpose other than to be different. Something other than diversity must therefore be valued.

The comparison that is often made between species and natural wonders, spectacular landscapes, or even works of art, suggests that species might have some aesthetic value. This seems to accord well with our naive intuitions, provided that *aesthetic value* is interpreted rather loosely; most of us believe that the world would be a poorer place for the loss of bald eagles in the same way that it would be poorer for the loss of the Grand Canyon or a great work of art. In all cases, the experience of seeing these things is an inherently worthwhile experience. And since diversity in some cases is a component in aesthetic appreciation, part of the previous intuition would be preserved. There is also room for degrees of selectivity and concern with superficial changes: the variety of rat that is allowed to become extinct may have no special aesthetic value, and a bird is neither more nor less aesthetically pleasing when we change its name.

There are some drawbacks to this line of argument: there are some species which, by no stretch of the imagination, are aesthetically significant. But aesthetic value can cover a surprising range of things: a tiger may be simply beautiful; a blue whale is awe-inspiring; a bird might be decorative; an Appaloosa is of interest because of its historical

significance; and even a drab little plant may inspire admiration for the marvelous way it has been adapted to a special environment. Even so, there may be species such as the snail darter that simply have no aesthetic value. In these cases, lacking any alternative, we may be forced to the conclusion that such species are not worth preserving.

Seen from other angles, once again the appeal to the aesthetic value of species is illuminating. Things that have an aesthetic value may be compared and ranked in some cases, and commitment of resources made accordingly. We believe that diminishing the aesthetic value of a thing for mere economic benefit is immoral, but that aesthetic value is not absolute—that the fact that something has aesthetic value may be overridden by the fact that harming that thing, or destroying it, may result in some greater good. That is, someone who agrees to destroy a piece of Greek statuary for personal gain would be condemned as having done something immoral, but someone who is faced with a choice between saving his children and saving a “priceless” painting would be said to have skewed values if he chose to save the painting. Applying these observations to species, we can see that an appeal to aesthetic value would justify putting more effort into the preservation of one species than the preservation of another; indeed, just as we think that the doodling of a would-be artist may have no merit at all, we may think that the accidental and unfortunate mutation of a species is not worth preserving. Following the analogy, allowing a species to become extinct for *mere* economic gain might be seen as immoral, while the possibility remains open that other (human?) good might outweigh the goods achieved by the preservation of a species.

Although the appeal to aesthetic values has much to recommend it—even when we have taken account of the fact that it does not guarantee that all species matter—there seems to be a fundamental confusion that still affects the cogency of the whole argument and its application to the question of special obligations to endangered species, for if the value of a species is based on its aesthetic value, it is impossible to explain why an endangered species should be more valuable, or more

worthy of preservation, than an unendangered species. The appeal to “rarity” will not help, if what we are talking about is species: each species is unique, no more or less rare than any other species: there is in each case one and only one species that we are talking about.

This problem of application seems to arise because the object of aesthetic appreciation, and hence of aesthetic value, has been misidentified, for it is not the case that we perceive, admire, and appreciate a *species*—species construed either as a group or set of similar animals or as a name that we attach to certain kinds of animals in virtue of some classification scheme. What we value is the existence of individuals with certain characteristics. If this is correct, then the whole attempt to explain why species matter by arguing that *they* have aesthetic value needs to be redirected. This is what I try to do in the final section of this paper.

V. VALUING THE INDIVIDUAL

What I propose is that the intuition behind the argument from aesthetic value is correct, but misdirected. The reasons that were given for the value of a species are, in fact, reasons for saying that an individual has value. We do not admire the grace and beauty of the species *Panthera tigris*; rather, we admire the grace and beauty of the individual Bengal tigers that we may encounter. What we value then is the existence of that individual and the existence (present or future) of individuals like that. The ways in which other individuals should be “like that” will depend on why we value that particular sort of individual: the stripes on a zebra do not matter if we value zebras primarily for the way they are adapted to a certain environment, their unique fitness for a certain sort of life. If, on the other hand, we value zebras because their stripes are aesthetically pleasing, the stripes do matter. Since our attitudes toward zebras probably include both of these features, it is not surprising to find that my hypothetical test case produces conflicting intuitions.

The shift of emphasis from species to individuals allows us to make sense of the stronger feelings we

have about endangered species in two ways. First, the fact that there are very few members of a species—the fact that we rarely encounter one-itself increases the value of those encounters. I can see turkey vultures almost every day, and I can eat apples almost every day, but seeing a bald eagle or eating wild strawberries are experiences that are much less common, more delightful just for their rarity and unexpectedness. Even snail darters, which, if we encountered them every day would be drab and uninteresting, become more interesting just because we don’t—or may not—see them every day. Second, part of our interest in an individual carries over to a desire that there be future opportunities to see these things again (just as when, upon finding a new and beautiful work of art, I will wish to go back and see it again). In the case of animals, unlike works of art, I know that this animal will not live forever, but that other animals like this one will have similar aesthetic value. Thus, because I value possible future encounters, I will also want to do what is needed to ensure the possibility of such encounters—i.e., make sure that enough presently existing individuals of this type will be able to reproduce and survive. This is rather like the duty that we have to support and contribute to museums, or to other efforts to preserve works of art.

To sum up, then: individual animals can have, to a greater or lesser degree, aesthetic value: they are valued for their simple beauty, for their awesomeness, for their intriguing adaptations, for their rarity, and for many other reasons. We have moral obligations to protect things of aesthetic value, and to ensure (in an odd sense) their continued existence; thus we have a duty to protect individual animals (the duty may be weaker or stronger depending on the value of the individual), and to ensure that there will continue to be animals of this sort (this duty will also be weaker or stronger, depending on value).

I began this paper by suggesting that our obligations to vanishing species might appear inconsistent with a general condemnation of speciesism. My proposal is not inconsistent: we value and protect animals because of their aesthetic value, not because they are members of a given species.