DOWNLOAD PDF BIODIVERSITY AND ENVIRONMENTAL PHILOSOPHY

Chapter 1 : Biodiversity - Bibliography - PhilPapers

This book explores the epistemological and ethical issues at the foundations of environmental philosophy, emphasising the conservation of biodiversity. Sahota Sarkar criticises attempts to attribute intrinsic value to nature and defends an anthropocentric position on biodiversity conservation based on an untraditional concept of transformative.

ABSTRACT Philosophy of ecology has been slow to become established as an area of philosophical interest, but it is now receiving considerable attention. This area holds great promise for the advancement of both ecology and the philosophy of science. Insights from the philosophy of science can advance ecology in a number of ways. For example, philosophy can assist with the development of improved models of ecological hypothesis testing and theory choice. Philosophy can also help ecologists understand the role and limitations of mathematical models in ecology. On the other side, philosophy of science will be advanced by having ecological case studies as part of the stock of examples. Ecological case studies can shed light on old philosophical topics as well as raise novel issues for the philosophy of science. Formulating appropriate definitions for such terms is thus not a purely scientific matter, and this may prompt a reevaluation of philosophical accounts of defining theoretical terms. We consider some of the topics currently receiving attention in the philosophy of ecology and other topics in need of attention. Our aim is to prompt further exchange between ecology and philosophy of science and to help set the agenda for future work in the philosophy of ecology. The topics covered include: First, ecology is an important and fascinating branch of biology, with distinctive philosophical issues. Second, ecology is only one small step away from urgent political, ethical, and management decisions about how best to live in an apparently fragile and increasingly degraded environment. Third, properly conceived, philosophy of ecology can contribute directly to our understanding of ecology and to its advancement. Here we focus primarily on this third role of philosophy of ecology, and consider a number of places where philosophy can contribute to ecology. We survey some of the current research being done in the area of philosophy of ecology, and we make suggestions for an agenda for future research in this area. We also hope to help clarify what philosophy of ecology is and what it should aspire to be. We discuss several topics related to philosophy of ecology and conservation biology, starting with the role and understanding of mathematical models. This is followed by a discussion of several practical problems involving the standard model of hypothesis testing and the use of decision-theoretic methods in environmental science. We then move on to discuss the issue of how we should understand biodiversity, and why this matters for conservation management. Finally, we look at environmental ethics and its relationship with ecology and conservation biology. These four topics were chosen because they are of contemporary interest in philosophy of ecology circles and are topics where there is much fruitful work still to be done. The topics in question are also useful vehicles for highlighting the variety of places where philosophy might prove useful to ecology and conservation biology. Such models attempt to describe and perhaps explain the behavior of some aspect of the environment. They are not in the business of describing how things are, but rather they prescribe how things should be. The prime examples of normative mathematical models are formal decision models used in conservation management. Of course, in each case, there are more sophisticated models than the textbook ones we consider here, but the general points we wish to make about models also carry over to the more sophisticated ones. Descriptive models will be considered first. These models make a number of idealizations about the target biological system. For example, the logistic equation assumes a constant carrying capacity and a constant growth rate, and the complications of age structure are ignored. The Lotka-Volterra equation assumes that the predator is a specialist and that capture and conversion efficiencies are constant Gotelli Of course, there are various modifications of these models that relax these idealizations, but these modified models also carry their own idealizations, including whether the order of the governing differential equations is first order or second order Ginzburg and Colyvan It is part of the business of modeling to introduce idealizations and simplifications. Answering this question takes us deep into important issues in the philosophy of science. Here, we will touch on some of these issues and highlight why considering the case of ecological modeling might be fruitful in exploring them. We will also discuss why the relevant philosophy of science might shed light on the scientific questions of model choice in ecology. The first and perhaps superficial answer as to why models must introduce idealizations is tractability. Without idealizations, a model would be mathematically and practically intractable. We obviously do not want models as complicated and as cumbersome as the systems they model. The question then arises as to how simplified models, riddled as they are with false assumptions, can tell us anything about the target systems Cartwright This is really the crux of the matter. To provide a concrete example, how is it that assuming a constant carrying capacity can tell us anything about a population living in an environment whose carrying capacity varies? Perhaps the answer is that if the carrying capacity does not vary too much assuming a certain amount of robustness of the model , the predictions we make from the model will not be too far from the truth. Determining when such idealizations are justified and when they are not is no easy task. It often depends on trial and error, and a great deal of good judgment on the part of the modeler. There is another, less defensive answer to the question of how simplified models can tell us anything interesting about the target system. It might be argued that idealizations are not merely made for mathematical and practical tractability. Rather, the abstraction away from irrelevant detail might be thought to allow the model to pinpoint what makes the target system really tick Batterman Such a philosophical take on modeling suggests that these so-called descriptive models might be explanatory as well. It seems that ecology is a particularly good place to investigate this line of thought, because population models, for example, are not usually taken to be offering explanations. The reasons for thinking that population models cannot be explanatory are many and we will touch on just one here. Ecology is the study of complicated biological interactions, and it would seem that any real explanation will need to deal with the biological complexity in its full detail. At least, the explanation will need to identify the relevant causal details, but these will be hard to identify. To put the point crudely, population abundance must be explained by identifying the relevant causal details of how it is that each organism is alive or dead. It would seem to have nothing to do with differential equations. But perhaps this is taking too narrow a view of the kinds of explanations ecology seeks. After all, there are other interesting ecological facts in need of explanation, such as the long-term behavior of a population as it approaches an approximately-constant carrying capacity. What kinds of abundance cycles will emerge and why? Will the population asymptotically approach the carrying capacity, or will it rapidly decline? The individual-level biology seems poorly equipped to answer these more global questions. Mathematical models seem to provide exactly the right tools for this job. Moreover, if this line of argument is thought to be compelling, ecological modelers might find that there is no need to be defensive about the simple and often unrealistic assumptions of their models. The point of the example is to help illustrate the differences between such normative models and other kinds of scientific models; nothing much hangs on the particular example chosen. We now turn to a discussion of normative mathematical models. As we have already mentioned, the standard decision-theoretic model that counsels an agent to maximize expected utility is the main example of a normative mathematical model. However, here we will discuss consensus models, which provide another example of a normative mathematical model that has recently found applications in conservation planning. There are many situations where a group, with strong differences of opinion, is charged with a conservation-management decision and must come to a consensus about what to do. There are various mathematical models that tackle the problem of group decisions, but one that has been recently applied to environmental decisions is the Lehrer-Wagner consensus model Regan et al. It can then be proven that, so long as the group members do not assign trivial weightings of respect i. The idea is that individuals will update their view about the disputed quantity based on their respect for the expertise of others in the group. This model is normative rather than descriptive because it prescribes the result that the group ought to arrive at. It does not describe the behavior of some particular group. The beauty of such a model is that once the group members have provided the model with their weightings of respect and their values for the disputed quantity, they have done all that is required of them. The model will do the work and deliver the desired result. Of course, we presuppose here that there is a certain amount of agreement about surrounding issues. If there is fundamental disagreement about how to proceed, about how to represent various quantities, or even which quantities are relevant, for example , the model may be of limited or no use. It must be remembered, however, that we are introducing this model only as an example, so it is not unreasonable for us to assume that the conditions for its implementation are satisfied. If they are not, other methods e. There are a number of idealizations in the model as presented. Some are apparently for mathematical convenience e. It is this latter class of idealization that is distinctive to normative models and deserves further discussion. The norm of coherence beliefs obey standard probability theory , for example, is supposed to be prescriptive, rather than descriptive. Having preferences satisfy the standard axioms e. These idealizations are often said to capture the structure of the beliefs and preferences of an ideally rational agent. There are undoubtedly agents whose beliefs and preferences do not conform to these axioms, but such agents are thought to be defective in some way. Arguably, such agents are irrational and ought to reform their beliefs and preferences so as to satisfy the relevant axioms. These idealizations are quite different from other idealizations in science, precisely because of their normative character. Indeed, there seems to be no analog of such idealizations in other non-normative scientific models. For example, it is not as though predators really ought to be specialists or that carrying capacity ought to be constant. Such assumptions play completely different roles in the relevant models. There is a great deal of interest in the normative idealizations we have mentioned. Perhaps the most interesting feature of these normative models involves the interaction of the normative idealizations with those introduced for mathematical convenience. For instance, we might agree that a normative theory of belief such as Bayesian belief theory compels us to at least strive toward having our beliefs satisfy the axioms of probability theory. To do otherwise is to sin against rationality, or so this line of thought goes. To change the example, however, what about agents in a consensus situation who wish to change their respect weightings as a result of disagreements over the disputed quantity? This hardly seems irrational, and yet the model depends on this assumption. Our point here is that although the models under discussion are normative, not every assumption is normative. This in turn casts some doubt on the normative force of the results delivered by these models. Given that formal models of which the consensus model is only one example have great potential in conservation management, a better understanding of both kinds of idealization would constitute a major advance for ecology and conservation biology.

Chapter 2 : Environmental Ethics (Stanford Encyclopedia of Philosophy)

Sahotra Sarkar's Biodiversity and Environmental Philosophy: An Introduction is the first book by a philosopher of science on the conceptual foundations of conservation biology. The book covers an unusually broad set of topics, from normative foundations of conservation ethics to technical issues in algorithmic procedures for systematic.

But it also traces the study of aspects of biodiversity back as far as Aristotle. To some extent, biodiversity merely offers a new, emotive, term for some older ideas and programs. On the one hand, workers taking advantage of the acknowledged importance of the term have expanded its meaning to capture concerns at a fine scale, such as that focussing on a favourite single species. In fact, Norton claims that any increase in our understanding of biodiversity will make it less likely that there will be a single objective measure. This perspective is in accord with recognition of functional-compositional perspectives on biodiversity. One cannot aggregate all these different versions of biodiversity. They argue that biodiversity conservation is rooted primarily in ethics and we must not continue to back away from values and advocacy. The idea that the choice of a measure of biodiversity depends on values finds support in Sarkar He argues that biodiversity operationally amounts to whatever is the valued target of conservation priority setting for different localities. Wilson describes this change in perspective as a realization that biological diversity is disappearing and, unlike other threatened things, is irreversible. Ehrenfeld similarly reinforces this idea of the value of diversity in the aggregate. He argues that diversity previously was never regarded in itself to be in danger, but that biodiversity now is recognised as endangered in its own right. Takacs reviews cases where the definition of biodiversity is wrapped up in the idea of strategies needed to preserve variation. In accord with this perspective is a shift to a focus on valuing ecosystem processes. This focus arguably will ensure maintenance and ongoing evolution of these systems, and therefore all of biodiversity. Holistic perspectives on biodiversity have emerged also through another important focus. These arguments suggest that core biodiversity values might be based more on what we do not know than what we do know. Biodiversity can be viewed as primarily capturing the two-fold challenge of unknown variety, having unknown value. A species, or other element of biodiversity, has option value when its continued existence retains the possibility of future uses and benefits. Option value corresponds not just to unknown future values of known species, but also to the unknown values of unknown species or other components of variation. Estimating and quantifying the largely unknown variation that makes up biodiversity is one and the same as quantifying corresponding option values of biodiversity. According to this emphasis, a basic definition of biodiversity might be expanded as: These possibilities are discussed further in the section on Integrating Process and Elements Perspectives. Given that holistic approaches may integrate functional and compositional aspects, the following sections address these different biodiversity perspectives. A later section, Alternatives to Unit-species , presents attempts to address some weaknesses of this initial approach. Commodity value and other direct use values have intuitive appeal because they reflect known values. But a key problem is that species need to be preserved for reasons other than any known value as resources for human use Sober Callicott discusses philosophical arguments regarding non-utilitarian value and concludes that there is no easy argument to be made except a moral one. A philosophical issue is whether such species values depend on a human-centered perspective. Norton sees all species as collectively embraced by an environmental ethic that is anthropocentric. Preferences-based approaches to valuation can provide economic dollar estimates of value. This valuation process may include methods for assessing and quantifying option values. A claimed advantage of such approaches is that the only good way to protect species is to place an economic value on them. Randall argues that such quantification is advantageous because the species preservation option will fare well when the full range of values is included in conservation priority setting. The context for many of these arguments has been a consideration of various criteria for placing priorities among species for conservation efforts. Triage recalls the medical context in which priorities are set for investments in saving patients. Applied to conservation, individual species are differentially valued and assessed relative to differential opportunity costs. The best conservation package is to be found through a process of calculating costs and benefits of protection of individual species. Philosophical issues arise in the debate as to whether biodiversity should be approached through the process of differentially valuing species, so that choices could be made in the face of a budget, or regarding species as the fundamental unit and trying to protect them all. The latter option is arguably more holistic and in accord with a focus on all of biodiversity the individual species focus is sometimes viewed as the first of three phases of growth in biological resources assessment; see the section on The Shift from Elements to Processes. This book documents an attempt to move from values of species to some overall value of biodiversity, rejecting typical triage arguments based on benefits versus costs for individual species. He argues that every species arguably has utilitarian value and that species perceived values are hard to estimate. This is directly in preference to a cost-benefit approach, characterized as examining single species and their properties and deciding how much to invest. These vary with philosophical perspectives about the nature of values. These methods address the idea that a species that is taxonomically or phylogenetically distinctive may deserve a higher priority for biodiversity conservation see World Conservation Union Takacs joins others in arguing that we do not know enough about species to assign different values for further review, see Faith As an alternative to such a triage approach, an SMS-style approach again is advocated based on the number of unit-species saved within a budget. The SMS approach, however, arguably suffers from a double-barrelled arbitrariness of its own, in the choice of a level of variation species and the choice of a threshold on costs. Alternative approaches are considered in the next section. Alternatives to Unit-species We can recognize two alternatives to the use of species as equal-weight units for an SMS. One of these see the section on The Shift from Elements to Processes consciously moves further away from units or items of any kind. Here, the valuation of species is seen as problematic, with arbitrary solutions. Valuation is to encompass all of biodiversity but through a functional perspective, shifting the focus to ecosystems processes Norton , The other alternative [see the section on Option Value and Hierarchy of Variation] might be viewed as going to the other extreme. Units or elements of biodiversity are seen at least implicitly at every level of biological variation, and the quantification of variation is to provide relative valuations e. These two perspectives provide different responses to the issues concerning taxonomic distinctiveness valuations on species â€” so providing one benchmark for comparisons. In the ecosystem processes case, this has provided a prototype example of problems with attempts to value species-units. In the hierarchical variation case, it has provided a prototype example of the quantification of unknown variation and option value at one nominated scale of biodiversity. The first was the focus on individual species. The focus is on maintaining functions of healthy ecosystems, such as provision of clean air and water. This process orientation is compatible with much recent work internationally on ecosystem services [Takacs ; and Millennium Ecosystem Assessment in Other Internet Resources]. The processes perspective is to determine how we look at biodiversity: Biological integrity is primarily concerned with the persistence of biogeographic, evolutionary, and ecosystem processes, such as those relating to energy flows. The unit-species perspective has been justified through option values and a response to a lack of knowledge â€” we do not know enough to differentially value species. But consideration of option values also has been used to justify a move away from a species-as-units approach, to embrace a whole hierarchy of possible units. Suppose, for example, that the units of interest are features of species a feature might be some morphological characteristic shared by all members of that species. These features in general have unknown future values. It follows that total option value would be increased by having more features protected. If we apply the rationale that all these features should be treated as units of equal value, then some species those that are phylogenetically distinctive; see below will make larger contributions to the overall feature diversity represented by a set of species. We see that the same argument used to justify species as equal-value units can be used to justify differential valuation of species Faith Feature diversity can provide a basis for valuation, but it raises measurement challenges. Not only do we not know, in general, the future value of different features, but also we cannot even list the features for most species. Phylogenetic pattern provides one way to estimate and quantify variation at the feature level. A species complements others in representing additional evolutionary history Faith , as depicted in the branches of an estimated phylogeny. The degree of complementarity reflects the relative number of additional features contributed by that species. For example, given some subset of species that are well-protected, and two species in that taxonomic group that are endangered, the priority for conservation investment may depend on the relative gains in feature diversity the complementarity values expected for each species. We do not know in practice what all the actual features are, but can make a prediction about relative gains and losses. Priorities for conservation efforts for endangered species then can respond to both threat and the potential loss of PD. A nice illustration of the contrast between biodiversity assessments at the species and features levels is found in the recent study of Yesson and Culham They showed that, while many cyclamen plant species are likely to be impacted by expected climate change, the expected loss of cyclamen PD nevertheless would be relatively low. The set of cyclamen species resistant to climate change would retain high PD because they are dispersed throughout the phylogenetic tree. Such a potential retention of feature diversity, and corresponding evolutionary potential for discussion, see Forest et al. This link from option values to processes is discussed further below in the section Integrating Process and Elements Perspectives. Some proposed taxonomic distinctiveness methods indeed simply have been species-based attempts to assign differential values. But when the focus is on biodiversity units at a lower level, it is not an attempt to apply differential values to species as fundamental units of biodiversity, but equal values to those lower-level units. The focus on these units rather than conventional species is highlighted by the fact that for subsequent priority setting on places, species sometimes are ignored altogether Faith We return to this issue below, in discussing ways to side-step contentious species designations in DNA barcoding see the section on Biodiversity and DNA barcoding. Features of species quantified in this way are just one part of a whole hierarchy of variation. Sarkar and Margules emphasize that, when we speak of genes, species, and ecosystems, it is not that these form the specific entities of interest but instead are benchmarks for the full hierarchy of variation: The value of all of biodiversity is in this full hierarchy of variation â€” measuring one measures the other. These values may also encompass intrinsic values of biodiversity. This suggest that any calculus of relative option values indicating relative value contributions made by species, places, etc is also a calculus of relative intrinsic values. For conservation priority setting, each new place for example adds some biodiversity to the total for a set of places. However, this comparison among places is arguably made easier also because we only require complementarity â€” marginal gains in variation â€” rather than total amounts. Sarkar and Margules , p. Sarkar and Margules describe biodiversity as rooted in place, but this is just one scale of decision making. We can apply the same complementarity principle to species not places, as in the example of complementarity values at the underlying feature level estimated from phylogenetic pattern a general conceptual model for complementarity at different levels of biodiversity is found in Faith These issues are addressed in the section on Biodiversity and Growth of Knowledge. An appealing property of unit-species approaches was that quantification of option values allowed the political process to balance these with other values of society.

Chapter 3 : Environmental philosophy - Wikipedia

This book explores the epistemological and ethical issues at the foundations of environmental philosophy, emphasising the conservation of biodiversity.

A Philosophy for Biodiversity? First, his book has a rigorous and careful discussion of why we should preserve biodiversity. This is all the more important since much of environmental ethics has rested on normative claims which are unclear in meaning, appear unjustified at best and unjustifiable at worst, and are politically ineffective. Second, Sarkar is at home in the science of conservation biology and offers important analyses of methodological issues in both ecology and conservation biology. In this commentary, I raise worries and open questions that can be divided into four sections: Let me now turn from praise to criticism. If an object or process has positive transformative value, then we should preserve that object or process. Biodiversity has positive transformative value both directly and indirectly. Hence, we should preserve biodiversity. There are several preliminary issues to consider. Second, what is the distinction between direct and indirect transformative value? In order to proceed, we must first define the notion of demand value , D An object has demand value just in case it satisfies some felt preference of an individual. More precisely, T An object has transformative value if it would alter a felt preference into some other felt preference. Likewise, we also have the notions of direct and indirect transformative value , 82 â€" TD An object has direct transformative value if it would alter a felt preference into some other felt preference both of which directly concern biodiversity. TI An object has indirect transformative value if it would alter a felt preference into some other felt preference both of which indirectly concern biodiversity. Sarkar raises two worries concerning the argument , 95 â€" Not all transformative values are positive â€" some are in fact negative. Some experiences of biodiversity in fact have negative transformative value. It does not appear that we can determine what objects and only those objects have transformative value. His response to these worries is , 98 â€" Response DW: The indirect transformative value that biodiversity has â€" how it indirectly contributes to the sciences in particular â€" is mostly positive. Draw a distinction between incidental and systematic transformative value. Biodiversity has systematic transformative value. Here an object has incidental transformative value if it transforms demand values for only a few individuals and there is no systematic rationale for extending that transformation for other individuals or other objects. An object has systematic transformative value if it transforms demand values for more than a few individuals and there is a systematic rationale for extending the transformation for other individuals and objects. The argument above is obviously valid though I think there are reasons for being suspicious of the first and second premise. Note that not every transformation is such that we want to promote the transformative value of that object. So, we need to revise our account to mark the distinction between positive and negative transformative value and Sarkar recognizes this. We can define positive and negative transformative value as: Tâ€" An object has negative transformative value if it would alter a felt preference into some morally inferior felt preference. But now the question is what makes a felt preference morally superior to some other felt preference? Felt preferences are simply those desires or wants which can be satisfied by some specifiable experience of that individual or some state of affairs. A considered preference is any preference that can be similarly satisfied by some specifiable experience or state of affairs and is one an individual would have after careful reflection. What is careful reflection? Norton writes that careful reflection â€¦is taken to include a judgment that the desire or need is consistent with a rationally adopted worldview, which in turn includes a set of fully defended scientific theories, an attendant metaphysical framework interpreting those theories, and a set of rationally developed, fully defended aesthetic and moral ideals , 9; see Sarkar , for discussion. Likewise, we can revise the first premise as, If an object or process would alter a felt preference into some considered preference, then we should preserve that object or process. Now that we have clarified 1 , we must turn to 2. If there is some objective standard against which the satisfaction of preferences are determined to be morally valuable or not, then judgments of transformative value are dependent on such considerations. Moreover, if we antecedently disagree that the preferences that result from 5 transformation by biodiversity are morally superior ones, then claims of transformative value will be ineffective since they depend just on this point. That is, all parties could agree on the transformation but disagree as to whether the transformation is positive or negative. In environmental debates, there is an enormous amount of debate over what preferences are considered. If the value of biodiversity fundamentally rests on reshaping what it is to be human, biomimicry, the demise of western religions, and similar considerations then claims of transformative appear to be unpersuasive , 83 â€” Thus, claims of transformative value are effective only if we are already agree on what demand values themselves are considered. So, in conclusion, for us to determine whether 2 is true, we must have already settled the debate over whether environmentalist preferences are considered or not. Hence, transformative value attributions will be ineffective unless we have resolved these controversial moral matters. It is also worth noting that Sarkar is very critical of existing accounts of intrinsic value for environmental objects, and in my view, rightfully so , 45 â€" For example, suppose that we can articulate and defend the following: Something is intrinsically valuable just in case it would be valued under ideal conditions for its own sake. Thus, with much work, there may be space for a defensible account of intrinsic value. Now let me turn to issues concerning ecology and whether we are in an extinction crisis. Species Area Curves and Extinction Crises. However, one must properly characterize what such a crisis is before one can proceed. Sarkar adopts the convention that there is such a crisis if extinction rates are approximately those of any of the past mass extinctions. More precisely this amounts to the claim that there is a biodiversity crisis only if the extinction rate is at least twice the background rate. First, I suggest that this notion misses something crucially important. However, I will place that worry to the side. There are three general approaches to projecting extinction rates. First, there is the approach which utilizes species area models which we will consider. Third, there is an approach which uses IUCN data to estimate the probability of extinction as a function of time. Nevertheless, if we are to determine that we are in a biodiversity crisis, then we must determine three rates: If the projected rate is twice that of the background rate, then we have reason to believe we are in an extinction crisis. Let me now present one of the most common arguments for believing that we are in a biodiversity crisis which depends on the species area relation and of which Sarkar is skeptical , â€" ; â€" The species area relation has quite the legacy in ecology. Ecologists have long recognized that as area increases, so does the number of species in that area. The biogeographer Phillip Darlington surmised that with every tenfold increase in area, the number of species doubles. Ecologist Nicholas Gotelli claims that the species-area relationship is one of the few laws in ecology , We can provide a linear approximation to the species area curve at the point Soriginal, Aoriginal by following equation. Rates of tropical deforestation have been claimed to be in the range of 0. May, Lawton, and Stork suppose conservatively that there are 5 million species globally. Thus, our model and estimates project a minimal loss of 10, species per year and projects a maximal loss of 25, species per year. Finally, this is also equivalent to losing approximately 1 to 3 species per hour. Thus, it appears even with the uncertainty mentioned â€" 9 even if the background rate was off by a factor of and the low projection by May, Lawton, and Stork is right â€" we are in an extinction crisis. Why would one be skeptical of the above argument? It is crucial to note that there are a variety of uncertainties involved in our species-area argument. First, our model is idealized since we are assuming that loss of species is only a result of loss of area and thus we are ignoring many important causal factors related to extinction like exotic species, disease, overhunting, habitat fragmentation, edge effects, and habitat diversity. Second, we do not know exactly how much habitat we are losing per year. Third, we do not know how many species currently exist within an order of magnitude. There may be as many as 5 to 30 million extant species given our best evidence and our very poor knowledge of taxa other than mammals, birds, and some insects. Nevertheless, Sarkar believes that this type of argument is very problematic for other reasons: First, he correctly notes that there are data sets which the above the species area power function does not fit well , â€" Nevertheless, there are many, many data sets at a variety of spatial scales from areas in provinces, archipelagos, 10 and across provinces for which the power law model does fit well. Second, the mechanism which explains the species area relationship is very much debated McCoy and Connors , â€" For example, is it that larger areas per se can support more species? Is it that larger areas contain more habitats and greater number of habitats supports more species? Is it that larger areas are more likely to receive colonists than smaller areas? Finally, do larger areas contain a greater number of resources and thus larger areas support more species? Though the mechanism or mechanisms generating species area relationships â€" be it area per se, habitat diversity, passive sampling, or resource concentration â€" is of great importance the species area model can be silent on this since it represents this pattern independent of the mechanisms involved. Even if the species area relation does not explain why species diversity increases with area this does not invalidate the pattern itself. Third, some have argued that the since the equilibrium model of island biogeography has been seriously criticized as well as the SLOSS debates that resulted from it, we should be similarly skeptical of the species area model above. However, the species area relationship and the curves that model it are distinct from the theory of island biogeography. The latter attempted to explain such relationships by examining how rates of immigration to islands from the mainland and rates of extinction on islands lead to steady state diversities. Let me now consider a few additional points. Note that the species area model â€" contrary to some critics â€" applies to any type of area not just islands; it is the z-value which pertains to the specific type of area. The z-values as measured empirically actually depend on the scale at which one is considering. So, let us just consider the proportion of species remaining as determined by the proportion of area remaining. That is, given S and S are the new and old number of species respectively and A and A are the new and old amount of area respectively, then: However, in looking at global losses of species we should not be looking at archipelagos but provinces.

Chapter 4 : What are Environmental Ethics? - Conserve Energy Future

This book explores the epistemological and ethical issues at the foundations of environmental philosophy, emphasising the conservation of biodiversity. Sahota Sarkar criticises attempts to attribute intrinsic value to nature and defends an anthropocentric position on biodiversity conservation based on an untraditional concept of transformative value.

The Challenge of Environmental Ethics Suppose putting out natural fires, culling feral animals or destroying some individual members of overpopulated indigenous species is necessary for the protection of the integrity of a certain ecosystem. Will these actions be morally permissible or even required? Is it morally acceptable for farmers in non-industrial countries to practise slash and burn techniques to clear areas for agriculture? Consider a mining company which has performed open pit mining in some previously unspoiled area. Does the company have a moral obligation to restore the landform and surface ecology? And what is the value of a humanly restored environment compared with the originally natural environment? If that is wrong, is it simply because a sustainable environment is essential to present and future human well-being? These are among the questions investigated by environmental ethics. Some of them are specific questions faced by individuals in particular circumstances, while others are more global questions faced by groups and communities. Yet others are more abstract questions concerning the value and moral standing of the natural environment and its non-human components. The former is the value of things as means to further some other ends, whereas the latter is the value of things as ends in themselves regardless of whether they are also useful as means to other ends. For instance, certain fruits have instrumental value for bats who feed on them, since feeding on the fruits is a means to survival for the bats. However, it is not widely agreed that fruits have value as ends in themselves. We can likewise think of a person who teaches others as having instrumental value for those who want to acquire knowledge. Yet, in addition to any such value, it is normally said that a person, as a person, has intrinsic value, i. For another example, a certain wild plant may have instrumental value because it provides the ingredients for some medicine or as an aesthetic object for human observers. But if the plant also has some value in itself independently of its prospects for furthering some other ends such as human health, or the pleasure from aesthetic experience, then the plant also has intrinsic value. Many traditional western ethical perspectives, however, are anthropocentric or human-centered in that either they assign intrinsic value to human beings alone i. For example, Aristotle Politics, Bk. Generally, anthropocentric positions find it problematic to articulate what is wrong with the cruel treatment of non-human animals, except to the extent that such treatment may lead to bad consequences for human beings. From this standpoint, cruelty towards non-human animals would be instrumentally, rather than intrinsically, wrong. Likewise, anthropocentrism often recognizes some non-intrinsic wrongness of anthropogenic i. Such destruction might damage the well-being of human beings now and in the future, since our well-being is essentially dependent on a sustainable environment see Passmore ; Bookchin ; Norton et al. When environmental ethics emerged as a new sub-discipline of philosophy in the early s, it did so by posing a challenge to traditional anthropocentrism. In the first place, it questioned the assumed moral superiority of human beings to members of other species on earth. In the second place, it investigated the possibility of rational arguments for assigning intrinsic value to the natural environment and its non-human contents. It should be noted, however, that some theorists working in the field see no need to develop new, non-anthropocentric theories. Instead, they advocate what may be called enlightened anthropocentrism or, perhaps more appropriately called, prudential anthropocentrism. Briefly, this is the view that all the moral duties we have towards the environment are derived from our direct duties to its human inhabitants. Enlightened anthropocentrism, they argue, is sufficient for that practical purpose, and perhaps even more effective in delivering pragmatic outcomes, in terms of policy-making, than non-anthropocentric theories given the theoretical burden on the latter to provide sound arguments for its more radical view that the non-human environment has intrinsic value cf. Norton , de Shalit , Light and Katz Furthermore, some prudential anthropocentrists may hold what might be called cynical anthropocentrism, which says that we have a higher-level anthropocentric reason to be non-anthropocentric in our day-to-day thinking. Suppose that a day-to-day non-anthropocentrist tends to act more benignly towards the non-human environment on which human well-being depends. This would provide reason for encouraging non-anthropocentric thinking, even to those who find the idea of non-anthropocentric intrinsic value hard to swallow. The position can be structurally compared to some indirect form of consequentialism and may attract parallel critiques see Henry Sidgwick on utilitarianism and esoteric morality, and Bernard Williams on indirect utilitarianism. The Early Development of Environmental Ethics Although nature was the focus of much nineteenth and twentieth century philosophy, contemporary environmental ethics only emerged as an academic discipline in the s. The questioning and rethinking of the relationship of human beings with the natural environment over the last thirty years reflected an already widespread perception in the s that the late twentieth century faced a human population explosion as well as a serious environmental crisis. Commercial farming practices aimed at maximizing crop yields and profits, Carson speculates, are capable of impacting simultaneously on environmental and public health. In a much cited essay White on the historical roots of the environmental crisis, historian Lynn White argued that the main strands of Judeo-Christian thinking had encouraged the overexploitation of nature by maintaining the superiority of humans over all other forms of life on earth, and by depicting all of nature as created for the use of humans. Central to the rationale for his thesis were the works of the Church Fathers and The Bible itself, supporting the anthropocentric perspective that humans are the only things that matter on Earth. Consequently, they may utilize and consume everything else to their advantage without any injustice. For example, Genesis 1: And God blessed them, and God said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it: According to White, the Judeo-Christian idea that humans are created in the image of the transcendent supernatural God, who is radically separate from nature, also by extension radically separates humans themselves from nature. This ideology further opened the way for untrammeled exploitation of nature. Clearly, without technology and science, the environmental extremes to which we are now exposed would probably not be realized. Nevertheless, White argued that some minority traditions within Christianity e. Around the same time, the Stanford ecologists Paul and Anne Ehrlich warned in The Population Bomb Ehrlich that the growth of human population threatened the viability of planetary life-support systems. Here, plain to see, was a living, shining planet voyaging through space and shared by all of humanity, a precious vessel vulnerable to pollution and to the overuse of its limited capacities. In a team of researchers at MIT led by Dennis Meadows published the Limits to Growth study, a work that summed up in many ways the emerging concerns of the previous decade and the sense of vulnerability triggered by the view of the earth from space. In the commentary to the study, the researchers wrote: We affirm finally that any deliberate attempt to reach a rational and enduring state of equilibrium by planned measures, rather than by chance or catastrophe, must ultimately be founded on a basic change of values and goals at individual, national and world levels. The new field emerged almost simultaneously in three countriesâ€”the United States, Australia, and Norway. In the first two of these countries, direction and inspiration largely came from the earlier twentieth century American literature of the environment. That land is a community is the basic concept of ecology, but that land is to be loved and respected is an extension of ethics. It is wrong when it tends otherwise. His views therefore presented a challenge and opportunity for moral theorists: The land ethic sketched by Leopold, attempting to extend our moral concern to cover the natural environment and its non-human contents, was drawn on explicitly by the Australian philosopher Richard Routley later Sylvan. According to Routley cf. From the human-chauvinistic or absolutely anthropocentric perspective, the last person would do nothing morally wrong, since his or her destructive act in question would not cause any damage to the interest and well-being of humans, who would by then have disappeared. Nevertheless, Routley points out that there is a moral intuition that the imagined last acts would be morally wrong. An explanation for this judgment, he argued, is that those non-human objects in the environment, whose destruction is ensured by the last person or last people, have intrinsic value, a kind of value independent of their usefulness for humans. From his critique, Routley concluded that the main approaches in traditional western moral thinking were unable to allow the recognition that natural things have intrinsic value, and that the tradition required overhaul of a significant kind. It would be wrong, he maintained, to eliminate a rare butterfly species simply to increase the monetary value of specimens already held by collectors. Species, Rolston went on to argue, are intrinsically valuable and are usually more valuable than individual specimens, since the loss of a species is a loss of genetic possibilities and the deliberate destruction of a species would show disrespect for the very biological processes which make possible the emergence of individual living things also see Rolston , Ch Meanwhile, the work of Christopher Stone a professor of law at the University of Southern California had become widely discussed. Stone proposed that trees and other natural objects should have at least the same standing in law as corporations. This suggestion was inspired by a particular case in which the Sierra Club had mounted a challenge against the permit granted by the U. Forest Service to Walt Disney Enterprises for surveys preparatory to the development of the Mineral King Valley, which was at the time a relatively remote game refuge, but not designated as a national park or protected wilderness area. The Disney proposal was to develop a major resort complex serving visitors daily to be accessed by a purpose-built highway through Sequoia National Park. The Sierra Club, as a body with a general concern for wilderness conservation, challenged the development on the grounds that the valley should be kept in its original state for its own sake. Stone reasoned that if trees, forests and mountains could be given standing in law then they could be represented in their own right in the courts by groups such as the Sierra Club. Moreover, like any other legal person, these natural things could become beneficiaries of compensation if it could be shown that they had suffered compensatable injury through human activity. When the case went to the U. Supreme Court, it was determined by a narrow majority that the Sierra Club did not meet the condition for bringing a case to court, for the Club was unable and unwilling to prove the likelihood of injury to the interest of the Club or its members. Only items that have interests, Feinberg argued, can be regarded as having legal standing and, likewise, moral standing. For it is interests which are capable of being represented in legal proceedings and moral debates. This same point would also seem to apply to political debates. Granted that some animals have interests that can be represented in this way, would it also make sense to speak of trees, forests, rivers, barnacles, or termites as having interests of a morally relevant kind? This issue was hotly contested in the years that followed. Skeptical of the prospects for any radically new ethic, Passmore cautioned that traditions of thought could not be abruptly overhauled. Any change in attitudes to our natural surroundings which stood the chance of widespread acceptance, he argued, would have to resonate and have some continuities with the very tradition which had legitimized our destructive practices. The confluence of ethical, political and legal debates about the environment, the emergence of philosophies to underpin animal rights activism and the puzzles over whether an environmental ethic would be something new rather than a modification or extension of existing ethical theories were reflected in wider social and political movements. It is not clear, however, that collectivist or communist countries do any better in terms of their environmental record see Dominick All three shared a passion for the great mountains. The deep ecologist respects this intrinsic value, taking care, for example, when walking on the mountainside not to cause unnecessary damage to the plants. To make such a separation not only leads to selfishness towards other people, but also induces human selfishness towards nature. The identity of a living thing is essentially constituted by its relations to other things in the world, especially its ecological relations to other living things. If people conceptualise themselves and the world in relational terms, the deep ecologists argue, then people will take better care of nature and the world in general. The idea is, briefly, that by identifying with nature I can enlarge the boundaries of the self beyond my skin. To respect and to care for my Self is also to respect and to care for the natural environment, which is actually part of me and with which I should identify. Grey , Taylor and Zimmerman It also remains unclear in what sense rivers, mountains and forests can be regarded as possessors of any kind of interests. Biospheric egalitarianism was modified in the s to the weaker claim that the flourishing of both human and non-human life have value in themselves. The platform was conceived as establishing a middle ground, between underlying philosophical orientations, whether Christian, Buddhist, Daoist, process philosophy, or whatever, and the practical principles for action in specific situations, principles generated from the underlying philosophies. Thus the deep ecological movement became explicitly pluralist see Brennan ; c. These "relationalist" developments of deep ecology are, however, criticized by some feminist theorists. The idea of nature as part of oneself, one might argue, could justify the continued exploitation of nature instead. For one is presumably more entitled to treat oneself in whatever ways one likes than to treat another independent agent in whatever ways one likes.

Chapter 5 : Biodiversity and Environmental Philosophy: An Introduction by Sahotra Sarkar

Biodiversity and Environmental Philosophy has 2 ratings and 0 reviews. This book explores the epistemological and ethical issues at the foundations of en.

Contemporary issues[edit] Modern issues within environmental philosophy include but are not restricted to the concerns of environmental activism as well as the questions raised by environmental science and technology. These include issues related to the depletion of finite resources and other harmful and permanent effects brought on to the environment by humans, as well as the ethical and practical problems raised by philosophies and practices of environmental conservation, restoration, and policy in general. A haunting question that has settled on the minds of modern environmental philosophers is "Do rivers have rights? Modern history[edit] Environmental Philosophy re-emerged as a major social movement in the s. Since then its areas of concern have expanded significantly. A major debate arose in the s and 80s was that of whether nature has intrinsic value in itself independent of human values or whether its value is merely instrumental, with ecocentric or deep ecology approaches emerging on the one hand versus consequentialist or pragmatist anthropocentric approaches on the other. Since then, readings of environmental history and discourse have become more critical and refined. In this ongoing debate, a diversity of dissenting voices have emerged from different cultures across the globe questioning the dominance of Western assumptions, helping to transform the field. Environmental aesthetics, design and restoration have emerged as important intersecting disciplines that keep shifting the boundaries of environmental thought, as have the science of climate change and biodiversity and the ethical, political and epistemological questions they raise. Today, environmental philosophy is a burgeoning and increasingly relevant field. Deep ecology movement[edit] Main article: The well-being and flourishing of human and non-human life have value. Richness and diversity of life forms contribute to the realization of these values and are also values in themselves. Humans have no right to reduce this richness and diversity except to satisfy vital needs. The flourishing of human life and cultures is compatible with a substantial decrease in the human population. Present human interference with the nonhuman world is excessive, and the situation is rapidly worsening. Policies must therefore be changed. These policies affect basic economic, technological, and ideological structures. The resulting state of affairs will be deeply different from the present. The ideological change is mainly that of appreciating life quality dwelling in situations of inherent value , rather than adhering to an increasingly higher standard of living. There will be a profound awareness of the difference between big and great. Those who subscribe to the foregoing points have an obligation directly or indirectly to try to implement the necessary changes.

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Chapter 6 : Biodiversity (Stanford Encyclopedia of Philosophy)

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Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press. Includes bibliographical references and index. Biological diversity - Philosophy. Oksanen, Markku, II. Occurrence of the term "biodiversity" in biological abstracts page 28 1. Types of biodiversity values 38 1. Interacting roles of science and society in the development of the concept of biodiversity and in biodiversity conservation 44 4. The number of marine families as represented in the fossil record 4. Range of biodiversity definitions according to scope and emphasis on particular elements and attributes 30 1. Hierarchical structure of biodiversity components 31 1. Examples of biodiversity measures classified by hierarchical level and aspect assessed by the measure 36 Three attitudes toward the introduction and reintroduction of species Conceptions of the nature and value of biodiversity and principles of evaluation: He teaches Environmental Ethics and related subjects at several institutions. He is coordinator of education in Human Ecology. Environment, Technology and Society He is currently working on a book on biodiversity and ethics. Robin Attfield is Professor of Philosophy at Cardiff University, where he has taught philosophy since An Overview for the Twenty-First Century. Dieter Birnbacher is Professor of Philosophy at Heinrich Heine Univer- sity, Dusseldorf, Germany, where his main areas of research and teaching are ethics, applied ethics, and anthropology. He has published a number of books, among them books on Wittgenstein, Schopenhauer, ethics, environmental xi List of Contributors ethics, medical ethics, and the theory of action. His research interests include the ecology of herbivory and wildfires in northern boreal forests, Finland. He has published a number of papers on the subject and presented at international conferences on ecology. Her research interests include spatial population dynamics, scales of environmental varia- tion, and the role of metaphor and models in biology. Christian Gamborg has a Ph. His research interests include ethics, sustain- ability, and biodiversity in relation to land use, forests, and natural resource management. Yrjd Haila earned his Ph. He has published articles on bird ecology, habitat fragmentation, conservation, social and philosophical dimensions of ecology and environmental issues, and environmental policy. Currently, his research interests are focused on wildfire ecology in boreal forests, Finland, and the historical ecology of ancient woodlands xii List of Contributors in the United Kingdom and other European countries. He has published a number of papers in these fields and has presented his findings at interna- tional conferences. Her main research interests are the relation- ship between biodiversity and ecosystem functioning, plant-herbivore inter- actions, and meta-analysis and research synthesis. She has contributed to a range of ecological journals including Ecology, Oecologia, Oikos, Ecology Letters, and Evolutionary Ecology and to the bookBiodiversity and Ecosystem Functioning: Synthesis and Perspectives New York: Oxford University Press, Interests include en- vironmental philosophy and philosophy of technology, focusing on the onto- logical distinction between nature and artefacts. Deep Science and Deep Technology London: He has an M. Current projects include "objectivity and individ- ualism in environmental ethics" and "biodiversity vs. His main research interests are environmental philosophy and environmental po- litical theory. His articles have been published in journals such as Ambio and Environmental Values and in anthologies on environmental ethics and green political theory. His research has included work on bioethics, environmen- tal ethics, social philosophy, and history of philosophy. Brill, edited with L. Hertzberg ; Genes and Morality: Rodopi, edited with V. Kate Rawles was a lecturer in environmental philosophy at Lancaster Univer- sity, United Kingdom, for ten years, specializing in environmental ethics, eth- ical issues in sustainable development, and animal welfare. She left Lancaster in January to further pursue these practical aims and now works entirely freelance as a lecturer and consultant. He began his teaching career at the University of Guelph, where he taught for thirty years. He is a Fellow of the Royal Society of Canada. He writes on the nature of science, in particular evolutionary biology, and the nature of value. A list of his most recent books includes Can a Darwinian Be a Christian? Is Evolution a Social Construction? The

Concept of Progress in Evolutionary Biology. Helena Siipi is a graduate student in philosophy at the University of Turku, Finland. Her research interests include bioethics, environmental philosophy, moral philosophy, and philosophy of action. She is preparing a doctoral thesis on bioethical arguments appealing to naturalness, unnaturalness, and artificiality. The emergence of the term from the discipline of conservation biology is well documented in current history see Takacs It is a neolo- gism, dating back to when Dr. Rosen coined it while planning a conference that aimed to bring together what was known about the state of biological diversity on Earth Wilson , vi. So, biodiversity is a contraction of biological diversity. A rough idea of biological diversity, and thereby of biodiversity, has ex- isted in the human mind ever since evolution endowed our hominid ancestors in the phylogenetic tree with adequate cognitive abilities, in particular that of classification. Therefore, any attempt to definitively date when humans first conceived of nature as diverse is doomed to fail: Other scholars reject these evolutionary accounts of our cognitive faculties and think of them as acquired and culturally trans- mitted e. To utilize natural diversity, we have to categorize things; to cate- gorize, we need the criteria of similarity and difference, by means of which we can distinguish edible types from nonedible, useful types from useless, dangerous types from harmless and so on. As Wilson ,40 puts it, "In all cultures, taxonomic classification means survival. Although the primary motive for categorization might have been practical, it has also served many other purposes, as people distinguish holy or sacred types from profane and beautiful types from ugly, and so on. These categories comprise the cultural dimension of human existence and it is by no means obvious in what way, if any, they are related to the human evolutionary process. The diversity of life is evident for us at the level of common-sense per- ception of reality. Thus, biological reality does not consist of unidentifiable objects. Kim Sterelny , has used the term "phenomenological species," as distinct from "evolutionary species," to point out that living or- ganisms have such salient properties that for us the living world contains "identifiable clusters of organisms. To know an entity is to know it according to its general properties that are denoted by generic terms, such as species membership; thus, to know something is to be informed enough to classify it. The notion of biodiversity, particularly in folk biology, is a mid-level concept that applies to organizing the apparent re- semblance and difference of things. The notion makes sense only within an apprehension of the world that neither regards each individual component of reality as "bare particular" nor the system of nature as a tightly functioning whole, in which any component, or sets of components, cannot be individid- uated. In brief, biodiversity, both as a vernacular and a scientific concept, is about the classification of perceptible things and phenomena, especially species. In illiterate communities, folk-biological knowl- edge is delivered from one generation to another through oral tradition. In literate communities the means of knowledge dissemination are more varied for obvious reasons. Western philosophers and scientists have not, in gen- eral, acknowledged these "common-sense" achievements, but during the last decade or so, some signs of change have become obvious, and the concept of biodiversity has played a vital role in the course of change. On the other hand, it has been noticed that the folk-biological classifications were at times done so well that they coincided with the scientific knowledge see Medin and Atran , although the reasons for classifying may have fallen short of the standards of biological science. Views on the philosophy of biology are also changing and such stances as pluralistic realism or "promiscuous realism" have gained support Dupre , This may imply a certain degree of tolerance and greater understanding of folk-biological classification cf. On the negative side of folk-biological classification, its evaluative dimension is highly selective and typically it manifests many other values and beliefs that are susceptible both from the scientific and conservation points of view. But scientific classification also serves many utilitarian purposes. There are traces of both of these tendencies in the early modern age of botany Tudge , 21 and they are discussed in the article on Rousseau, for example see Arler, this volume. Scientific classification rests, however, on a very peculiar idea, that of fully stretched self-criticism, according to which the apparent similarity between living beings can turn out to be illusory and virtually all systems of classification are fallible: The replacement of an old belief by a new one because of the discov- ery of these essential differences is usually interpreted as scientific progress. Despite the fact that the idea of scientific progress and systematic scrutiny can be incongruent with the most conservative systems of folk biology, there 3 Markku Oksanen is no point in deeming folk-biological systems of belief as constant. Both scientific and folk-biological systems of belief are more or less flexible. The pre-Socratic philosophers, for instance, assumed that they could identify some primitive element, or elements, of which the world was built. The speculative metaphysical investigation of nature evolved into natural history and into the science of biology and ecology by the nineteenth century. It is telling that in , just fifteen years after the invention of the term biodiversity, a five-volume Encyclopedia of Biodiversity was published. Moreover, thousands of scientific articles, as counted by Julia Koricheva and Helena Siipi in their contribution "The Phenomenon of Biodiversity," have been published. Some of these have been published in newly established jour- nals that include "biodiversity" in their titles. Other large-scale projects are on their way to being accomplished, such as the enlargement of the above- mentioned Encyclopedia of Biodiversity to an electronic version and the en- terprise to make an inventory of all species on Earth. Bio- diversity has become a buzzword, that is, a currently fashionable expression or a catchword. As is the case with buzzwords generally, biodiversity has also been given innumerable definitions, some of which have grown out of the original context, decreasing its usability. In the opening chapter Koricheva and Siipi provide a survey of this use of the focal concept and analyze how the meaning given to it implies variation in conservation policies. By coining the new concept, the conservation biologists had a mission in mind: Wilson and many others have labeled it see Haila, in this volume. Thus, biodiversity, the neologism, is a value-laden notion that manifests both the sense of wonder before diversity and the worry over its loss. It was the rapid, mainly anthropogenic, decline of biological diversity that induced the U.

Chapter 7 : Philosophy and biodiversity | Markku Oksanen - calendrierdelascience.com

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Biodiversity and Environmental Philosophy: An Introduction, Cambridge University Press, , pp. An Introduction hereafter, BEP will likely confound readers expecting a user-friendly introduction to topics and issues in environmental philosophy. The book is better described as a high-level introduction to normative and conceptual issues in the science of conservation biology -- indeed, the first such book written by a philosopher of science. The normative issues in question have considerable overlap with normative issues in environmental philosophy, and the first half of the book is devoted to topics familiar to environmental philosophers anthropocentrism vs. But the second half of the book is focused almost entirely on epistemological and conceptual issues in conservation biology, and more specifically on a tradition of conservation biology dubbed "systematic conservation planning". Theoretical work in this tradition is often highly formal, focusing on decision-theoretic models and algorithms for solving multi-criteria optimization problems. Consider, for example, this sentence from Chapter 6, which expresses one form of the so-called "place prioritization" problem in systematic conservation planning: On the other hand, I strongly recommend the book to anyone interested in the history and philosophy of conservation biology and the relation of this field to the traditional problems of environmental philosophy. It will be of particular value to philosophers of biology and ecology, and environmental philosophers who pay close attention to developments in ecology and conservation science. As noted, the first half of BEP deals primarily with the normative foundations of conservation biology, while the second half addresses scientific and conceptual issues in biodiversity science and systematic conservation planning. I suspect that commentary from environmental philosophers will focus on one or more of the following theses advanced in the first half of the book: Commentary from philosophers of biology and ecology, on the other hand, will likely focus on one or more of the following theses advanced in the second half of the book: Every one of these theses is contentious from one theoretical perspective or another. For students of conservation science interested in systematic methods for biodiversity conservation, BEP is the most accessible introduction to the field yet published. The motivation for this conclusion is straightforward enough. The main challenges of conservation biology -- as conceived within the framework of systematic conservation planning and landscape management -- are primarily problems of human decision-making under conditions of uncertainty, rather than traditional problems of scientific theorizing and testing of empirical hypotheses. These decision problems require input from the natural sciences of course, but also from the social sciences, formal decision theory, and in formulating and prioritizing conservation goals, from normative ethics as well. As Sarkar describes the methodology of systematic conservation planning pp. If we accept the orthodox conception of ecology as a branch of the natural biological sciences aimed at describing, explaining and predicting patterns in the distribution and abundance of organisms, then it is simply a mistake to view conservation biology as a subset of ecology. Conservation biology is a multidisciplinary transdisciplinary? This line of reasoning rests entirely on accepting the orthodox conception of ecology as a branch of the natural, biological sciences. There is, however, a long tradition of ecological thought that conceives ecology in a more expansive mode, as a field that properly spans both the natural and social sciences e. Taylor , Haskell , Friedrichs This more expansive tradition of ecological science is motivated in part by the belief that ecology is a science of organism-environment relations that properly includes the study of human-environment relations e. On this view, human ecology is a legitimate branch of ecology, and all the various branches of conservation science, including conservation biology, can be conceived as problems for applied human ecology. Conservation biology may be a multidisciplinary science, but it falls within the domain of ecology because ecology is in reality a multidisciplinary science of even broader scope. Now, Sarkar might grant the in-principle conceptual point about the multidisciplinary status of ecology, but nevertheless still have good reason to resist promoting conservation biology as an applied branch of ecology. There is a growing appreciation among conservation biologists that, despite the early manifestos that called for the creation of a truly multidisciplinary conservation biology e. To sum up, while there may be no in-principle conceptual barrier to viewing conservation biology as entirely within the domain of ecology, there may nevertheless be good pragmatic reasons for promoting conservation biology as a multidisciplinary field of which ecology is viewed as just one disciplinary component. This reasoning is persuasive as far as it goes, but I would add that there can be pragmatic reasons for promoting the more expansive conception of ecology as well see deLaplante Generally speaking, the needs of multidisciplinary science are not well served by disciplinary and professional traditions that draw sharp boundaries between the natural and social sciences and the humanities. There are many workers in ecologically oriented disciplines within the social sciences e. The chances of productive engagement between workers in these otherwise segregated disciplines may be improved by encouraging a disciplinary culture that views all efforts to study human-environment relations as part of a common intellectual project. An Introduction is the first book by a philosopher of science on the conceptual foundations of conservation biology. The book covers an unusually broad set of topics, from normative foundations of conservation ethics to technical issues in algorithmic procedures for systematic conservation planning. Most readers will come to the book with a background either in environmental philosopher or in the philosophy and science of conservation biology; either set of readers will likely encounter patches that are rough going. But the book is rich and rewards repeated reading. References Adams, Charles C. Sociological Perspectives 37 1: Biology and Philosophy Kinzig, and Paul Ryan. Introduction to the Special Issue. Ecology and Society 11 1:

Chapter 8 : A Philosophy for Biodiversity? | jay odenbaugh - calendrierdelascience.com

Biodiversity and Environmental Philosophy An Introduction Thisbookexplorestheepistemologicalandethicalissuesatthefoundations of environmental philosophy, emphasizing.

Environmental ethics is a branch of ethics that studies the relation of human beings and the environment and how ethics play a role in this. Environmental ethics believe that humans are a part of society as well as other living creatures, which includes plants and animals. These items are a very important part of the world and are considered to be a functional part of human life. Thus, it is essential that every human being respect and honor this and use morals and ethics when dealing with these creatures. It exerts influence on a large range of disciplines including environmental law, environmental sociology, ecotheology, ecological economics, ecology and environmental geography. With environmental ethics, you can ensure that you are doing your part to keep the environment safe and protected. Every time that a tree is cut down to make a home or other resources are used we are using natural resources that are becoming more and more sparse to find. It is essential that you do your part to keep the environment protected and free from danger. It was Earth Day in that helped to develop environmental ethics in the US, and soon thereafter the same ethics were developed in other countries including Canada and North America. This is important because the ethics of the environment are of major concern these days. What Causes Environmental Pollution? The acts of humans lead to environmental pollution. The stronger demand for resources is also a factor that contributes to the problem as we all need food and shelter. When these things are so desired and need the natural balance of the environment is disturbed. Engineering developments are resulting in resource depletion and environmental destruction. There are several environmental issues that have created havoc on our environment and human life. If ignored today, these ill effects are sure to curb human existence in the near future. Human beings are considered to be the most intelligent species living on earth. This could be why it is the only species on earth which has civilized itself over the decades to a large extent. Today, human beings boast as being superior to all other animals but what is the use of such great intelligence when environment ethics are not followed? Using fossil fuels erratically, industrialization, pollution, disturbing ecological balance, all these are attributable to human activities. Just because we are in possession of all of these natural resources does not mean that we can use those resources in any manner in which we choose without keeping anything for the future generations. Environmental Ethics and Environmental Philosophy Environment ethics has produced around environmental philosophy. Many scientists have taken up the belief of philosophical aspect of environmental hazards thus giving rise to environment ethics. Currently environment ethics has become the major concern for the mankind. Industrialization has given way to pollution and ecological imbalance. If an industry is causing such problem, it is not only the duty of that industry but all the human being to make up for the losses. But how long an artificial and restored environment will able to sustain? Will it be able to take the place of the natural resources? Environmentalists are trying to find answers to these difficult questions and all these together are termed as environment ethics. It is the responsibility of all to ensure that environmental ethics are being met. It is somewhat difficult to make adjustments that are necessary to ensure that you are following all environmental ethics. Ethics plays an important role in our society today, and environmental ethics and business ethics must be considered. Both oil and coal are bad, but not only for the environment, but for all living creatures, including plants and animals. Both are highly toxic in their natural raw state. They pollute the air and ground and water, and whether or not they are helping to create these natural disasters should be irrelevant. They are both finite, and will not last forever, and the sooner we rid ourselves of the need for these two demons, the better. Most of the worlds ills are derived from both of these, with oil spills , mining accidents, fires, and now climate change and global warming. Ensure that you are doing your part and following all environmental ethics that are out there.

Chapter 9 : Ecology and Society: Philosophical Issues in Ecology: Recent Trends and Future Directions

volume is an apt successor to his Biodiversity and Environmental Philosophy (Sarkar,) since it is more accessible to both stu- dents and those outside the philosophy of biology and the philos-.