1. What is Environmental Philosophy?

Environmental philosophy involves a critical analysis of how we conceptualize and interact with the environment. This discipline also attempts to identify rationally defensible principles of good conduct with regard to other species and ecological systems. Of course, environmental philosophy is not alone in these pursuits. A number of other disciplines including ecology, conservation biology, landscape architecture, and even some branches of economics explore our relationship to biotic systems. Many other fields are likewise interested in sustainably or ecological stewardship. How then does philosophy differ from other disciplines? What if anything is unique about a *philosophical* approach to the environment?

I think that, firstly, philosophy is unique in its emphasis on foundational claims. A foundational claim is one that is usually presupposed by some discipline or practice. For example, in ecology it is often taken for granted that ecosystems maintain some degree of stability over time. A foundational assumption of landscape architecture is that the application of design principles to the environment can impact human health and happiness. A foundational assumption of neoclassical economics is that people behave only in ways that maximize self-interest. Occasionally, such assumptions are questioned from within a discipline. This tends to occur whenever a new idea or discovery challenges the status quo. However, for the most part, the daily grind of a discipline involves taking its fundamental claims at face value. This attitude is understandable. Making progress in a discipline would be impossible if foundational assumptions were constantly under scrutiny. However, to leave those claims entirely unexamined is a recipe for perpetuating falsehood.

Doing philosophy involves questioning foundational claims. By “questioning” I mean that philosophers tend to ask for reasons why a given claim ought to be accepted as true or plausible. This activity is by no means restricted to the professional philosopher. However, most academic philosophers are trained in a specific method that allows foundational claims to be examined in a fairly systematic fashion.

This brings me to a second respect in which philosophy differs from other disciplines. In asking whether it is reasonable to accept a given claim we require some way of assessing
reasonableness. To do this, many philosophers rely on the method of argument reconstruction and analysis. For simplicity, we can think of this method as consisting of two phases. The first phase, argument reconstruction, involves explicitly representing each step in a chain of reasoning. Individual steps are called the premises of an argument, and the core claim that they aim to support is called the conclusion.

Argument reconstruction is partly an exercise in interpretation. Usually there is some person (e.g. an author) whose argument we are attempting to reconstruct. Note, however, that a good reconstruction does not involve simply repeating a person’s words verbatim. It is often necessary to exercise charity when reconstructing an argument.

Suppose, for example, that you were to ask some economist why she assumes that people act only out of self-interest. She might respond: “that’s what most economists believe.” This response might lead you to develop the following reconstruction of her argument:

Premise 1: Any claim that is believed by the majority of economists is probably true.
Premise 2: Most economists believe that humans acts exclusively out of self-interest.

Conclusion: It is probably true that humans act exclusively out of self-interest.

This reconstruction is uncharitable because we can easily come up with counter-examples to Premise 1. That is, we can easily think of reasons why one shouldn’t accept a claim simply because it is the majority-held opinion. What we seek is some reason why the majority of economists ought to accept it. A more charitable reconstruction might offer the following premise in place of Premise 1:

Premise 1*) We should believe any claim that has allowed economists to generate successful predictions.

My thinking here is that our imaginary economist might be indirectly relying on something like Premise 1b when she says that something is probably true if most economists believe it. What this person might really mean (or what they perhaps ought to mean) is that a belief is true if it helps to explain or predict the observations in this discipline. Perhaps you think I am being overly charitable here, but it is usually better to err in that direction.
The next phase of our reconstruction is to make adjustments to the rest of the reconstruction, for example, by rephrasing Premise 2:

Premise 2*) The claim that humans act exclusively out of self-interest has allowed economists to make many successful predictions. These two premises can now be used to derive the same conclusion (C) that was identified earlier. This would be a much stronger argument, but certainly not one that is beyond question. As we shall discuss in later lectures, predictive success alone is not an adequate indication of truth. Likewise, there are arguably as many occasions when the assumption of self-interest has generated a false prediction. The current thing to note is that by adhering to a principle of charity our argument reconstruction becomes more informative. Instead of exploring a superficial reason for accepting the conclusion, we end up considering a reason that is potentially more interesting.

The second phase after reconstruction is argument analysis. Having represented each step in a chain of reasoning we ask whether the premises adequately support the conclusion. On some occasions it is possible to rule out an argument simply because the premises would fail to support the conclusion, regardless of whether they are true. We will encounter arguments like this at later stages in this course. For the moment we can turn to the more difficult aspect of argument analysis: focussing on just one premise at a time we consider its truth or plausibility. This can be challenging when we don’t have adequate background knowledge to assess a premise. In those cases it might be necessary to defer judgment about the strength of an argument. But, in many cases, is possible to assess the plausibility of a premise. For example, you might appeal to your own motives to assess the claim that people always act out of self-interest. Or, you might even survey the available philosophical or scientific literature on this subject.

I will have much more to say about the method of argument reconstruction and analysis as this course proceeds. In the meantime, I want to return to the suggestion that philosophy tends to focus on foundational questions. To get a sense of what this course will be about, it is perhaps helpful to illustrate this point with an example.
2. Much ado about a marmot?

A foundational assumption shared by most environmentalists is that the extinction of any species is a bad thing. This attitude reflects a popular tendency to view species as inherently valuable regardless of their economic or other practical benefit to humans. Even when it comes to irritating or harmful species (like mosquitos or ticks), environmentalists are often reluctant to call for their complete annihilation. We are sometimes reminded that extinction is forever – once a species is gone cannot be replaced. Part of the reason for valuing species, on this view, is because they each possess a unique value unto themselves.

One of my favourite illustrations of this attitude involves efforts by the Marmot Recovery Foundation to rescue the Vancouver Island Marmot (*Marmota vancouverensis*) from the brink of extinction. Sometimes described as Canada’s panda, this species is perhaps the most endangered mammal in our country. In 2004, the entire species was thought to consist of just 30 individuals. More recent (and probably more accurate) estimates place the population at roughly 200-300 marmots. Few people have encountered one of these specimens in the wild. Marmots inhabit steep and foreboding alpine slopes. They spend roughly eight months per year in hibernation. Even when they are active, marmots are typically shy creatures that quickly retreat into their burrows at the first hint of danger.

Despite its elusiveness this species has received considerable attention from conservationists. The Canadian Marmot Recovery Foundation receives healthy private donations and considerable public funding to restore this species. Countless hours of scientific labour have been invested in the Marmot Recovery Plan (see [www.marmots.org](http://www.marmots.org)). Perhaps its most ambitious undertaking to date involved a captive breeding program. Between 1997 and 2004, approximately 140 individuals were removed from the wild and transported to zoos in

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1 Recent developments in genetic engineering raise the possibility of “de-extinction” through the implantation of genetic material from an extinct organism into some living relative. The resurrection of woolly mammoths using elephant embryos is a popular example. Many environmentalists oppose this technology, somewhat ironically, on the grounds that it will lead society at large to take the threat of extinction less seriously. One might respond that if extinction does become reversible, then perhaps we should see it as a less important threat. Regardless of where one stands on this issue, it illustrates the more general point that the loss of a species is generally seen as unfortunate or even tragic.
Calgary and Toronto. Breeding took place with the assistance of trained experts and their small armies of volunteers. Marmot offspring were then transported back to Vancouver Island, where they entered the Tony Barrett Marmot Recovery Center. At this specialized facility juvenile marmots were introduced into the wild under careful supervision, away from predators. Given all this time and effort, there could be little doubt that Canadians’ care about marmot extinction. But are these efforts reasonable?

Let’s examine some of the foundational assumptions at the heart of this project. One thing that is generally taken for granted is that such extreme efforts are justified because they are directed at a distinct species. To put this into context, it is important to note that other species of marmot are anything but endangered. Nearby on mainland British Columbia, just 150 kilometers to the east, mountain slopes are teeming with two closely related species. The Hoary Marmot (Marmota caligata) inhabits high altitude environments. This species is so abundant that the famous ski resort, Whistler Village, was named after its familiar warning call. Another species, the Yellow Bellied Marmot (Marmota flaviventris), inhabits lower slopes and grasslands further to the east. Advocates for conservation of the Vancouver Island Marmot are quick to point out, however, that these are distinct species. Occasionally, advocates for marmot conservation will add a further reason for why this species is special: both Hoary and Yellow Bellied marmots are found in the United States. The Vancouver Island Marmot, by contrast, is the only marmot found exclusively in our proud nation.

Thinking philosophically, at least three related questions come to mind. First, what exactly does it mean to designate this population as a distinct species? Second, why should people care if a species goes extinct? Finally, is it reasonable to invest significant time and energy in species conservation?

Starting with the first question, some students might be surprised to learn that biologists disagree over the correct definition of “species.” Perhaps the most popular definition is the so called “biological” species concept (BSC). It claims that two populations qualify as distinct species just in case they are incapable of interbreeding. Critics of this proposal note that the BSC is inherently vague. What does it mean for two populations to be capable of interbreeding? Does it mean that they rarely encounter one another in the wild? This way of
counting species seems arbitrary since populations can become isolated for relatively brief periods of time, often due to temporary changes in geography or climate. Alternatively, we might distinguish species according to their capacity to produce offspring under some more ideal scenario, such as in captivity. The problem with this definition is that making this assessment is often impractical. Rarely do we have the opportunity to figure out whether two populations are capable of interbreeding. And when we do, the results can be surprising. For example, Lions and African tigers are capable of producing offspring in captivity, albeit sterile ones. Most people would be reluctant to regard Lions and Tigers a single species, even if their offspring were capable of reproducing. Perhaps a deeper problem with the BSC is that it simply overlooks the majority of organisms on earth, most of which are asexual.

Similar problems can be raised with all of the alternative species definitions besides the BSC. This predicament has led many biologists to conclude that, really, there is no such thing as a species per se. The species category is a human construct imposed on nature in order to facilitate classification. To take this category too seriously is to misunderstand the nature and fluidity of biological systems.

I mention this debate about the (non)reality of species in order to question a fundamental assumption that lies at the heart of the Marmot Recovery Program. Most people tend to think that the designation of this population as a distinct species carries a certain weight. This attitude possibly stems from a pre-Darwinian understanding of species. Aristotle is often credited with the idea that each species possesses an inner form or essence that determines its distinguishing features. On this view, each distinct species is associated with a unique set of instructions that specify how it is “supposed” to look and interact with the environment. No two species are thought to share the same set of instructions.

This essentialist picture is difficult to square with a Darwinian understanding of biology. From a Darwinian perspective, the Vancouver Island Marmot is probably a fairly recently isolated population. During the last ice age (just 9000 - 15,000 years ago) Vancouver Island would have been connected to the mainland. During this time, mainland marmots could have made their way west, colonizing some remote mountain tops. When glaciers eventually melted those remote populations became geographically isolated on what is now recognized as
Vancouver Island. Of course, over sufficient time this process can result in two genetically distinct populations. Eventually, the accumulation of genetic differences will make it difficult or impossible for those populations to interbreed. But it is unknown whether 15,000 years has been sufficient time for genetic isolation to occur.

Suppose, on the one hand, that Island marmots are not genetically isolated from their mainland cousins. This possibility suggests a very different strategy for their conservation. Why not just interbreed them with some Hoary marmots from Whistler Village? An Aristotelian might view this as an abomination, a violation of the essential natures of these two species. But from a Darwinian perspective this is simply a reunification of two closely related populations.

On the other hand, suppose that Vancouver Island Marmots are genetically isolated. It remains an option to repopulate the Vancouver Island mountaintops with one of the other mainland species. Again, some environmentalists might see this as an offence against the way that nature is “supposed” to be. Vancouver Island marmots belong on Vancouver Island – it is their “natural” habitat. But from an evolutionary perspective this attitude seems misguided. The Vancouver Island Marmot can be regarded as a recently established satellite population. Perhaps mainland marmot populations have been throwing off these satellites for hundreds of millennia, and what we call a unique species is just the most recent iteration of a 15,000 year cycle. What, then, is wrong with assisting this process by colonizing the Island with populations of Hoary or Yellow Bellied Marmots?

This question forces us to examine our conservation priorities. Is there something special about the Vancouver Island Marmot that justifies its special protection? Biologically speaking, we are probably talking about a few genetic mutations that separate it from mainland species. One has to wonder whether a few nucleotide substitutions really worth all of the fuss? Alternatively, perhaps our conservation goal is to avoid a state of marmotlessness on Vancouver Island mountain tops. In that case, there are much easier solutions than those which conservationists have been pursuing for the past two decades.

I have been attempting to illustrate what it means to question the foundational assumptions of a practice. We have seen that some questionable assumptions about the nature
and specialness of species are taken for granted by marmot conservationists. An evolutionary perspective provides a framework for critically examining those assumptions. This process also raises alternative conservation strategies, some of which are potentially more efficient and perhaps even more effective than those which have been pursued to date.

3. Standard misconceptions about this course.

By now it might be apparent that very little of what we shall do in this class involves what I call the “three Rs”. This is the familiar strategy where students Read some material, hear it Repeated in lecture, and then Regurgitate that material on an exam. Instead we will be applying argument reconstruction and analysis to various different viewpoints. In many cases there is more than one way to reconstruct an argument. Some versions are better than others, but often there is no single best reconstruction. The analysis of arguments, also, takes various forms. Some students are made anxious by the idea that this course will involve new skills, different form the three R’s. One concern might be that the mode of assessment (grading) will be arbitrary. At least if you are being asked to memorize and regurgitate some terms, the task is fairly straightforward. What does it even mean to reconstruct and analyze an argument well?

At this stage I ask students who might have such concerns to trust me. I will do my best to make my expectations clear. You will see soon enough what a good argument reconstruction and analysis looks like. The TAs and I will explain what you are doing well or poorly, and offer strategies for improvement.

In the mean time, I ask you to reflect on what it means to learn a new skill. I know of no examples where a skill was acquired without some mistakes happening along the way. These days, many people are afraid of making mistakes. We fear that they reflect negatively on our character. This attitude is self defeating. To be afraid of making mistakes is to be afraid of learning and growing intellectually. Why not celebrate your mistakes? View them as lessons learned that will not be repeated.

A second misconception surrounding this course stems from the deep convictions that many people have about the issues we shall be discussing. I get it that environmental issues are
deeply meaningful for many of you. This is perfectly okay. But misconceptions can arise when we scrutinize those core assumptions. Some students mistake this practice as a personal threat. It can be especially difficult if a deeply held view appears not to be fairing so well in class, in tutorial, or in one of the readings. For students who might feel threatened in this way I ask you to keep in mind three things. One is that there can be multiple arguments for the same conclusion. If one argument happens to be faulty, all that means is that those premises do not support the conclusion. There might still be some other (perhaps better) argument that does so. The second thing to remember is that, in philosophy, we separate the person from the ideas that he or she happens to be exploring. So, you are free to defend or to critique a position. This does not reflect on how people will view you as a person. The aim is to get clear on ideas, not to elevate or demote individuals. The third consideration is that it can be healthy to explore the justifications for one’s convictions. Chances are that each of you will one day encounter, in your professional lives, opposing viewpoints. You might find yourself having to defend a certain perspective or strategy. It will benefit you immensely to understand the logical structure underlying your position. Keeping this in mind, I ask that we each treat our fellow members in this course with respect, so that we all can feel comfortable in expressing and exploring our ideas.

The final misconception that often appears on my teaching evaluations is that “Linquist hates the environment.” Not true! But I understand how someone might get this impression. I will often be raising objections to certain views, just for the sake of exploring their strengths and weaknesses. It might seem at times that I am propping things up only to shoot them down. However, our aim is to understand the structure of these positions, and the only way to do so is by seeing where they break down. I have an undergraduate friend, a Political Governance student it so happens, who becomes frustrated by the academic approach to environmental issues. He complains that, often, it feels like the only aim is to identify what is faulty about each and every candidate solution. Solar power has its faults. Wind power has its faults. And so on for every possible strategy. My friend’s concern is that criticism is used as a basis for justifying inaction – that unless a solution survives every possible objection, it should not be tested. This, I think, would be a mistaken approach. I encourage you to get used to the idea that
even laudable ideas can have some weaknesses. No perspective is iron clad. This doesn’t mean that a perspective shouldn’t be adopted. The question is often whether, given certain advantages and shortcomings, how viable is a given position on balance. Argument reconstruction and analysis will help you understand various positions in this balanced way, of seeing both their benefits and their weaknesses.

4. **The tragedy of the commons as a general environmental problem.**

The villagers of Businga, a province in the Democratic Republic of Congo, convey an important lesson in their self-produced documentary, published on Youtube². It is the story of how a forest vanished before everyone’s eyes. Not long ago Businga’s hillsides were densely forested. Villagers practiced agriculture on small parcels of land that were cleared, planted, harvested, and then allowed to replenish. Some hunting supplemented their diet. Trees provided ample fuel and shelter. Businga villagers lived sustainably this way.

However, with the rise in commercial demand for trees, suddenly it made sense for villagers to undertake a little extra logging. Noticeable scars soon appeared on the hillsides. Soil nutrients eroded faster than they were replaced. Animals and good trees became increasingly scarce.

Despite clear warning signs, Businga villagers continued logging. They didn’t stop until the surrounding hillsides were denuded. Topsoil soon washed away. Water quality collapsed, along with the productivity of their land. Businga villagers now scrape by on a few simple crops (the few potatoes that can grow in the remaining soil) and a small amount of livestock.

Some Businga villagers blame their predicament on recent political mismanagement. “The government should have stopped this,” one villager comments, “they should have fined people for logging.” Others point the finger at Europeans (the ‘white men’) who created a commercial market for timber. However, most villagers accept responsibility for their actions. “We cut this forest ourselves,” one person explains. “Some of us cut trees to make charcoal, others burned it to farm. Everybody did it, even women and children.” The Businga villagers

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² [http://www.youtube.com/watch?v=cmIEESAHD4A&feature=related](http://www.youtube.com/watch?v=cmIEESAHD4A&feature=related)
are now struggling to replant their hillsides. Maybe, one day, they will succeed; but foreseeable generations will live in the shadow of this self-inflicted devastation.

One might ask why the villagers continued logging, right down to the last tree, despite such obvious consequences? It is tempting to regard Businga villagers as culturally inferior. However, this interpretation misses the moral of their story – this predicament could happen in any culture. To see how this is so, one must understand the logic of tragedy of the commons situations.

The phrase “tragedy of the commons” alludes to the Medieval land tenure system in Europe, where pastoralists grazed cattle in public pastures called a commons. The ecologist and philosopher Garrett Harden first used this example to illustrate a more general scenario3. Each farmer benefits by adding cows to the commons. This increases impact on the land, eventually causing the pasture’s quality to degrade. Essentially this is what happened in Businga. Trees were removed at an unsustainable rate until the land quality had been degraded. A *tragedy of the commons* occurs whenever individuals, acting in their own rational self interest, cause the destruction of some shared good. To understand how this can happen anywhere, one must apprehend the logic of these types of situation. Each herder knows that if he or she does not add another cow to the pasture, some other herder will do so. Therefore, even if the depletion of this resource is foreseeable, it is not within the power of any single villager to prevent. Each herder faces a choice: either receive a benefit while contributing to the destruction of a common good, or forego the benefit and watch that good disappear anyway. It must have been an emotionally wrenching for Businga villagers to participate in the destruction of their forest. Yet it was a rational decision for each individual to do so.

I personally do not like the phrase “tragedy of the commons” because the term *tragedy* suggests an unforeseeable accident that befalls some victim. By contrast, situations like the one in Businga are entirely predictable. Thus, instead of “tragedy of the commons” I prefer *Principle of Rational Depletion*. The term “principle” is meant to convey that this is a general law of human behaviour. “Rational” reinforces that it is in the self interest of an individual to

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behave in this predicted fashion. And “Depletion” denotes the eventual outcome that one can expect under certain conditions. This principle can be stated a little more precisely:

**Principle of Rational Depletion**: If there is a valued resource in limited supply, and if access is unrestricted, then it is always in a person’s rational self interest to exploit it until it is no longer available.

Let’s unpack the key concepts in this principle. Notice it states that a resource must be *valued*. As you can imagine, the extent to which a resource is valued can vary according to various economic, cultural and social conditions. Some resources are extremely valuable because they are desired or needed by so many people. In some cases, value increases with scarcity. We should thus think of value as a variable that can increase or decrease under certain conditions.

The second condition is that the resource in question must be in limited supply. By this I mean that the rate at which the resource replenishes itself is slower than the rate at which it is being extracted. Hence, at the current rate of extraction the resource will inevitably disappear. Some unrestricted, valued goods are not limited. The philosopher and economist Martin Bailey has explored the question of why First Nations communities in North America, prior to European contact, did not deplete their commonly held resources. It is important to note that these Nations differed from one another considerably, as they do today. Just think of the different sorts of challenges associated with being salmon fishermen on the west coast of Canada compared to a buffalo hunter on the prairies. Nonetheless, according to Bailey,

> Looking at a larger set of cases, one discovers a striking set of regularities in aboriginal rights structured. Typically, the rights in reach tribe vary among types of property... Families often had private property in land (with clear boundaries) for one food resource but not another. As the norm, groups hunted across the entire tribal (or village) territory without regard for property lines that might exist for other purposes (1992, 183)

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Why, you might ask, could some types of “property” or resource (for example certain types of game or nutritional plants) be treated as an unrestricted, valued good without resulting in depletion? According to Bailey, the answer is that these resources were not in limited supply. That is, they were replenished more rapidly than they were extracted. Now, one might raise objections to this interpretation of the First Nations’ situation. Indeed, it would seem that they had a system of ethical norms that determine what counts as respectful use of the land, and wholesale extraction to the point of depletion is kept in check by those norms. I am not an expert on this issue, and raise this alternative possibility only as a suggestion. More important, for current purposes, is to highlight the basic point that a resource must be limited before it is in danger of depletion, regardless of its value or whether it is unrestricted.

Perhaps the most important condition for rational depletion is that access to the resource is unrestricted. In simple terms this just means that there is nothing stopping individuals from procuring the resource, aside from having the wherewithal to do so. For example, if a resource is unrestricted then there is no effective system of legal entitlement and enforcement regulating access.

How does the Principle of Rational Depletion apply to the Businga example? My understanding is that there were two factors that pushed this community into the dangerous conditions where, suddenly, it became rational for villagers to extract trees to the point of depletion. First, the value of timber increased significantly. Partly this was thanks to the creation of a local market for timber. Good roads were built. Locals were encouraged to plant and harvest trees for trade. The area became connected to a wider timber market. Then, when the colonial Belgians pulled out, and the area came under a different legal authority, trees became an unrestricted resource. With these conditions satisfied, the principle of rational depletion kicked in.

As a final clarification, let me explain what I mean by “rational” in this context. I am using this term to refer kinds of action. An action is rational (in this sense) only if accords with the agent’s goals. I am helping myself to the assumption that most of the people in Businga share the goal of subsistence – of providing for themselves and for their families. All of them, we can assume, believe that it would be better to leave some of the forest intact. However,
since this resource is limited and unrestricted, they also know that other people will extract the resource if they do not do so. It is therefore rational for each individual to take the resource while it is still available. The Principle of Rational Depletion has a cold logic with devastating effect. Let’s consider how such situations might be avoided.

5. Three Potential Strategies for Avoiding Tragedy of the Commons

There is no universally accepted solution to this problem. However, three candidate strategies tend to arise time and again as means for avoiding it. One strategy proposes that the commons should be removed by making all resources private property. The second strategy proposes that common resources should be regulated by a central authority (such as a government). The third strategy suggests that a system of ethics must be adopted that regulates how people treat the land. Each strategy comes with certain drawbacks as well as advantages. Next week, we will consider the arguments if wildlife biologist and philosopher Aldo Leopold, who argues for an ethical solution. In the remainder of this section, we consider the first solution in more detail.

5.1 Widespread privatization

Some think that the best way avoiding a tragedy of the commons is to place environmental goods in the hands of private entities—essentially removing all common goods from the equation. Each individual, company, non-profit organization, and other private entities would then be permitted to manage its property however it pleases within a free market system. At first glance this might seem like a worst case scenario for conservation. We are perhaps not used to thinking of private entities as environmental custodians. But there are a few inspiring examples, such as the non-profit organization The Nature Conservancy\(^5\). Some theorists argue that widespread privatization is the most effective means to avoid tragic environmental devastation. They reason that people have a greater incentive to manage resources sustainably if they own them. Unlike public property, where there is no incentive to limit one’s own consumption, permanent damage to personal property only harms the owner interests. The private ownership approach, also known as free market environmentalism, assumes that most

\(^5\) http://www.nature.org/
people would behave in accordance with their long-term interest and manage private resources sustainably. As the economists Terry Anderson and Donald Leal explain:

> At the heart of free market environmentalism is a system of well specified property rights to natural and environmental resources. Whether these rights are held by individuals, corporations, non-profit environmental groups or communal groups, a discipline is imposed on resource users because the wealth of the property owner is at stake if bad decisions are made. (2001, p.4)

Imagine how this strategy would have applied to the Businga villagers before the widespread destruction of their lands. Each family or village would be assigned a parcel large enough live on sustainably. After that point, it is entirely up to each group how they decide to regulate its use. If some villagers opt for short term benefits, resulting in the destruction of their lands, this will only make the remaining areas more valuable. One can imagine how motivated a Businga villager would have been to conserve his land, seeing that surrounding areas were undergoing rapid depletion. So long as there is a system of land ownership in place, the thinking goes, this strategy is an efficient means of avoiding a tragedy of the commons.

Let’s reconstruct the argument for Free Market Environmentalism as follows. Each individual premise will be numbered and a line will be drawn before the conclusion, as per standard convention in philosophy.

P1) If someone privately owns a resource, then it is in their long term self-interest to use it sustainably.

P2) People are instrumentally rational, they act in ways that maximize long term self-interest.

C) The best way to avoid depletion of a resource is to place it under private ownership.

With the argument so reconstructed, we turn to analysis. The first thing to do is to ask whether the premises logically entail the conclusion. Here we are asking just about the argument’s structure. If the premises are true, does the conclusion necessarily follow? Another way to ask the question is whether any additional premises must be added to the argument in order to
derive the conclusion? In this case the conclusion does follow from the premises. So this argument has the right sort of structure. Let’s turn to the question of whether its premises are in fact true.

Objection to P1

Upon reflection, it is easy to imagine cases where it would be in the interest of a resource owner to deplete a resource instead of using it sustainably. For example, suppose that the resource in question is a forest. Trees can be converted into lumber and sold for a profit. Premise P1 assumes that the most advantageous strategy is to harvest trees sustainably. If they are all removed at once then the quality of the soil will deteriorate. It will be difficult or impossible to replace those trees. Not to mention the fact that regrowth will take considerable time, during which the owner of this resource will have no trees to sell. Wouldn’t it be in the interest of any landowner to avoid those circumstances?

Not necessarily. One possibility is that the market for trees is at an all time high. Perhaps there is a likelihood that the market for lumber is about collapse, as we have seen in recent years with the market for oil. To a landowner might do the calculation that harvesting the entire forest now will generate the maximum profit. At the same time, it is possible to replace soil nutrients with artificial fertilizers. The land can also be used for different crops.

First Objection to P2.

People often do things that are not in accord with their self-interest. Smoking as an obvious example. A person will say on the one hand that she wants to live a long and healthy life. On the other hand she will engage in an activity that greatly reduces life quality and expectancy. We cannot therefore assume that people act in accordance with self interest. If this argument is false, then the argument does not go through and widespread privatization will not help to avoid environmental depletion.
Reply to First Objection to P2.

A proponent of Free Market Environmentalism might, at this point, add some qualifications to the argument in order to make it stronger. For one thing, she might point out that there was a time when smokers were not aware of the health effects of this practice. We cannot, in these cases, view someone as irrational for continuing to smoke. Hence, P2 (above) should be modified slightly to take this qualification into account. I suggest adding the popular phrase “informed self interest.” This means that someone is rational only if they (a) behave in accordance with their goals and (b) are reasonably well informed about how their current actions impact those goals.

A second qualification is that even when people are informed about the consequences of their actions, they still behave irrationally on occasion. So P2 is not supposed to be a universal truth that could be overturned by a single counter example of irrational behaviour. Rather, it is put forward as a statistical (as opposed to a universal) generalization. To be absolutely precise, the premise should be rephrased as follows:

P2*) Humans, on balance, tend to act rationally, i.e. they behave in accordance with their informed self interest.

Some students will be unsatisfied with these qualifications. Think of the informed smoker. This is someone who is fully aware of the health risks, wants to live a long and healthy life, but continues to light up regardless. We know that, regrettably, people often behave this way. This is why governments go to such lengths to shock people with gruesome pictures on cigarette packages. They are appealing to emotion, not reason, in these cases because they know information about health risks alone is unconvincing to many people. Hence even P2* seems flawed.

Second Objection to P2.

In order to behave in accordance with one’s informed self interest, it must be possible to calculate the consequences of one’s actions. But perhaps the consequences of many resource
use decisions are difficult or impossible to foresee. In this case, it doesn’t matter whether people are rational. Nor does it matter if they own their resource. The problem is that they might not know what is involved in using them sustainably.

**Objections to implicit premises**

The argument for Free Market Environmentalism makes several implicit or unstated assumptions. These are foundational assumptions that would have to be true in order for the argument to be convincing, but which are not usually stated when the argument is put forward. Each of these premises could be examined in detail. Some of them will be revisited at a later stage in this course. I mention them here only in brief.

- **Not all resources can be privatized**
  The privatization approach is not easily applied to mobile uncontainable resources, like fish, clean air, or water. To the extent that these resources are vulnerable to a tragedy of the commons-style collapse, the privatization strategy is limited in its application.
  In order to be deemed acceptable, widespread privatization must be equitable. That is, environmental resources must be divided up fairly, or else people are unlikely to agree to this strategy. However, one might argue that fair distribution of environmental resources is a very difficult, if not impossible task. On this view, however appealing this strategy might seem in theory, it is not practically feasible.

- **Privatization is not always fair**
  In order for a system of private ownership to be fair, the allocation/acquisition of resources must not be biased in favour of certain individuals. For example, it must not be the case that some individuals end up with a prized piece of forest while others end up with a useless bog. Notice that this objection doesn’t deny that the valuable piece of forest will perhaps be sustainably managed by its owned. Rather, the objection is pointing to a bigger issue that seems to get ignored by this kind of system. We might think that sustainability isn’t the only goal when it comes to a system of resource management.
Regarding organisms merely as resources is morally questionable.

As it was pointed out by a student in class, Free Market Environmentalism assumes that landowners have a right to use nature in any way that they see fit. Nature, on this view, is regarded as akin to any other form of private property. This attitude is morally questionable. Some of the organisms that we are talking about (for example, sentient animals) might deserve moral consideration of their own. By analogy, we do not consider it morally acceptable to treat a fellow human being as mere property—something to be used however one wishes. A perspective that will be explored later in this course maintains that certain organisms and perhaps even species or ecosystems deserve similar consideration. This would undermine the entire framework that underpins Free Market Environmentalism.

It is perhaps worth mentioning that Free Market Environmentalists do have responses to many of these objections. Since this is an introductory course, we will refrain from exploring this issue in greater depth. But students who find this proposal interesting are encouraged to do so. Perhaps you get the sense that there is more work to be done in assessing this perspective and testing its assumptions. This remains an area of active research.

Students by this point should be getting a sense of how to reconstruct and analyze an argument. Earlier I promised that it will become more apparent what a good reconstruction and analysis consists in. One feature of a good analysis is thoroughness. You should always do your best to think of potential responses, even against objections that you have raised. This is the best way to arrive at a comprehensive understanding of a position.

Notice how the method of argument reconstruction and analysis is being employed. We started by isolating the individual steps of an argument. We then focused on one premise that looked especially problematic. We then considered objections and defenses of that premise, qualifying it slightly along the way. Where has this gotten us? It seems to me that the issue is not entirely resolved at this point, yet we have made progress. For one thing, P2 has been refined. Its scope of application has been narrowed. Second, we are now in a position to make progress on this issue by asking, To what extent is resource use a form of addition? This is an empirical question that can potentially be resolved with evidence. The method of argument reconstruction and analysis enabled us to isolate the sort of evidence that might resolve a
rather complex issue. I am not going to analyze all of the objections to the argument for widespread privatization to the same degree. I leave this for you to explore.

5.2 Government Regulation

A much more popular strategy for avoiding resource depletion is to relinquish control to a central authority or government. It then becomes the responsibility of that authority to sustainably manage the resource in accordance with long term interests of society as a whole. Like the private ownership model, government regulation attempts to prevent unrestricted access to limited and valuable resources. To be sure, there are cases in which this approach has been successful. But there are also many examples where government regulation has failed miserably. As philosophers, our approach is to identify and critically evaluate the foundational assumptions underlying this approach. It will perhaps then become more apparent what is required in order for it to succeed.

At least three conditions must be satisfied in order for government regulation to prevent utter resource depletion. First, it must be possible to monitor the resource in question. Using science or perhaps other methods of knowledge acquisition it must be possible to determine what it means to manage the resource sustainably. Second, a central authority must be capable of preventing access to the resource. That is, it must be possible to assess the state of a resource as well as to identify a threshold for sustainable use. Finally, the central authority must itself be trustworthy. This strategy will not work if a government is corrupt or if it fails to act in the long term interests of society as a whole. Let us briefly explore each of these challenges in more detail.

The challenge of successful monitoring

It is usually up to the sciences of ecology and conservation biology to monitor natural resources. The question of whether resources can be adequately monitored therefore comes down to the limits and constraints that are facing these disciplines. This topic is too broad to
explore in detail in this course. But it is perhaps worth noting that scientists themselves often disagree about these issues. On one hand, there are entire sub-disciplines of ecology dedicated to resource management. These fields operate under the foundational assumption that various resources can in fact be monitored. The issue, if there is one, comes down to the number of scientists who can be assigned to a given project and the availability of adequate funding for them to carry out their investigations. On this view, there is no resource that science is in principle unable to monitor given an adequate investment in science.

On the other hand, we have seen examples such as the collapse of the cod fishery on the east coast of Canada where scientists failed to raise the alarm. Even some professional ecologists are cautious about the capacity of their discipline to track the intricate workings of nature. Ecosystems are notoriously complex. Our ability to track and understand ecological processes is often limited. Nor is it usually possible to conduct experiments on ecosystems, since they are too large or unwieldy to manage in a controlled fashion. Hence, ecological science faces some significant epistemic challenges. Whether it is even possible to adequately monitor natural resources is far from obvious.

Philosophers and scientists are currently engaged in an interesting debate over the nature and limits of ecology. It is not an issue that we can decide upon in this course. Perhaps the best way for us to think about this issue is to entertain a spectrum of possibilities. At one extreme, the state or sustainable management of a given resource is inherently opaque to even the best available science. At the other extreme, the resource in question is scientifically transparent. We can then consider the implications of each possibility on the effectiveness of a particular management strategy.

The challenge of successful regulation

Controlling access to a resource involves effective policing and punishment. This can be extremely costly and difficult, especially when the resource exists in remote locations or when it is dispersed over a large area. Just consider the challenges associated with preventing abalone poaching on the west coast of Canada. Abalone is an extremely valuable resource
partly because of its popularity in some cultures as a ceremonial dish. The species of abalone found on the west coast of Canada is extremely limited in supply. These animals grow slowly and take a long time to reach sexual maturity. So, the rate of replacement in relation to the potential rate of extraction is very low. For many years, the Canadian Government has upheld a moratorium against abalone fishing. It is illegal to remove even one abalone from the ocean. Rule breaker face stiff penalties including the seizure of their boat, of their car, and their diving equipment in addition to a steep fine. Nonetheless, abalone continue showing up in restaurants and on the black market. Part of the problem is that there just aren’t enough DFO (Department of Fisheries) officers to police this resource. Members of the public play an essential role in reporting cases of suspected abalone poaching. But even with their participation, the ocean is a large space and eyes cannot be everywhere.

A further challenge involves assigning an effective deterrent. For many poachers, even a $60,000 fine and the loss of their equipment is a tolerable risk. The abalone black market is so profitable that they can afford to incur such charges as a cost of doing business. The challenge is for government regulators is how to set an effective penalty that keeps up with market demand. Each time the fine increases, the market value of abalone goes up, making it more profitable to poach them, and thus making the fine less effective. Given the relatively slow legal process of modifying penalties, this aspect of policing can be challenging especially when it comes to highly valued resources.

Agreeing on a central authority
People who’ve been raised in mainstream Canadian society take it for granted that our government is more or less trustworthy. We tend to think that elected officials make decisions which, to the best of their knowledge, are in our collective interest. This level of trust is based on a history of relatively responsible governance by the major political parties. However, there are many groups of Canadians whose relationship with Federal and Provincial governments is very different. To take just one example, consider the devastating effects of residential schools on Indigenous First Nations. Ask yourself whether you would trust a central authority with this kind of history to police your resources or to look out for your interests more generally? Indeed,
actions of the Canadian Federal Government towards First Nations continue to override their concerns and interests. Just consider Prime Minister Trudeau’s recent approval of the Trans Mountain Pipeline, which did not receive consent from many First Nations whose land will be impacted.

The broader point is that if a central authority is corrupt, or, if it privileges the interests of certain sectors of society over others, then it is not in the interest of everyone to relinquish control of common resources. In an extreme case, the resource in question ends up being altogether unmanaged because competing stakeholders cannot agree on a trustworthy government. It is perhaps to accident that, in Businga, the loss of their forest occurred at a period of government transition. People became aware that the new government was incapable or uninterested in sustainably managing the lumber industry. At that point the principle of rational depletion took hold allowing resource extraction to become a free for all.

5.3 An Ethical Solution?

The third potential strategy for avoiding such outcomes involves what might be regarded as an internal form of restraint. Instead of relying on land owners of government officials to restrict access to a valued and limited resource, the hope is that people can become motivated to exercise personal restraint. One possible way to achieve this is through the widespread adoption of an ethical norm. If villagers in Businga had to regarded it as morally wrong to extract trees, the thinking goes, then perhaps they would not have been motivated to act in their individual self interest. What this involves is for people to, somehow, embrace the interests of the collective as if they were their own. In the coming few weeks, we will be considering some of the philosophical arguments that have been presented in defence of this ideal. As we shall discover, presenting a rationally compelling argument for the ethical treatment of nature is more challenging than it might first appear.

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6 http://ipolitics.ca/2016/12/01/kinder-morgan-isnt-business-as-usual-its-a-betrayal/