

Why should there be a special course in environmental economics?

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Environmental and natural resource are first and foremost resources and should be allocated in the same way we want to allocate all resources. That is, efficiently and equitably.

It is also the case that it is impossible to separate the allocation of one type of resource from the allocation of other resources: resources substitute for one another or complement one another.

Producing a good, commodity, or activity requires a mix of resources.

When we formally define efficiency, it will be defined in terms of all resources, not just one category like trucks or environmental resources.

In this sense, there is no theoretical reason to have a separate course for environmental resources, or, for that matter, any other specific type of resource. In fact, there is good reason to not study a particular resource, or class of resources, in isolation—doing so can be highly misleading.

Then why do we offer courses in environmental and natural resource economics?

Or, a course called labor economics?

A simple answer: Lots of people are particularly worried about the allocation of environmental and natural resources, maybe with good reason.

And, a lot of people think environmental and NR are being misallocated.

A parsing of environmental concerns:

1. Natural resources are finite, and their stocks are dwindling and population is increasing, so maybe the shit has to hit the fan sometime soon.
 - a. E.g., The 1972 book “[Limits to Growth](#)” by the [Club of Rome](#), [Al Bartlett](#) in Engineering (now emeritus), and the reverend [Thomas Malthus](#) in “[An Essay on the principles of population](#)” (1798).¹ You might want to watch an Al’s YouTube [video](#).
 - b. Draw some isoquants for 1 gigachunk of goods and services: environmental resources on the vertical axis and all other resources on the horizontal axis. Under what assumptions should we be more, or less, concerned about running out of environmental resources?²
 - c. Expect some quiz or exam questions on the implications of different shapes for isoquants.

2. Increasing concern about non-catastrophic pollution
 - a. WTP (willingness-to-pay) to reduce pollution increases as our standard of living increases: a clean environment is a luxury good.
 - i. Consider, for example, air pollution in Beijing.
 - b. Is there more or less pollution now than in the past? Is London more polluted or less polluted today than it was 300 years ago?
 - i. Two opposing influences: (1) increased production and consumption cause increased emissions (waste and pollution, ala materials balance)
 - ii. But (2), as standard of living increases our tolerance for pollution decreases
 - iii. While it depends on how one defines pollution, I would tend to argue that London is less polluted now: people are not dying from raw sewage in the middle of the street.
 - c. Increasing information about the affect of pollutants on health etc. When I was a little kid, cigarettes did not kill anyone, neither did dirty air.

3. Concern about catastrophic pollution; that is, pollution that could lead to a widespread eco disaster

¹ You might want to look at Bartlett’s famous talk “[Arithmetic, Population and Energy](#).” Malthus, long dead, pessimistically predicted that the stock of people is inclined to grow exponentially, but that the stock of food grows only linearly, with the two processes brought into balance by the unpleasant population checks of famine, disease, and war. His basic premise that one biological stock (us) will grow at a fundamentally different, and faster, rate than another (plants and animals) is, so far, incorrect. “Limits to Growth” in a nutshell says natural resources are finite, they are inputs into production, and they don’t have substitutes (isoquants are Leontief), so we will run out of them, causing the shit to hit the fan. When I was an economics major, many years ago, the prediction was that we would run out of oil in the 1980’s. While we might run out of oil, it has not happened yet.

² Draw different cases: both inputs essential; neither essential; environ resources essential, other not essential; environment resources not essential, other essential. Also think about the distinction between constant and varying MRTS (marginal rates of technical substitution)

- a. Global warming
- b. Loss of the ozone layer
- c. Radiation from bombs or leaks

4. Concern over the preservation of natural environments: Wilderness areas, National Parks, the rain forests, the Arctic.
 - a. E.g. [Sierra Club](#) and [Friends of the Earth](#), believe there is too little preservation
 - b. Some Westerners think there is too much.
 - c. The Trump administration thinks there is too much, so is [reducing the number of National Monuments](#).
5. Concern over the preservation of animal species
 - a. The possibility of extinction of many species is a growing concern
 - b. [Greenpeace](#), [National Wildlife Federation](#), World Wildlife Fund, Trout Unlimited, [Ducks Unlimited](#)³
 - c. Many in industry argue that the benefits of preserving a species is less than the cost.
 - d. How society discounts the future is critical to the issue.
6. A former student, Anna, suggested the current concern for the environment is simply because a proportion of the population always needs to be “catastrophic” about something and environment collapse is the current groovy candidate.

Specifically, she argued that global warming is the “in thing” to be catastrophic about—if you catastrophize (sp?) loud enough you might get to have lunch with Al Gore and a bunch of liberal movie stars.

Why all of this concern?

³ Duck hunters don't want ducks to go extinct.