

Land use and value in Costa Rica's forests

1. What is use?
2. Squatter's rights
3. Ecotourism and introduced species
4. Agriculture: Coffee plantations

1. What is Use?: Definitions of Land Use

- The way land is developed and used in terms of the kinds of anthropogenic activities that occur (e.g., agriculture, residential areas, industrial areas) (EPA)
- The total of arrangements, activities and inputs undertaken in a certain land cover type (a set of human actions). The social and economic purposes for which land is managed (e.g., grazing, timber extraction, and conservation). (IPCC)
- Human use of the land surface fits 1 of 5 categories: arable land (land cultivated for crops that are replanted after each harvest, e.g. wheat, maize, rice); permanent crops (land cultivated for crops that are not replanted after each harvest, e.g. citrus, coffee, rubber); meadows and pastures (land permanently used for herbaceous forage crops); forest and woodland (under dense or open stands of trees); and other (any land type not specifically mentioned above e.g. urban areas, roads, desert). (NATO)

2. Squatter's rights in Costa Rica

- In early days of land use in many areas (the U.S. included), squatter's rights existed to encourage the conversion of "wild land" to "improved" land. Often, the laws don't catch up to changing land use very quickly; this has happened in Costa Rica.
- Squatter's rights favor small, poor land-holders. Squatters can gain legal rights to land by "peacefully occupying non-cultivated, unimproved, agrarian land over an extended period of time."
- What legally passes for "non-cultivated" or "unimproved"?
- Legally, the squatters are assumed to be acting in "good faith," which means the burden is on the landowner to demonstrate otherwise.
- Squatters can claim rights to land starting after they have been living on it for a year, uninterrupted.

Squatter's rights: two stories

- 120 campesinos (small farmers) have been living on and "improving" land belonging to Standard Fruit company (a Dole subsidiary) in NE Costa Rica (Río Frío de Sarapiquí de Heredia). They claim that the land was unused, and that they have been living there since 2000. Standard Fruit claims that they are growing bamboo there to stake banana trees on other plantations. The Costa Rican government seems to be siding with Standard Fruit. (from Aug 5 2004 Tico Times article)
- In the early 1990s, an American landowner who bought land to fill in a piece of the North-South forest corridor specifically did not improve it—that was the point. Squatters moved in, established residency, and the land became theirs, at which point the forest was cut for cultivation.

3. Invasive species: a recap

Dart-poison frogs & Costa Rican ecotourism: case study of an invasive species

Corridors in northeastern Costa Rica

- To the North: some protected forest and wetlands, much unprotected forest and wetlands, and huge tracts of lowland rainforest still standing in Nicaragua, less than 100 miles away.
- To the South: La Selva biological station, and Braulio Carillo National Park, one of the largest and most biologically diverse protected areas in Central America.
- Connecting north and south: the Selva Verde "Ecotourist" Lodge

Dendrobates pumilio ("the blue jeans frog") are small, vocal, and parental-care giving. Tadpoles have never been observed to eat the eggs or tadpoles of other species

Dendrobates auratus, on the other hand, are Not particularly small (roughly 1.5x the length of *pumilio*); not particularly vocal (rarely calls); parental care limited to transport of tadpoles (no feeding of offspring); tadpoles are known to be voracious predators on other species' eggs and tads; and they have a larger clutch size than *pumilio*.

Selva Verde's introduction

In the mid-1980s, a Floridian woman bought the critical piece of rainforest that links North & South, and named it Selva Verde. On her land, *D. pumilio* was the second most common leaf litter herp (amphibian or reptile).

She didn't find the frog fauna interesting enough, however (*D. pumilio* was too small to see for ecotourists who weren't trying very hard), so, in approximately 1987, she introduced the bigger, ostensibly sexier, and clearly non-native *D. auratus* to her land.

What happened next?

Known effects of the introduction

Likely untested effects of the introduction

What are the motives of ecotourism?

- Touted by its proponents as a way to increase awareness among the lay public of the beauty and utility of ecosystems.
- But if not shaped by knowledge of ecosystem function, it has the potential to greatly disturb the habitats it purports to have an interest in saving.
- Ecotourism providers are in business, and therefore have a profit motive. While they cannot attract ecotourists to wholly destroyed ecosystems, they can attract non-savvy ecotourists (which is most of us) to artificially hyped ecosystems, which are more dramatic and appealing, if neither sustainable nor "natural."

4. Agricultural land use: issues to consider for all crops

- A. Where is the plant native? How widely is it cultivated?
- B. To what other plants is it closely related (what family)?
- C. What is its native habit/ecology? Under what agricultural regime is it typically grown? If there is a discrepancy, how is this dealt with by farmers and/or the local ecosystem?
- D. Has it been genetically modified in any way? If so, how? (E.g. by artificial selection, by introduction of close relatives and unintended hybridization, by genetic engineering.)
- E. How important a crop is this worldwide? In particular regions? (That is, is it critical to some cultures, while unused by others)? Is there a viable substitute? Will economic substitutability necessarily be accepted culturally?

Case study: Coffee

- The drink “coffee” is made from the seeds of the coffee plant (*Coffea arabica*, or *C. canephora*), which have been separated from their berries through an extended drying or fermentation process.
- Coffee is an understory shrub that is bird-dispersed—one clue being the red fruits.
- Native to east Africa, coffee is now cultivated throughout the tropics, and drunk worldwide. It is in the Rubiaceae, and is thus related to gardenias and poinsettias
- All the major agricultural systems (swidden, etc) are used to cultivate coffee. The majority of coffee sold in the developed world is the result of monocropping, replete with all the usual problems: lots of agrochemicals, poor treatment of workers, destruction of ecosystems, and reduced quality of the coffee itself.
- But coffee is so important economically that there is still profit to be made even under these conditions, by the big developed world producers who destroy land in the developing world.
- By comparison, shade-grown coffee (in traditional or polycultural systems) requires few agrochemical inputs, allows good lives for the workers, and tastes better.
- Recent research also suggests that the migratory birds that are still present on shade-grown coffee farms do a better job of distributing coffee seeds, making these farms more productive than monocropping systems.



Grist Magazine is an on-line magazine dedicated to environmental news and commentary. I recommend the following url for more analysis of the Death of Environmentalism paper:

<http://www.grist.org/comments/gist/2005/01/13/doe/>.

This is Grist Magazine’s site devoted to the piece you read, and several follow-ups to it. These include Grist’s’ editorial (referred to in part 3 in the workshop below), an interview with the authors, and an in-depth response (and rebuttal) to the piece by Carl Pope, executive director of The Sierra Club.

Death of Environmentalism: A Workshop in 3+ Parts

Source material: Shellenberger, Michael, and Nordhaus, Ted. 2004. *The Death of Environmentalism: Global Warming Politics in a Post-Environmental World*. Released at the October 2004 meeting of the Environmental Grantmakers Association.

Break into 4 groups.

Part 1: List as concisely as possible the authors' arguments concerning what the problems are with environmentalism as it is currently being practiced. These lists will go on the board to be discussed and interpreted.

Part 2: Groups will be assigned to be either "A" or "B" groups.

A. Defend the following thesis of the piece (one of several articulated therein): the failings of the environmental movement are due to "lack of a vision, a coherent set of values, and policy proposals that build its power" (p27).

B. Refute the authors' thesis (as above).

Part 3: Groups will be assigned to be either "A" or "B" groups.

The authors also argue that the "public education" model of environmentalism assumes that the American people are made up of "100 million policy wonks" who wake up every morning excited about the environmental movement's bleak news, and ready and willing to figure out what all the individual pieces mean (p28). Put another way, most people aren't fascinated by political strategizing and legislative maneuvering, or even with "the intrinsic value of wilderness, or the fortunes of the lesser southwestern mottled prairie vole. Most people are concerned with doing right by their families, paying their bills, and having a little fun" (from grist.org, see description and url on p3 of this handout).

A. Defend the authors' viewpoint, and address how environmentalism can begin to connect with ordinary (non policy wonk) people and their real-life concerns.

B. Refute the authors, and explain why and how the current model is effective at communicating the goals and values of environmentalism with Americans.

Part 4 (if we have time, or for you to consider on your own): The authors specifically and explicitly do not propose an alternative solution to the morass that they find us in (p7). Can you come up with some solutions? What should the vision of the environmental movement be? How would we spread that vision?