

"Tropical Forests: Going, Going....?"
The Carnegie Museum of Natural History
Pittsburgh, PA

Environment dx

7 November 1987

**HOW TO SAVE THE JUNGLE:
OPPORTUNITIES FOR PERSONAL ACTION**
(with emphasis on Amazonia)

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1. INTRODUCTION

**"The greatest polluter is the poverty of the poor--and the greed of the rich..."
Indira Gandhi.**

This talk focuses on the extinction of species or loss of biodiversity, the main cause of which is loss of tropical forest, the planet's richest terrestrial ecosystem. This habitat supports half of the world's (5 to 30 million) species on seven percent of our land area. The causes, particularly poor people forced into shifting cultivation of tropical forest, and the perilous consequences of loss of biodiversity are well known to all attending this conference; others can turn to the Ehrlich's (1981) compelling oeuvre. Lest US-based readers feel it is not their problem: it is. The United States' inexorable demand for tropical commodities such as rubber, oil palm, cocoa, tropical timbers (US\$1 bn/year) and veneer exerts irresistible pressure on tropical forests. If conversion of tropical forests created sustainable jobs or permanent benefits, it would be difficult to demote; but it does not. Tropical forest is being destroyed for ephemeral pittances. One of the most damaging is deforestation for a few years of minutely cheaper US hamburgers (see box).

The Hamburger Connection

(from Chris Uhl, 1986)

If cattle gain 50 kg/hectare/year, are slaughtered after 8 years, and half the weight is non-meat (skin, bones, etc), then each cow produces 200 kg. or 1600 hamburgers. If one hectare of tropical moist forest weighs 800 tons, then $800 - = 0.5$ tons of forest per hamburger. At 10,000 sq mt/hectare - $1600 = 6.25$ sq mt of forest per hamburger. After 10 years, this translates into US\$3/ha/year. In summary, one hamburger translates into half a ton of forest. The cumulative effect of such hamburger consumption is equivalent to millions of years of evolution and to thousands of species: is it worth it?

2. URGENCY

Our global society has 10-30 years left to conserve tropical rain forest habitats, (dwindling at 200,000 sq. km per year), depending on the site. For example, Philippines, Haiti, El Salvador, Sri Lanka, parts of India, and Bangladesh it is largely too late: a large proportion of their biodiversity is already irreversibly extinct. If our generation does not conserve samples, it won't be there for the next. In addition, most extant species may be "living dead", i.e., no longer breeding (or with non-viable populations, Janzen, 1986). Major needs to arrest these losses are summarized in Figure 1: selection of wildland samples; design of wildland conservation tracts; rehabilitation of degraded habitat; as well as a check on the tropical lumber trade, and on the population pressures forcing of peasants off fertile land and into forests, watershed and slopes.

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Figure 1: How to Save Tropical Forests
- A Conspectus -

REDUCE DEMAND

BOOST SUPPLY

1. Essential Preconditions

Revamp orthodox economics; Innovate Third World debt solutions (Citicorp & Conservation International re Beni, Bolivia); Promote economic incentives for environmentally prudent behavior; Assist Vulnerable Ethnic Minorities (e.g., Jungle dwellers). Reduce war and its environmental effects.

Ensure Conservation Areas, National Parks, World Heritage Sites, Biosphere Reserves; Zoos & Arboreta; Gene, Sperm, & Seed Banks; Museums, Herbaria; Rehabilitation/ repopulation of degraded tracts promote peace.

2. Improve Development Projects

Multilateral Development Banks and Bilateral Development Agencies (e.g., USAID, CIDA, SIDA, DANIDA, ODA), especially projects of forestry, rubber, oil palm, cocoa; alternatives to coca.

Rubber south of Amazon, soybeans, cocoa pollinators; Reactivate Asian "Sleeping Rubber"; Encourage tropical agromultinationals to conserve samples of the ecosystems they use (e.g.: Hershey, Dole, Firestone, Goodyear, Cadbury, Coca Cola, (Minute Maid), R.J. Reynolds "Camel Adventure" Del Monte, Nabisco, Kentucky Chicken).

3. Improve Land Settlement

Deflect Transmigration to "alang" grassland & Polonoroeste to "cerrado" savanna; Promote family planning; Improve land tenure in existing settlements. Demote highways & cars in forest; promote carts & bicycles.

Promote Cerrado, grassland and Savanna land settlements; Upgrade slums; Family Planning; Intensify existing agriculture. Promote fluvial transport & blimps.

4. Reduce Shifting Cultivation

Except for low population density jungle dwelling ethnic minorities, alternatives to shifting cultivation should be encouraged.

Tropical Forest Action Plan; Improve conventional land use; Promote and improve subsistence economies; Promote irrigation and fertilizers on existing agricultural land.

5. Demote Tropical Cattle Ranching

Hamburger Connection; ethics economics, employment, sustainability (extinctions); Raise health issues, (e.g. cholesterol); Burger King, McDonalds.

Promote cattle on natural rangeland; Promote non-cattle meat (Capybara, agouti); Raise fish (rivers, ponds); Encourage trends: red to white meat & poultry to fish to some degree of vegetarianism; cows to pigs & goats.

6. Improve Tropical Timber Trade

Ban tropical undressed log exports; Consumer pressure against tropical lumber imports (e.g., Japan, US, EEC); Promote sustainable forestry.

Tree plantations near markets; Buffer zones around conservation areas; Agroforestry; Recycle paper; Promote value-added to tropical wood exports.

3. ACTIONS NEEDED

"The worst thing that can happen--will happen--in the 1980s is not energy depletion, economic collapse, limited nuclear war, or conquest by a totalitarian government. As terrible as these catastrophes would be for us, they can be repaired in a few generations. The one process ongoing in the 1980s that will take millions of years to correct is the loss of genetic and species diversity by the destruction of natural habitats. This is the folly our descendants are least likely to forgive us." Dr. Edward O. Wilson, Professor of Biology, Harvard University.

The action question becomes: What are we -- not our children-- going to do about all this? As one of the founders of the World Bank (John Maynard Keynes) stressed: "We will do the rational thing - but only after exploring all other alternatives". Figure 1 outlines ways to save tropical forests. As can be seen, there are many opportunities for all of us to become involved. A wide spectrum of skills and energies are needed. The success of Earth First, and the Rainforest Action Network, encouraging Burger King to eschew tropical rain forest beef attests the possibilities. Choose where you feel most comfortable: build on your strengths. Political actions can be exceptionally influential (e.g., Congressmen Porter, Obey, Kasten). Improvements in economic calculus reap overall fundamental benefits (e.g., Binswanger 1987, Warford 1987, Daly 1984, 1987, Goodland and Ledec 1987, Repetto 1987). As the President of the World Bank wrote "...the goals of poverty alleviation and environmental protection are not only consistent, they are interdependent. Sound ecology is good economics. The Bank will place new emphasis on correcting economic policies that prevent environmental abuse" (Conable, 1986b). We ecologists must learn to dialogue with economists and decision-makers. Study, publicize, lobby, write letters, demonstrate. Active participation in some of the tropical forest conservation groups listed in Figure 2 and some of the environmental groups listed in Figure 3 can be exceptionally effective.

A word of caution: violence breeds more violence and totalitarianism. Dr. Dian Fossey was macheted to death at Christmas 1984, while protecting one of our nearest non-human relatives Gorilla g. beringei, and there are only 252 individuals left. On 10 July 1985, a civilized western democracy officially sanctioned the bombing and sinking of Greenpeace's "Rainbow Warrior" in Auckland harbor, killing Fernando Pereira. Non-violence is preferable to such violence of the despoilers. The non-violence of Mohandas K. Gandhi and Martin Luther King are greatly preferable. The point to emphasize is that we are all needed. If your forte is golfing with chief executive officers of multinationals then join those at the top of list 3.3. Those courageous enough to interpose their bodies between trees and the chainsaws or bulldozers join Greenpeace, Chipko or Earth First. Writers, politicians, economists, fund-raisers and bumper sticker stickers - all are needed. Eventually, and sooner rather than later, the nationals of tropical forest nations must manage their own resources. One highly effective action is to support conservation and environmental NGOs in such nations.

Activism
→

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Figure 2: Tropical Forest Action Groups
(partial listing only)

- E.F. Rainforest Action, Bay Area Earth First, P. O. Box 83, Canyon, CA
94516, USA.
- Environmental Liaison Center, P.O.Box 72461, Nairobi, Kenya
- Friends of the Earth Campaign to Serve Tropical Rainforests, 26 Underwood
Street, London N17JQ, UK
- International Tropical Timber Organization (ITTO), Yokohama, Japan.
- International Union for the Conservation of Nature and Natural Resources,
Avenue du Mont Blanc, CH-1196, Gland, Switzerland.
- Rainforest Action Network, 300 Broadway (suite 28), San Francisco, CA
94133, USA.
- Rainforest Information Centre, P. O. Box 368, Lismore, NSW 2480, Australia
- Sahabat Alam Malaysia, 37 Lorong Birch, 10250 Pulau Penang, Malaysia.
- Tropenbos: Stimulation program for research in humid tropical forests,
Galvanistraat 9, 6716 AE Ede, Netherlands.
- Tropical Ecosystem Research and Rescue Alliance, P. O. Box 18391,
Washington DC 20036-8391 USA
- Tropical Forest Action Network, 501 Shinwa Building, 9-17 Sakuragaoka,
Shiboya-Ku, Tokyo 150, Japan.
- Tropical Forests Working Group (c/o NRDC), 1350 New York Avenue, N.W.,
Washington, D.C. 2005, USA.
- Tropical Rainforest Times, FOE 26/28 Underwood St., London N1, UK.
- Tropical Forest Project, World Resources Institute, 1735 New York Avenue,
N.W., Washington, DC 20006, USA.
- World Rainforest Report (World Rainforest Movement) (Martin Khor Kok Peng)
Third World Network, 87 Cantonment Rd., 10250, Penang, Malaysia.
- World Wildlife Fund International, CH-1196, Gland, Switzerland.

FIGURE 3: Spectrum of Environmental Action Opportunities
(Examples Only)

1. Political (e.g., Congressmen Kasten, Obey, Porter)

2. Economic (e.g., Herman Daly, Binswanger, Warford)

3. Institutional

More Respectable

- World Resources Institute
- Conservation Foundation
- Population Council
- International Institute for Environment and Development
- Worldwatch Institute
- IUCN CMC

4. Grass Roots

- World Wildlife
- Aubudon
- Nature Conservancy
- Sierra Club
- Conservation International
- Natural Resources Defense Council
- Environmental Defense Fund
- Defenders of Wildlife
- Friends of the Earth
- Chipko Tree Huggers
- Greenpeace
- Earth First
- Sea Shepherds

More Activist

4. ROLE OF THE WORLD BANK

In addition, you may want to improve the economic development process more directly, in order to preserve biodiversity. Here is one example: The World Bank: Why?

The World Bank is owned by 151 member countries - therefore practically all the World's biodiversity is contained therein. It lends \$17 billion per year to developing country sovereign owners of tropical forests. Therefore, the World Bank can be enormously potent for your goals, by financing loans to developing nations for the preservation of their biodiversity.

The World Bank has just (July 1987) created a top-level Environmental Department, in addition to four regional environmental divisions (for Africa, Asia, Latin America and the rest; Conable, 1987a). As Saul Alinsky advised: "The best way to change an institution is to force it to abide by its own rules". In September 1986, the World Bank promulgated a fundamental policy on biodiversity called: "Wildlands".

So far, the World Bank has financed biodiversity preservation in 26 countries worldwide, in 40 projects, which protect more than 60,000 sq. km. (larger than all of Costa Rica). The biggest is in Amazonian Brazil, where in Rondonia, we are financing the protection of 19,000 sq. km. of tropical forest (as big as El Salvador). But this is a drop in the bucket and scarcely enough to decelerate biodiversity loss. To change an institution by making it abide by its own rules, you must know the rules: Here are the specifics of the new Wildlands Policy.

The general policy follows the first injunction of Hippocrates 2000 years ago: "Non Noli Nocere" - "First do no harm". The World Bank seeks to avoid eliminating wildlands. Rather, we want to finance their preservation. This translates into six policy elements.

1. The First Policy Element: The Bank normally declines to finance conversion of wildlands of special concern: these are the officially designated areas such as National Parks, and includes areas slated for official designation, as well as specific geographical priorities, and specific endangered ecosystems.

Why is the word "normally" included? This provides for a powerful quid pro quo: a tradeoff. Let's say 1% of a desert national park is requested for an irrigation reservoir. The tradeoff could include:

1. Addition to the Park of 1% equivalent tract elsewhere.
2. This can be an underrepresented habitat.
3. Financing for the whole park.
4. Addition of an aquatic habitat and source of water.

2. The Second Policy Element: Is when wildlands other than those of special concern may become involved. The project should be sited on already converted land (logged over, degraded or already cultivated). Rehabilitation of degraded sites must take precedence over further conversion of intact wildlands.

3. The Third Policy Element: concerns deviations from these policies: All deviations must be explicit justified. This means a more open decision-making process than has occurred in the past. The options must be aired outside the implementing Ministry, and should include Ministry of Environment, academia and NGOs.

4. The Fourth Policy Element: applies when development of wildlands is explicitly justified. In this case, less valuable wildlands are to be converted, rather than more valuable ones. If nothing else, all these policy elements will vastly augment employment for tropical applied ecologists and improve our knowledge of biodiversity.

5. The Fifth Policy Element: also applies when conversion of wildlands is not of special concern. Such wildland loss must be compensated for by financing the preservation of a similar wildland elsewhere: similar in area and in biodiversity. Often this translates into creating a protected area adjacent to the project buffer zone. But it can include financing of a needed tract elsewhere if the tradeoff is firmly negotiated.

6. The Sixth and final policy element: concerns projects that do not contemplate conversion of wildlands. The policy is to preserve wildlands for their "environmental service" values alone. The best example of an "environmental service" component is Dumoga National Park in Sulawesi, Indonesia. This 3200 sq. km. National Park - bigger than Luxembourg - protects the entire watershed of a 197 sq. km. irrigated rice scheme, even though the rice project would not have directly caused deforestation of the watershed. The Park was financed from 1.5% of project costs (at \$1.1 million). Since then, it has become a site of the world's biggest ever scientific expedition - Operation Wallace. Hundreds of scientists worked for three years and discovered hundreds of new species.

5. CONCLUSION

There you have some of the opportunities. It is up to you to maintain constant vigilance, to work with the Ministries of Environment and Wildlife Departments of developing countries, as well as with the implementive ministries and development finance agencies. Of course there will be difficulties, but cooperation between Governments, developing country NGOs, development agencies, the informed public, academia and the private sector will ensure success. Two difficulties are first, that the World Bank makes loans at near commercial interest rates, rather than making grants as some bilaterals fortunately can do. Second, too much loan conditionality encourages a potential borrower to seek less conditional loans elsewhere. While environmental improvement will not be easy, it is better than the alternative of accelerating extinction....

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