

ENDANGERED SPECIES

Technical Bulletin Reprint

Wildland Management Center
School of Natural Resources
The University of Michigan

THE PRIMARY SOURCE: Tropical Forests and our Future.

A review of Norman Myers' new book by Todd K. Buchta

Perhaps the best evidence of this book's importance is the fact that its title, while ostentatious at first, grows on you. By the end of the book, you will concur with biologist Norman Myers' assessment of tropical forests as a central, primal source of wealth, both economic and ecologic. At first his claim that remote rainforests play a vital role in the daily lives of American consumers seems a trumped-up plea, akin to claims that everything causes cancer and that everyone is responsible for redressing the plaintiff's pet cause. By the end, however, you look around the room and see products that came from tropical forests, you think about what you ate today, and Myers' arguments fall into place. You wonder why so few besides you have recognized the primary source for what it is, and you're hard pressed to call it anything different.

Tropical forests exist in a narrow band around the equator, a band that receives two times the solar energy of the temperate zones familiar to Americans. Tropical forests are distinguished by a year-round supply of rainfall and an interlocking canopy of tree crowns, which cover the richest collection of plants and animals on earth. Although they cover about 7% of the earth's land surface, they may contain 40% of the planet's 5 to 10 million species. Tropical forests account for only a third of the world's forests but 80% of its vegetation. To make a further comparison, the U.S. has 20,000 plant species within its 9 million square kilometers. Colombia, with only 1.1 million square kilometers, has 25,000.

Tropical forests are not merely a bountiful collection of wildlife, however.

They are probably the world's oldest continuously-existing ecosystem, some forests being probably 70 to 100 million years old. And the environmental stability of that lengthy period fostered the evolution of the most complex ecological relationships on Earth.

But tropical forests are under assault. At least 2% of the tropical forest biome is adversely affected each year; in some countries forests may be gone as soon as 1990. We may lose half to one million species by 2000, that landmark year which draws uncomfortably closer.

What's happening? The biggest problem is numerous small-scale farmers who see no choice but to "slash and burn" the rainforest to plant crops they desperately need for cash and food. Also, while less a problem, native people who gather fuelwood for cooking and heating are overharvesting the forest in specific locales.

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Furthermore, Myers argues the demand for cheap, lean beef for the U.S. fast food trade encourages Latin American ranchers to clear forest for grazing land. Commercial loggers overharvest the forest at biologically unsustainable rates, worsening the problem by using wasteful silvicultural

methods. This logging is also driven by demand in the first world, partly for fancy tropical hardwoods prized in furniture and homes. Both these pressures on tropical forests prompt Myers to ask "Whose hand is on the chainsaw?" It's a question to ask yourself as you run to a fast-food restaurant for a bite, or when you pull that tropical teak salad bowl out of the cupboard.

What will we lose if the rainforest disappears? The list of benefits, products and services that Myers presents is almost numbing.

Dozens of foods are derived directly from tropical forests; others depend on them indirectly. Many domesticated crops need genetic infusions from wild species to maintain their productivity and disease resistance. The foods include cocoa (for chocolate), coffee, bananas, avocados, sugarcane for sugar, species of corn — hardly unfamiliar items to Americans, either in raw form or as a part of processed foods. Actual and potential products from tropical forests include rubber, various fibers, oils used in food and cosmetics, "green" gasoline (gasoline derived from plant material rather than petroleum) — the forests may support a whole new chemical industry as more plant species are analyzed and found useful. Derivatives from other plants have even produced valuable pharmaceuticals, including anti-cancer drugs and contraceptive pills.

The list continues. Myers details the role of "the jungle" (a name that doesn't do justice to the richness and beneficence of tropical forests) in

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The Primary Source continued

regulating floods, providing drinking water and even in moderating the global climate. If Earth were a city instead of a vast planet, its residents would recognize the rainforests as living infrastructures, as vital as roads and sewers.

Myers closes his book with sixty pages of realistic, concrete suggestions for addressing tropical deforestation. He sees roles for both the developing countries and outsiders. Developing countries must move to evaluate the full range of benefits they get from forests. They must work to conserve and develop at the same time by reserving some of the rainforest in protected areas, while stewarding the remainder to reap economic and environmental values that can support national development. Outsiders need to understand the links between forestry and development, to support protected areas for tropical forests and to consider their own behavior as consumers.

In many ways this is an environmental book for the '80's. Myers' work is replete with hard-hitting, pragmatic economic arguments for his positions — an antidote to those "economic realists" of today who see environmentalists as stuck in the '70s, as mystics who never had to meet a payroll and were insensitive to a need for jobs. Yet, wonderfully, Myers retains the mystical which inspires so many environmentally-concerned people. The fear of losing the global heritage represented by primal forests million of years old drives Myers to act just as much as the economist's arithmetic.

Myers also leaves the image of "environmentalist as doomsayer" back in the '70s, as he convinces you that this crisis really is an opportunity, rather than an unfolding disaster. He is realistic about the obstacles, both institutional and social. His realism is even more effective because it is personal. Myers doesn't preach the parables of ecology from Mount Olym-

pus. He knows it's easy for him to lecture on a full stomach, a luxury not enjoyed by poor farmers destroying the rainforest in order to eat. He brings you into his Oxford study while he dreams about rainforests in Borneo and shares his discomfort in knowing that as a consumer he too has made the chain-saw whine.

With more "books for the '80s" like this and the aggressive campaign Myers calls for, our primary source will be more secure in the '90s and beyond.

The Primary Source

by Norman Myers. W.W. Norton, 1984. \$17.95, cloth.

Todd Buchta is completing his graduate work in environmental communications in the School of Natural Resources. Todd has been a frequent contributor to the *Reprint*.

Endangered Species Technical Bulletin Reprint



A forum for information
exchange on
endangered species from

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Resources. . .

The Plant Conservation Program of the World Wildlife Fund-US has two brochures available which emphasize the need for plant conservation. **Saving the Roots of Life** outlines the importance of plants as a potential resource for medicines, agriculture, house and garden plants, and explains what the World Wildlife Fund is doing to help preserve plants. **Plants Traded to Extinction** gives brief descriptions of some of the world's most threatened plant species, such as the bamboo cycad, Knowlton cactus, half-mens, sternbergia and flamingo lily. Both are available from the World Wildlife Fund-US, Plant Conservation Program, 1601 Connecticut Ave. N.W., Washington, D.C. 20009 at the following prices: *Saving the Roots of Life*: 20 copies for \$10; 50 copies for \$15, and 100 copies for \$20. *Plants Traded to Extinction*: 20 copies for \$5.00; 50 copies for \$10; 100 copies for \$15.

Species of Special Concern In Pennsylvania has just been released and contains data on the rare and endangered flora and fauna of Pennsylvania. This book represents the best

estimation by the Pennsylvania Biological Survey of the status of the species of special concern in Pennsylvania. Species considered to be of special concern are those that are classified as endangered, threatened, vulnerable, status undetermined, and extinct or extirpated. The data assembled for each species are grouped under the headings of common names, description, range, habitat, life history and ecology, basis of status classification, and recommendations for future action. The book, bound in hard cover, contains 430 pages and can be ordered for \$33.00 (includes shipping and handling) from the Publications Secretary, Carnegie Museum of Natural History, 4400 Forbes Avenue, Pittsburgh, PA 15213.

Another newly released publication, **Threatened and Endangered Plants and Animals of Maryland**, contains thirty papers dealing with Maryland's rare plants and animals. It is published by the Maryland Natural Heritage Program and is a valuable resource for naturalists, land use planners, and

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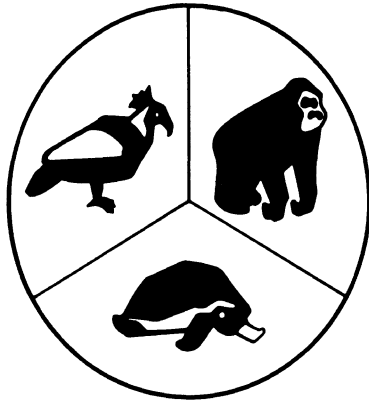
conservationists. The 476 page book costs \$13 (including tax and postage) and can be ordered from: Maryland Department of Natural Resources, Fiscal & Supportive Services Offices, Tawes State Office Building, Annapolis, MD 21401-9974.

Green Inheritance by Anthony Huxley. This book describes and illustrates the most important plants from human cultures and the range of consumer products, drugs, and industrial processes that are derived from them. It conveys the vital role of plants in the environment, their genetic base for

major food crops, and the destruction of habitats which results in the loss of plant diversity. The cost is \$19.95 plus \$1.50 shipping and handling. Order from: Doubleday & Company, Inc., Dept. ZA-373, Garden City, New York 11530.

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Announcing. . .



Breeding and Conservation of Endangered Mammals

Jersey Wildlife Preservation Trust 27th July to 17th August 1985

The Jersey Wildlife Preservation Trust, established in 1963 under the auspices of Gerald Durrell, provides a centre for the breeding of endangered species as a means of ensuring against their complete extinction. Members of the Trust staff manage breeding colonies of selected endangered species and also conduct field visits to assess the status of these species in the wild and to further field conservation programmes. Particular emphasis is now placed on the development of projects for reintroduction of captive-bred stocks into natural habitats in order to supplement or restore original wild populations.

The Jersey Wildlife Preservation Trust has previously held five highly successful Summer Schools. Those in 1980 and 1981 were on the topic of *Biology and Conservation of the Primates* and more general courses in 1982, 1983 and 1984 dealt with *Breeding and Conservation of Endangered Species*. The Trust maintains successful breeding colonies of a wide variety of mammal, bird and reptile species and the aim of the three-week course planned for 1985 is to provide an introduction to practical aspects of management and to supply detailed information relevant to conservation and captive breeding (viz. reproductive biology, nutrition, genetics, behaviour and ecology). The course is intended for zoo staff and students who wish to further their interests in the study of behaviour and in the role of captive breeding programmes as an aid to conservation.

It is emphasised that practical involvement in routine zoo work is not actually part of the course, the primary objectives of which are to provide a good theoretical foundation for future work and give some insight into the practical problems of captive breeding. The course also aims to help students recognise and develop their particular interests and capabilities.

The course will be based at the Trust's headquarters in Jersey and will consist of alternating morning and afternoon programmes of lecture/discussion sessions and individual supervised project work. Lectures and supervision of projects will be given by staff members and invited experts. The course will be directed by Dr. D. R. Waugh, Trust Training Officer, and two internationally recognised scientists, Professor R. D. Martin, Department of Anthropology, University College, London, and Dr. S. K. Bearder, Senior Lecturer in Anthropology, Oxford Polytechnic, Oxford, England.

In addition there will be film and video presentations and activities outside the official course timetable. All participants will be presented with an official certificate at the end of the course, describing the project conducted. When necessary, an assessment of a student's project and general performance on the course will be available on request.

Registration and Accommodation

The fee per person for the course is £515 or US\$675. Dormitory accommodation and all meals (cooked breakfast, packed lunch, main evening meal) are provided and the fee also covers all course expenses.

Optional field excursions to neighbouring islands and to the French coast will be available at an extra cost of approximately £20.

Accommodation will be provided from Saturday, 27th July for participants arriving over the weekend prior to the course. The departure date is Saturday, 17th August.

Since participation in the course will be limited to a total of approximately twenty students, and will involve selection on merit and suitability, early application is advised.

Please apply in writing to THE SUMMER SCHOOL CO-ORDINATOR

JERSEY WILDLIFE PRESERVATION TRUST

TRINITY, JERSEY, CHANNEL ISLANDS, BRITISH ISLES

Closing date: 30th April 1985.



Resources continued

Our Green and Living World. The Wisdom to Save It by E. Ayensu, V. Heywood, G. Lucas, and R. DeFilipps. The book tells the story of the many uses that man has for plants throughout the world and show how vital they are to his health and survival. The authors present scientific facts about the current decimation of forests, the spread of deserts, and the extinction of species. It contains almost 300 pictures, most of them in full color, depicting plants in tropical forests, islands, grasslands, deserts, and wetlands.

Vertebrate Wildlife of Alabama represents the first of two publications that will result from the "First Alabama Nongame Wildlife Conference," held at Auburn University July 15-16, 1983. It is essentially an annotated checklist of all vertebrate species, and in some cases subspecies, known to occur in Alabama, with an indication of the status of each.

Published by the Alabama Agricultural Experiment Station, the 56-page work contains 58 color photographs.

The publication is available from the Department of Research Information, Alabama Agricultural Experiment Station, Auburn University, AL 36849. (\$4.00 postpaid.)

Resource information was provided by Jane Lamlein from the Smithsonian's Museum of Natural History.

THANK YOU!

We are able to continue printing the *Reprint* and the *Endangered Species Technical Bulletin* because of gifts from corporations and organizations that recognize the value of this source of information. The *Reprint* staff wishes to thank the following organizations for their support for 1985:

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TO OUR READERS

Thank you for your continued support. We appreciate the notes and especially the strong response to renewing subscriptions. Please continue to encourage others to subscribe.

We would also like to remind you to submit items of interest appropriate to the *Reprint*. The goal is still to make the *Reprint* a "forum for exchange of information on endangered species."

We are happy to report that Kathy Rude, our associate editor, will be leaving to take a staff writing position with Ducks Unlimited. Kathy is completing her graduate work on communications in the School of Natural Resources and will begin her new job in April. Kathy has made a significant contribution to the quality of the *Reprint* and will be missed. We hope she will continue to submit material from Chicago!

March 1985

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