

# ENDANGERED SPECIES

**Technical Bulletin Insert** Wildland Management Center  
The University of Michigan

From the World Wildlife Fund-U.S.



## NORTHERN WHITE RHINO An Epic History

In 1983 F.C. Selous wrote in *Travel and Adventures in South east Africa*, "...the large, white grass-eating rhino, whose range was always much more limited as it was entirely confined to those parts of ...Africa where were to be found the open grassy tracts necessary to its existence, is upon the verge of extinction." Presently, there is an enormous difference in the conservation status of the two sub-species of white rhino. While the Southern Whites are numerically secure and widely distributed (the world population is over 3,500), the Northern Whites are down to a very low number in relic populations. They are the only representatives of the species in Africa north of the Zambezi, and they inhabit areas and ecosystems greatly in need of conservation action.

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The Northern White rhino, *Ceratotherium simum cottoni*, is now extinct throughout much of its former range, and the total world population is probably less than 100. While its existence was only confirmed at the beginning of this century, when Sclater exhibited the anterior horn of a Northern White rhino shot by Major Gibbons near Lado on the White Nile, its numbers were then fairly high. Its range then extended from western Uganda through northern Zaire into the Central African Republic (CAR), halfway up through Chad (to Lake Chad on the country's western border) and into various areas throughout southern Sudan. The Northern White rhino's range is now thought to be limited to a small population in western CAR with one or two populations near the Murchison Falls area in Uganda, and in Zaire's Garamba National Park. The Shambe, Meshra and Southern National Park regions of the Sudan also seem to have remaining in-

dividuals, but poaching pressures threaten their continued existence. Since 1979 over 800 horns from more than 400 rhinos are known to have left the Sudan.

In all the remaining range of the Northern White rhino, Garamba National Park offers the best possibility for conservation of a wild population. Between 13 and 20 individuals remain in the park, south of the Garamba River, according to the March 1983 aerial census conducted by Kes Hillman, Markus Borner, Mankoto ma Oyisenzoo, Patrick Rogers and Fraser Smith with funds provided by World Wildlife Fund (WWF), International Union for Conservation of Nature and Natural Resources (IUCN), United Nations Environment Programme (UNEP), Frankfurt Zoological Society (FZS), and the African Wildlife Foundation (AWF).

The uniqueness of the Garamba ecosystem in a global as well as Zairean context was recognized by the World Heritage Committee in 1980 when it elected the park as a World Heritage Site. Garamba was considered unique because it's an area of exceptional beauty with large concentrations of animals and distinct habitat types, and because of its Northern White rhino population, a threatened sub-species which was considered by the Committee to be of outstanding universal importance. As well as rhino, Garamba contains nearly 8,000 elephants, over 50,000 buffalo, and a variety of other species, including giraffe, hippos, hartebeest, lions, and oribi.

Established in 1938, primarily for the conservation of Northern White rhino and Northern Savannah giraffe, Garamba (4,900km<sup>2</sup>) lies in the northeasternmost area of Zaire, on the Zaire-Sudan border. The reported 100 rhinos that existed in Garamba in 1938 had increased to an estimated 1,000 to 3,000 before Simba guerrilla forces occupied the park in 1963. In 1972, Kai Curry-Lindahl estimated that 900 to 1,000 rhino had been killed during the disturbances. An aerial survey conducted by FAO in 1976 estimated that 490 rhinos



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# Northern White Rhino

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were then present, which was due to an increase in numbers after park control was regained. However, in 1978 another wave of poaching hit the park. At present, the only hope for the survival of Northern White rhino *in situ* is an immediate and concentrated effort to upgrade the anti-poaching capability and restore law enforcement in the park.

In June 1980, Dr. Kes Hillman and Major Ian Grimwood (1976 winner of the J. Paul Getty Wildlife Conservation Prize, administered by WWF-US) of the IUCN African Rhino Specialist Group visited Garamba and drew attention to the need to provide assistance to the Institut Zairois pour la Conservation de la Nature to help in the management of the park with particular emphasis on conservation of Northern White rhino. Subsequently, after urgent requests from the Zairean government, stop-gap aid was sent to Garamba by IUCN/WWF to protect the rhino population.

Currently, because of the magnitude and importance of conserving Garamba, a consortium of three funding organizations (WWF, FZS, and UNESCO-World Heritage Convention) is being formed to undertake the necessary recovery program. It is hoped that under the directorship of IUCN/WWF Programme Representative Dr. Robert Malpas, the technical expertise, equipment and anti-poaching supplies necessary to restore the park infrastructure, as well as appropriate management and anti-poaching capabilities, will be put in place so that the Northern White rhino will be allowed its last possible opportunity to survive in the wild.

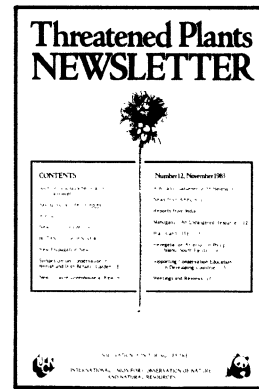
## To The Readers:

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Our subscribers come from a wide range of occupations and activities, but all share an interest in endangered species. The *Technical Bulletin* reaches individuals in private businesses, public utilities, zoos, educational institutions, and conservation organizations. We appreciate your interest and support!

Insert Editor



## INFORMATION ON PLANT CONSERVATION *THREATENED PLANTS NEWSLETTER*

For years botanists have been expressing concern over the threats to survival that face many plant species and the serious degradation that is taking place in the plant kingdom. In 1974 the Threatened Plants Committee (now Threatened Plants Unit) was established by the Survival Service Commission (now Species Survival Commission) of the International Union for Conservation of Nature and Natural Resources to advise the Union on the conservation of plants and to help stimulate action in the plant world. A small secretariat was established at the Royal Botanic Gardens, Kew, in 1975, and today the Threatened Plants Unit (TPU) has become a vital part of the IUCN Conservation Monitoring Centre whose main job is to provide a data base on species of conservation concern and on ecosystems, principally protected areas. The TPU now has a research staff specializing in compiling data on threatened plants from all parts of the world with the aim of drawing attention to their plight and providing the necessary basis for conservation action. This goal is accomplished by establishing a global network of specialists in the scientific community and creating a central data bank of information on threatened plants.

In order to disseminate this information and inspire interest in plant conservation, the Threatened Plants Unit publishes a quarterly newsletter. The newsletter contains articles on national plant conservation programs reporting on the status of endangered plant research in various regions, news from the Botanic Gardens Conservation Co-ordinating Body concerning the cultivation of threatened species in botanic gardens, and activities of plant specialist groups including the areas of ethnobotany, tropical rain forests and island plant species. Up-to-date information regarding CITES plant data and regulations are elaborated through articles submitted by staff members researching plants in trade and who report on the proceedings of CITES meetings. Considerable emphasis is placed on listing and reviewing books on rare and endangered plants throughout the world to keep readers informed of the latest publications. With the launching of the IUCN/WWF Tropical Forest Campaign, articles appear regularly highlighting the critical areas where projects have been funded to save the valuable tropical forests.

The Threatened Plants Newsletter is issued by the IUCN Conservation Monitoring Centre, The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AE, England and is distributed to all collaborators and bona fide conservationists upon request. All inquiries from the Americas should be mailed to Jane Lamlein, Smithsonian Institution, Plant Conservation Unit, Department of Botany, NHB-166, Washington, D.C. 20560.



### Technical Bulletin Insert

A forum for information  
exchange on  
endangered species from

The Wildland Management Center  
School of Natural Resources  
The University Michigan  
Ann Arbor, Michigan 48109  
(313) 763-1312

David F. Hales ..... Director  
Richard Block ..... Editor  
Paul Dahmer ..... Assistant

## BOOK REVIEW



# Ten Years of Implementing the Endangered Species Act

by  
**Lynton K. Caldwell**

Steven Lewis Yaffee. *Prohibitive Policy: Implementing the Federal Endangered Species Act*.  
Cambridge, Mass. and London, England: MIT Press. 1982. Pp. 239.

There are several reasons for reviewing a book, but the most generally useful is to help other readers decide whether they would benefit from consulting it. This book, which is one of the MIT Studies in American Politics and Public Policy, holds special interest for at least three categories of readers. In addition to persons with a general interest in policy formation and implementation, it has special relevance for persons interested in: (a) wildlife preservation, (b) public law (theory and practice), and (c) the adjustment of technical and political considerations in public administration. There are additional inducements to consult this concise, well-written book. For example, it illuminates the uses and limitations of science in public planning and decision-making, the anomalous influence of news media on the execution of policy, and the role of nongovernmental citizen organizations in public affairs.

There are therefore many advantages to be gained from this book. Its main purpose is to examine the effectiveness of explicit prohibition by law as a method of achieving policy objectives. The author identifies three kinds of prohibitive policy and six kinds of arguments for prohibitions rather than more flexible types of legislation. He examines the complaint by critics to prohibition who argue that it is an inefficient method of goal attainment and that cost-benefit or carrot-stick approaches would be preferable. But these arguments assume that prohibitive policy will be implemented prohibitively. In actuality, as the author contends and this study shows, "implementation does indeed include consideration of cost and social trade-offs even if the legislation is prohibitive."

In examining the implementation of the Endangered Species Acts (ESA), the author undertook five case studies, capsule summaries of which are provided in an appendix. They include incidents that aroused special media attention and political controversy, e.g. Furbish Lousewort and Dickey-Lincoln Dam, Houston Toad, Mississippi Sandhill Crane and Interstate Highway 10, Sea Turtles, and Snail Darter and Tellico Dam. In addition, a series of tables illustrates various aspects of the development and administration of the Act, e.g. number of species and critical habitats listed on the official U.S. list from 1967 to 1968, number of species in action taken to implement the Endangered Species Act from 1974 to 1978, and chronology of actions taken to implement the interagency consultation process December 1973 to January 1978. There are exten-

sive notes and a bibliography.

Key provisions of the Act in its earlier stages are summarized. The complete act as amended may be consulted in the U.S. Code, however it would have been helpful if the Act had been reprinted in the appendix. Understanding how and why provisions of an act are interpreted, especially by the courts, is assisted by seeing the several provisions in context. But there is logic in treating the Act as the author has, because it is a secondary focus of the book. The primary focus, as its title indicates, is on "prohibitive policy." The Endangered Species Act provides the substance and institutional record for examining how prohibitory legislation works in practice.

The author succeeded in fulfilling his objective which was to evaluate prohibitive policy in relation to the circumstances that induce it and to assess the positive and negative aspects of its implementation. To accomplish this, however, it was necessary to consider the problem of obtaining effective protection for living species threatened with extinction. Chapters 2 and 3 are largely devoted to this problem, addressing the question, "Why preservation?" and recounting the evolution of federal wildlife and endangered species policy. The nature of the endangered species problem makes it a prime candidate for prohibitory legislation. Extinction is indeed forever, and (as the efforts to establish unequivocal standards for ESA illustrates), science alone has seldom provided reliable guidance for designating a species as "endangered." It thus appears that prohibitory legislation, administered with discretionary flexibility may be the most effective means toward providing protection for endangered species.

Given the relatively few years covered by this study and the far-reaching changes in behavior implied by the ESA, it would be unrealistic to expect the author to provide a conclusive assessment of the effectiveness of the Act. The author notes that the implementation of ESA requires a process of social learning—and learning takes time. This requirement characterizes nearly all of the major environmental legislation enacted in the late 1960s and early to middle 1970s. The purposes of these acts were largely without precedent and their requirements often at variance with traditional American assumptions and behaviors. ESA, like the National Environmental Policy Act (NEPA), will require at least two decades before its impact can be fairly assessed. At least half of these years have been needed for learn-

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## Book Review

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ing how to implement these statutes.

The author does however offer suggestions for the effective implementation of prohibitive policy. The most important of these is the involvement in the decision process of the various groups and interests concerned. The book and case studies show the inevitable participation of concerned actors in formulating and amending the legislation and in applying it to specific cases. Prohibition provides an ultimate sanction that sets the bounds of negotiation and provides incentives for cooperation and compromise among concerned adversaries. Thus statutory prohibition, implemented with the active involvement of all groups interested and affected, has provided the flexibility needed in any realistic public policy without compromising the fundamental purpose of the legislation.

In the final paragraph of the study (p. 162), the author sums up the rationale for this conclusion with an effectiveness that merits repeating here:

The assumed dichotomy between prohibitive policy and public involvement illustrates the tension in our society between technocracy and democracy—one that is mirrored in rational versus consensual policy processes. While we like to think that there are scientific or technical reasons for making policy choices, often there are not. While science can and should inform choice, rarely can it do so definitively. Most policy choices involve fundamental questions of social value—issues for which technicians have only one voice among many. The central issues of the endangered species case—determining what is ethical behavior and what is valuable to protect at what cost—require individual and group assessments of what is moral and what is valued. Economics and biology only help us slightly in making these choices.

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Dr. Caldwell is the Arthur F. Bentley Professor of Political Science at Indiana University. Dr. Steven Yaffee is an associate professor in the School of Natural Resources at the University of Michigan.

## IN THE NEXT TECHNICAL BULLETIN INSERT

Next month the *Insert* will describe the Audubon Ark, a traveling exhibit on endangered species operated by the National Audubon Society and funded by the Celanese Corporation. The article will list the exhibit schedule for February and March.

## SPECIAL THANKS

Jane Lamlein of the Smithsonian's Plant Conservation Unit provided many items of interest in addition to her article on the *Threatened Plants Newsletter*. Paul Dahmer, an undergraduate student in Natural Resources at the University of Michigan, will be assisting in the production of the *Bulletin* as a winter term independent study.

A VERY special thanks to all our subscribers!

## OF INTEREST ...

The Nature Conservancy has produced a conservation film, *The Garden of Eden*, which explains the reasons for protecting the great variety of the world's plant and animal life. Leaders in science, business, and pharmaceutical research show how improved foods, new products, and future medicines are all linked to the preservation of natural ecological systems. For more information write: Nature Conservancy Library, P.O. Box 315, Franklin Lakes, NJ 07417.

## FUTURE MEETINGS

February 24, 1984. Charles Darwin Foundation for the Galapagos to be held at Smithsonian Tropical Research Institute, Panama.

October 29 - 31, 1984. Symposium on the Biogeography of Central America to be held in Merida, Yucatan, Mexico. Persons wishing to attend or give papers can write to one of the following persons by March 1, 1984: Professor Arthur L. Welden, Department of Biology, Dinwiddie Hall, Room 210, Tulane University, New Orleans, Louisiana; Mr. Luis Diego Gomez, Museo Nacional, Aptado. 749, San Jose, Costa Rica; or Dr. Arturo Gomez-Pompa, Director General INIREB, Aptado. 63, Xalapa, Veracruz, 91000, Mexico.

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