



ENDANGERED SPECIES TECHNICAL BULLETIN

Department of the Interior • U.S. Fish and Wildlife Service • Endangered Species Program, Washington, D.C. 20240

President Speeds Federal Critical Habitat Survey

President Carter has directed the Secretaries of Interior and Commerce to coordinate a Government-wide survey of all Federal lands to speed up the identification of Critical Habitat for Endangered and Threatened species.

The survey was ordered by the President in his May 23 environmental message to Congress, "to hasten the protection of threatened and endangered species."

In an accompanying memorandum to the Secretaries of Interior, Agriculture, and Defense and the Chairman of the Tennessee Valley Authority, the President said the Federal Government "should provide leadership in identifying and protecting" habitat that is critical to the survival of species listed under the Endangered Species Act of 1973. The President added: "Federal programs should be coordinated in a way that will provide timely assistance to the Secretary of the Interior and the Secretary of Commerce in determining the habitat which is critical for the survival and recovery of those endangered and threatened species."

Directive Details

The affected Federal agencies were directed by the President to

- Identify, to the extent feasible, in consultation with the Secretary of the Interior and/or the Secretary of Commerce, "areas on lands under your jurisdiction or control which appear to you" to be Critical Habitat.

- Provide data and information to assist the Secretaries of Interior and Commerce "in determining whether or not the areas identified by you constitute critical habitat."

- Exercise caution in the modification of "any area identified by you" and seek consultation with Interior/Commerce concerning any proposed modifications until a Critical Habitat determination is made.

(continued on page 2)

First ES Captive Breeds Designated; Permit Rules Eased for Propagators

New rules have been issued by the Service designating 11 Endangered species being bred in the United States as the first captive, self-sustaining populations (CSSP's). The regulations, contained in a final rulemaking (F.R. 6/1/77), will make it easier for zoos, circuses, game bird breeders, and other propagators of Endangered species to engage in interstate and foreign commerce involving members of the 11 CSSP's.

The Service recognizes that certain species, although clearly Endangered in the wild, are being bred in captivity in such numbers that they qualify for designation as CSSP's.

The 11 CSSP's are as follows:

- brown-eared pheasant (*Crossoptilon mantchuricum*)
- Edward's pheasant (*Lophura edwardsi*)
- bar-tailed pheasant (*Syrmaticus humiae*)
- Mikado pheasant (*Syrmaticus mikado*)
- Palawan peacock pheasant (*Polyplectron emphanum*)
- Swinhoe's pheasant (*Lophura swinhoii*)
- tiger (*Panthera tigris*)

- leopard (*Panthera pardus*)
- jaguar (*Panthera onca*)
- ring-tailed lemur (*Lemur catta*)
- black lemur (*Lemur macaco*)

The ruling, effective immediately, stipulates that these CSSP's (and others added in the future) are determined to be Threatened, whereas wild populations of the same species will continue to be listed as Endangered.

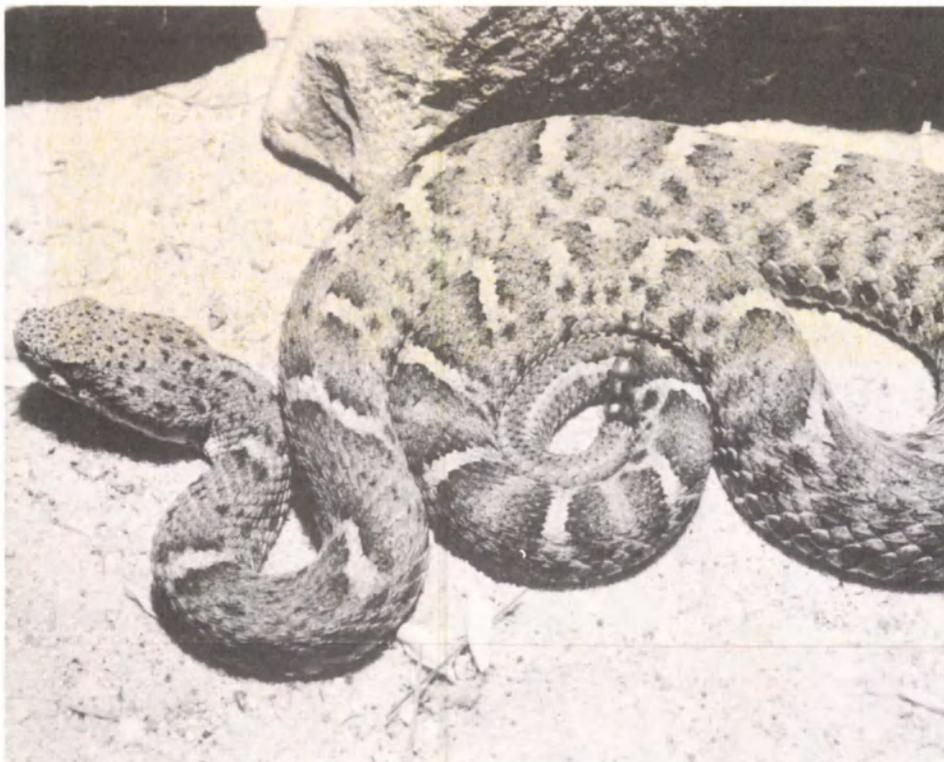
Consequently, special permits for interstate commerce and certain other activities will be made available for CSSP's. However, activities involving animals from Endangered wild populations of these species will still require the more stringent permits normally issued under the provisions of the Endangered Species Act of 1973.

In addition, the ruling amends the permit requirements to buy, sell, import, export, or otherwise deal with CSSP's. Furthermore, to clarify the purposes for which permits may be issued, the ruling defines one of the act's key phrases—"enhancing the survival of the species"—as it relates to all Endangered and Threatened species (not just CSSP's).

(continued on page 3)



White Bengal tiger is among eleven Endangered species that fall under new captive breeding rules in the U.S.



Endangered status and critical habitat have been proposed for the New Mexican ridge-nosed rattlesnake which is threatened with extinction because of overcollecting. An 18-inch specimen of the attractively colored snake commands a \$200 pricetag—live. For rulemaking, see page 5.

**U.S. Fish and Wildlife Service
Washington, D.C. 20240**

Lynn A. Greenwalt, *Director*
(202-343-4717)

Keith M. Schreiner,
*Associate Director and Endangered
Species Program Manager*
(202-343-4646)

Harold J. O'Connor,
*Endangered Species Category
Coordinator*
(202-343-4646)

John Spinks, *Chief,*
Office of Endangered Species
(202-343-5687)

Richard Parsons, *Chief,*
Federal Wildlife Permit Office
(202-634-1496)

TECHNICAL BULLETIN STAFF:

Marshall P. Jones, *Editor*
(202-343-7814)

Dona Finnley, *Assistant Editor*
(202-343-5687)

Clare Senecal, *Assistant Editor*
(202-343-5687)

Regional Offices

Region 1, P.O. Box 3737, Portland OR
97208 (503-234-3361): R. Kahler Martin-
son, *Regional Director*; Edward B.
Chamberlain, *Assistant Regional Direc-
tor*; David B. Marshall, *Endangered
Species Specialist*.

Region 2, P.O. Box 1306, Albuquerque,
NM 87103 (505-766-2321): W. O. Nelson,
Regional Director; Robert F. Stephen,
Assistant Regional Director; Jack B.
Woody, *Endangered Species Specialist*.

Region 3, Federal Bldg. Fort Snelling,
Twin Cities, MN 55111 (612-725-3500);
Jack Hemphill, *Regional Director*; Del-
bert H. Rasmussen, *Assistant Regional
Director*; James M. Engel, *Endangered
Species Specialist*.

Region 4, 17 Executive Park Drive, NE,
Atlanta, GA 30323 (404-526-4671): Ken-
neth E. Black, *Regional Director*; Harold
W. Benson, *Assistant Regional Director*;
Alex B. Montgomery, *Endangered Spe-
cies Specialist*.

Region 5, One Gateway Center, Suite 700,
Newton Corner MA 02158 (617-965-
5100): Howard Larsen, *Regional Direc-
tor*; James Shaw, *Assistant Regional
Director*; Paul Nickerson, *Endangered
Species Specialist*.

Region 6, P.O. Box 25486, Denver Federal
Center, Denver CO 80225 (303-234-
2209): Harvey Willoughby, *Regional
Director*; Charles E. Lane, *Asst. Region-
al Director*; John R. Davis, *Endangered
Species Specialist*.

Alaska Area, 813 D Street, Anchorage, AK
99501 (907-265-4864): Gordon W. Wat-
son, *Area Director*; Henry A. Hansen,
Endangered Species Specialist.

*The TECHNICAL BULLETIN is published
monthly by the U.S. Fish and Wildlife
Service, Department of the Interior, Wa-
shington, D.C. 20240.*

President

(continued from page 1)

- Encourage States and private citi-
zens to join in the identification of
Critical Habitat on lands within the
agencies' jurisdiction or control.

Timetables To Be Set

The President also directed the Secre-
taries of Interior and Commerce to take
the following steps:

1. Develop timetables for the imple-
mentation of his request, to ensure that
the information is compiled "within the
shortest possible time."

2. Provide the necessary guidance
and cooperation to ensure efficient
compliance.

3. Expedite the agencies' determina-
tions of Critical Habitat.

The Endangered Species Program,
within the Department of the Interior,
will act as coordinator of the expanded
effort to identify Critical Habitats.

FWS Budget Increase

In his May 23 message, President
Carter requested Congress to increase
the Fish and Wildlife Service's FY 1978
budget by \$23 million. The additional
funds would be used for environmental
research, for migratory bird protection,
and for aiding State endangered species
programs.

Presidential Initiatives

The President also took the following
wildlife management initiatives:

- *Exotic species:* Executive Order No.
11987 was issued restricting the intro-
duction of exotic animals and plants into
the United States. The order prohibits
the establishment of such species on
lands and waters managed by the
Federal Government, unless the Secre-
tary of Interior or Agriculture determines
that there will be no adverse effects on
natural ecosystems. The President also
directed the Secretary of the Interior, in
consultation with the Secretary of Agri-
culture and the heads of other agencies,
to develop additional rules dealing with
the import and export of exotic species.

- *Conservation laws:* The President
said recent laws enacted to conserve
wildlife "pose the risk of creating a
confusing system of overlapping and
conflicting requirements." Accordingly,
he directed the Council on Environmen-
tal Quality to perform a six-month study
to develop steps that could be taken to
simplify, coordinate, and codify the
body of law affecting wildlife conserva-
tion. The study is to be done in consulta-
tion with the States and Federal agen-
cies.

Use of Poisons

Mr. Carter pledged his administration
to continue support of a previous
Presidential order prohibiting the rou-
tine use of poisons for killing predators
on public lands. "If control is necessary,"
he said, "it should focus on the individual
predators causing the problem—not the
species as a whole."

Rulemakings

(continued from page 4)

Predation and competition by introduced mammals also have contributed to the increasing scarcity of the three proposed species, as well as other native reptiles. Although hunting of goats and pigs is now allowed, there are no other provisions for curbing predators and competitors on the island. Furthermore, visiting hunters occasionally kill Mona boas and Mona Island ground lizards.

Increased Protection Needed

At present, the three proposed species are afforded only limited protection under law.

International trade in Mona Island ground lizards and Mona boas is regulated, in that all species of ground iguanas and boas are listed for protection under Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

Under Puerto Rican law, public hunting is not allowed on Mona Island during the iguana nesting season. Furthermore, it is forbidden to kill iguanas or collect their eggs without a special permit from the Puerto Rico Department of Natural Resources.

There are no existing regulations that specifically provide protection for either the Mona boa or the Mona blind snake.

New Mexican Ridge-Nosed Rattlesnake

The Service has issued a proposed rulemaking to add the New Mexican ridge-nosed rattlesnake (*Crotalus willardi obscurus*) to the Endangered list and to designate the snake's range in southwestern New Mexico as Critical Habitat (F.R. 5/26/77).

The U.S. range of this subspecies covers a total area of no more than a few square miles. It consists primarily of portions of Indian Creek Canyon and Bear Creek Canyon, in the Animas Mountains of Hidalgo County. Characterized by pine-oak woodland, these canyon areas lie between 6,200 and 8,000 feet above sea level.

The New Mexican ridge-nosed rattlesnake is also found in a comparable environment in the Sierra de San Luis, located in the adjoining Mexican state of Chihuahua.

Overcollection constitutes the principal threat to both the U.S. and Mexican populations. Although the snake was relatively abundant when discovered in 1961, collection has greatly reduced its numbers. Its attractive coloration, very limited range, and increasing rarity have resulted in a growing demand for both scientific and commercial purposes. A small (18-inch-long) live specimen now commands a market price of more than \$200.

Consequently, demand also has resulted in some environmentally destructive collection activities, such as the use of dynamite to expose the snake's dens.

Another major consideration is that economic development in the nearby Playas Valley, which is the proposed site of a copper ore reduction plant and associated facilities for its workers, could result in increased recreational use of the Animas Mountains. This is likely to have an adverse effect on the snake and its habitat.

The New Mexican ridge-nosed rattlesnake currently is listed as endangered by the State of New Mexico. In addition, the Service has entered into agreement with the local cattle company that owns the two canyons to close the areas to all collectors. However, evidence indicates that, unless the snake is given full protection, its decline will continue to the point of extinction.

Based on a study by Dr. Herbert S. Harris of the Natural History Society of Maryland, the Service proposes to list all elevations in the Animas Mountains above 6,200 feet as Critical Habitat for the snake.

Comments on this proposed rulemaking should be submitted to the Service by August 24, 1977.

Atlantic Salt Marsh Snake

Threatened status has been proposed by the Service for the Atlantic salt marsh snake (*Natrix fasciata taeniata*), found only in three counties on the Atlantic coast of central Florida (F.R. 6/2/77).

Comments on this proposed rulemaking are due by September 1, 1977.

Background

Although it was already identified and described before 1900, this snake remains one of the least-known North American reptiles, perhaps because its habitat traditionally has been inhospitable to man.

There are no available estimates of the present population of the subspecies. As of 1974, only 35 individual specimens were known to science—that is, were held in museum collections—and only one study had been conducted on the subspecies (Carr and Goin, 1942).

Recently, however, a new study on the physiology of the Atlantic salt marsh snake has been undertaken by Howard I. Kochman of the Florida State Museum.

(continued on page 6)

TURTLES PROPOSED FOR STATUS REVIEW

The Service has announced that it will review the status of 12 species of turtles to determine whether any or all of them should be proposed for listing as either Endangered or Threatened species (F.R. 6/6/77).

Comments are due by August 5, 1977. In addition to inviting responses

from any interested parties, the Service is seeking the views of the governors of the States where these species of turtles are known to be found.

The species to be reviewed are listed in the table below.

Common Name	Scientific Name	Distribution
Alabama red-bellied turtle	<i>Chrysemys alabamensis</i>	Alabama
Suwanee cooter	<i>Chrysemys concinna suwanniensis</i>	Florida, Georgia
Red-bellied turtle	<i>Chrysemys rubriventris</i>	Delaware, Maryland, Massachusetts, New Jersey, North Carolina, Virginia
Cagle's map turtle	<i>Graptemys caglei</i>	Texas
Yellow-blotched turtle	<i>Graptemys flavimaculata</i>	Mississippi
Ringed sawback	<i>Graptemys oculifera</i>	Louisiana, Mississippi
Sabine map turtle	<i>Graptemys pseudogeographica sabinensis</i>	Louisiana, Texas
Texas map turtle	<i>Graptemys versa</i>	Texas
Key mud turtle	<i>Kinosternon bauri bauri</i>	Florida
Illinois mud turtle	<i>Kinosternon flavescens spooneri</i>	Illinois, Iowa, Missouri
Flattened musk turtle	<i>Sternotherus depressus</i>	Alabama
Black-knobbed sawback	<i>Graptemys nigrinoda</i>	Alabama, Mississippi



Black-knobbed sawback

Photos by Robert H. Mount



Ringed sawback

Rulemakings

(continued from page 5)

ES Act Protection

The subspecies currently is known in 10 localities of Volusia, Brevard, and Indian River Counties. These localities provide a brackish- and salt-water environment consisting of tidal creeks and salt marshes.

Intensive drainage and economic development have reduced the habitat available to the snake. If it continues unabated, the subspecies may be driven to extinction.

Habitat alteration is breaking down the ecological isolating barriers that separate the varieties of salt marsh snakes occurring along the Florida coast. Consequently, hybridization among subspecies could begin, and this would significantly reduce the Atlantic salt marsh snake population.

The Florida Committee on Rare and Endangered Plants and Animals already has listed this subspecies as endangered. However, based on data supplied by Howard Kochman, the Service has tentatively concluded that the snake should be designated as a Threatened species under the Endangered Species Act of 1973. Such a designation would give the subspecies considerable protection against collection, thereby enhancing the likelihood of its continued existence.

Pending Rulemakings and Notices of Review

The Service expects to issue rulemakings and notices of review on the subjects listed below during the next 90 days. The status or action being considered for each final and proposed rulemaking is given in parentheses.

The decision on each final rulemaking will depend upon completion of the analysis of comments received and/or new data made available, with the understanding that such analysis may

BOX SCORE OF SPECIES LISTINGS

Category	Number of Endangered Species			Number of Threatened Species		
	U.S.	Foreign	Total	U.S.	Foreign	Total
Mammals	36	227	263	2	17	19
Birds	67	144	211	1		1
Reptiles	9	46	55	1		1
Amphibians	4	9	13	1		1
Fishes	30	10	40	4		4
Snails		1	1			
Clams	22	2	24			
Crustaceans						
Insects	6		6	2		2
Plants						
Total	174	439	613	11	17	28

Number of species currently proposed: 97 animals
1850 plants (approx.)

Number of Critical Habitats proposed: 45
Number of Critical Habitats listed: 7
Number of Recovery Teams appointed: 57
Number of Recovery Plans approved: 8
Number of Cooperative Agreements signed with States: 17

June 6, 1977

result in modification of the content or timing of the original proposal, or the rendering of a negative decision.

Pending Final Rulemakings

- Bald eagle (modification of status in Lower 48 States)
- Leopard darter (Threatened and Critical Habitat)
- Slackwater darter, Alabama cavefish, spotfin chub, slender chub, yellowfin madtom (Threatened and Critical Habitat)
- 26 snails (Endangered and Threatened)
- 6 butterflies (Critical Habitat)
- Contra Costa wallflower and Antioch Dunes evening primrose (Critical Habitat)
- Giant anole (Endangered)
- San Clemente Island species (Endangered)
- 14 plants (Endangered and Threatened)
- Florida Everglade kite (Critical Habitat)
- Peregrine falcon, California (Critical Habitat)
- Palla, Hawaii (Critical Habitat)
- Cape Sable sparrow, Florida (Critical Habitat)
- Dusky seaside sparrow, Florida (Critical Habitat)

- Morro Bay kangaroo rat, California (Critical Habitat).

Pending Proposed Rulemakings

- Ozark big-eared bat (Endangered)
- Virginia big-eared bat (Endangered)
- African elephant (similarity of appearance to Asian elephant)
- Timber wolf (modification of status in Lower 48 States)
- 11 beetles (Endangered and Threatened)
- Puerto Rican whip-poor-will (Critical Habitat)
- Laysan duck (Critical Habitat)
- 2 harvestmen and 1 snail (Endangered and Threatened)

Pending Notices of Review

- Status of bobcat and lynx
- Status of river otter

Reference Note

All Service notices of review and final and proposed rulemakings are published in full detail in the *Federal Register*. The parenthetical references given in the BULLETIN—for example, (F.R. 6/20/77)—identify the date that the notice or rulemaking appeared in the *Federal Register*.



ENDANGERED SPECIES TECHNICAL BULLETIN

Department of the Interior • U.S. Fish and Wildlife Service • Endangered Species Program, Washington, D.C. 20240



POSTAGE AND FEES PAID
U.S. DEPARTMENT OF THE INTERIOR

June 1977 Vol. II, No. 6

CSSP's

(continued from page 1)

At the time of the final rulemaking, the Service's Federal Wildlife Permit Office had 35 permits in various stages of processing. Applications had been submitted on the basis of the proposed rulemaking by individuals and organizations that were eager to participate.

Anticipated Effect

Underlying the CSSP rulemaking is the recognition by the Service that survival of Endangered species in captivity can assist in furthering the intent of the Endangered Species Act of 1973. Captive individuals provide gene pools that deserve continued preservation, and their increasing numbers may make it possible to reestablish or rejuvenate wild populations.

The successful maintenance of CSSP's usually depends on zoos and other propagators being able to effectively transfer breeding stock and progeny. This activity is generally expensive, however, and requires a major investment in facilities, food, personnel, and other items. Success in this activity often depends on the propagator's ability to sell surplus animals to help meet expenses.

The Service's interest in this matter is not the profitability of transactions involving CSSP's, but the need for maintaining the CSSP's themselves.

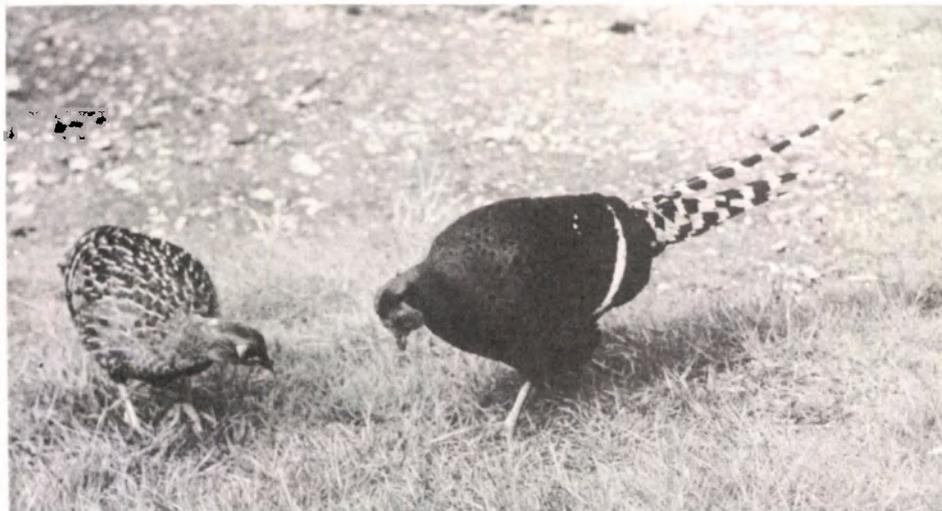
The dual purpose of this rulemaking, therefore, is to permit qualified institutions and individuals who breed and raise Endangered species in captivity to buy and sell certain of these animals in interstate commerce, and to continue to provide all such species with full protection under the Endangered Species Act of 1973.

The direct effect on propagators will be a reduction in the degree of regulation of captive animal populations that meet the criteria established to determine that they are self-sustaining. Explains Endangered Species Program Manager Keith M. Schreiner: "The new rule will reduce regulation of the breeders' activities and relieve them of undue paperwork, delays, and a cumbersome permit procedure."

Comments Received

Following issuance of the rulemaking in proposed form (F.R. 5/5/76), the Service received a total of 52 comments from individuals, organizations, and State governments. There were 17 responses from zoos and zoological societies, 10 from State governments, 9 from bird breeders, 6 from conservation organizations, 4 from circuses and related organizations, 4 from private individuals, and 1 each from an animal dealer and a falconry club.

These responses covered such subjects as the criteria to be used for determination, the species proposed for CSSP determination, enhancement of



Game Bird Gazette photo

A pair of Mikado pheasants, CSSP game birds

species survival, and the overall CSSP permit system. Based on a careful and extensive review of these comments, the Service revised the original proposal and issued the final rulemaking.

CSSP Determination Criteria

The criteria for determining CSSP status remain essentially unchanged. The following data are needed as the basis for a CSSP determination:

1. The approximate number of living specimens of the species that exist in captivity in the United States.
2. The age and sex of such captive specimens.
3. The number of people who have successfully bred them in captivity.
4. The number of generations that have been successfully bred in captivity.
5. The likelihood that persons owning or controlling captive specimens will cooperate in ensuring continued reproduction among specimens.
6. The number of requests received by the Service to take or import wild specimens of the same species during the 2 years immediately prior to the date on which consideration of the species was undertaken.
7. The ratio of wild-born to captive-born specimens in captivity in the United States.
8. Such other factors as the Director of the Service may deem appropriate.

The First CSSP's

The original proposal listed a total of 16 candidates for CSSP determination. One of these, the white-eared pheasant (*Crossoptilon crossoptilon*) was removed from consideration because there appeared to be too few individuals in captivity—that is, no more than 48 of the birds. However, it was agreed to reconsider the status of this species if and when additional data are submitted to the Service.

Four other species were deleted from the original CSSP list as a result of the Service's decision to preclude from consideration any Endangered species that is native to the United States. The

Service believes that listing any such species as a CSSP would seriously weaken effective protection of the species, because individuals unlawfully captured in the wild could be falsely described as belonging to a CSSP.

Survival Enhancement

The Service has broadened the definition of the phrase "enhancing the survival of the species," making it applicable to both Endangered and Threatened species, including CSSP's. Furthermore, in response to several comments, the Service has added to its list of permitted activities.

The principal addition is a provision for euthanasia of animals that are terminally ill, critically injured, or infirm because of old age or genetic defects. Also permitted under certain conditions is the live exhibition of animals so as to educate the public concerning the ecological roles of, and the need to conserve, Endangered and Threatened species.

Permit Requirements

The CSSP permit, obtainable with one application and valid for 2 years (and renewable thereafter), can authorize a single activity, a series of activities or unlimited activities involving CSSP's. This simplified permit procedure no longer makes it necessary, as in the past, to apply for separate permits for each activity and each specimen.

The paperwork burden has been reduced by eliminating, in most cases, the requirement for annual written reports. Instead, permit holders are to report their transactions on a new, multi-copy form to be provided by the Service. Data from the completed forms will enable the Service to monitor the status of captive animals of certain species in the United States and to ensure that they will continue to reproduce successfully in captivity.

Additional information on the permit requirements is available from the Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240.

Rulemaking Actions May-June 6, 1977

FINAL RULINGS

Marianas Mallard

The Service has issued a final rulemaking that determines the Marianas mallard (*Anas oustaleti*) to be an Endangered species (F.R. 6/2/77). This ruling takes effect on July 5, 1977.

The Marianas mallard has been found only on the islands of Guam, Rota, Saipan, and Tinian, all of which are located in the Mariana Islands in the western Pacific Ocean.

The duck's habitat consists of freshwater lakes with reed beds, lagoons, streambeds, and flooded fields. Because these wetlands are being extensively drained, the duck's essential habitat is shrinking rapidly. Duck hunting also poses a threat to this species.

The Marianas mallard is now very rare and its numbers are decreasing. Population estimates indicate that there may be as few as two of the birds alive today and probably no more than twenty-five. Although the Endangered listing will provide these remaining birds with full protection under the Endangered Species Act of 1973, it is possible that the species already has declined to the point where it no longer can be found on one or more of the islands identified as its habitat.

Background

On May 22, 1975, the Fund for Animals, Inc. asked the Service to list a total of 216 taxa of plants and animals as Endangered species under the terms of the Endangered Species Act of 1973. Although not on the U.S. list of Endangered species, all 216 species were already included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

In response to the Fund's request, the Service issued a proposed rulemaking that would have determined the 216 species—including the Marianas mallard—to be Endangered (F.R. 9/26/75). Subsequently, the Service issued a final rulemaking (F.R. 6/14/76) listing 159 of the 216 species as Endangered (See July 1976 issue of the BULLETIN).

Owing to a procedural oversight, however, the Marianas mallard was not included in this final rulemaking. As a result, the Service has now proceeded to issue this separate final ruling.

St. Croix Ground Lizard

In a final rulemaking on the St. Croix ground lizard (*Ameiva polops*), the Service has determined that the species should be listed as Endangered and that its remaining range in the U.S. Virgin Islands should be designated as Critical Habitat (F. R. 6/3/77).

None of the comments on the original proposal (F.R. 1/10/77; see also Febru-

ary 1977 issue of BULLETIN) recommended any changes. Consequently, the final ruling is identical with the proposal. The ruling becomes effective on July 5, 1977.

PROPOSED RULINGS

Houston Toad

To protect remaining populations of the Houston toad (*Bufo houstonensis*), eight separate areas in southeastern Texas have been proposed by the Service for designation as Critical Habitat for the species (F.R. 5/26/77).

Discovered in 1953 and listed as Endangered since 1970, the Houston toad is a relict species that ranks among the rarest and most critically endangered amphibians in the United States.

A small brown toad that lives solely in isolated stands of loblolly pine, it is seldom seen other than during the

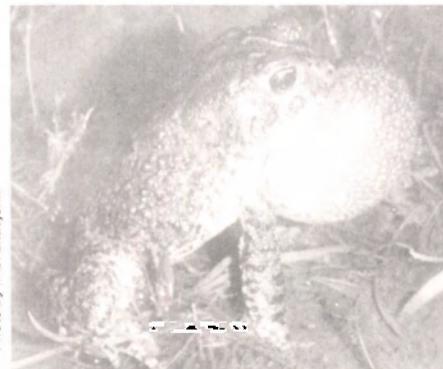


Photo by M. J. Littlejohn

A rare picture of a Houston toad

breeding season, which lasts from late February until late June.

Unlike other toads, this species forms only small breeding groups, which reproduce in rainwater pools that occur in the porous sandy soils of the pine stands. This breeding characteristic has enabled the species to maintain its integrity and avoid reproductive competition with the southern toad (*Bufo valliceps*) and the Woodhouse toad (*B. woodhousei*), which occur in the same region but require relatively permanent bodies of water in order to reproduce.

The Houston toad is found only in eight localities—six in Harris County and one each in Bastrop and Burleson Counties. Based on the findings and recommendation of Dr. Robert A. Thomas of Texas A & M University, the Service has determined that these eight localities constitute the Critical Habitat of the toad.

The chief threat to the species is agricultural and urban expansion, especially in Harris County, which includes the rapidly growing city of Houston and major suburbs.

Comments on this proposal should be submitted by August 24, 1977.

Three Mona Island Reptiles

The Service has proposed listing three Mona Island reptiles as Threatened and designating the island as their Critical Habitat (F.R. 5/26/77).

The three reptiles, all unique to Mona Island, are the Mona boa (*Epicrates monensis*), the Mona Island ground iguana (*Cyclura stejnegeri*), and the Mona blind snake (*Typhlops monensis*).

Comments on this proposed rulemaking are due by August 24, 1977.

Background

Officially part of the Commonwealth of Puerto Rico, Mona Island is located in Mona Passage midway between Puerto Rico and the Dominican Republic, about 42 miles west of Puerto Rico.

The 21.35-square-mile island is mostly a semi-arid, hilly expanse of limestone and dolomite covered by low dry forest and shrubs.

The island's vegetation includes almost 400 vascular plant species, of which 11 percent currently may be either rare or endangered.

Fauna include a few crustaceans, over 500 species of insects, several noninsect invertebrates, and almost 100 species of birds (including the eastern brown pelican, the peregrine falcon, and the yellow-shouldered blackbird, all of which are on the U.S. List of Endangered and Threatened Wildlife).

The hawksbill sea turtle uses the beaches of Mona Island extensively for nesting; in fact, the island is one of the hawksbill's last remaining nesting areas. (In addition, the island's beaches may also be used for nesting by other species of sea turtles.)

Mona Island supports eight other species of reptiles, including the three proposed for Threatened status. Five of these reptiles are lizards.

There are only two species of native mammals, both of them bats. However, introduced mammals such as mice, rats, cats, goats, and pigs are numerous, and they all either prey on or compete for food with native species.

Threatened Reptiles

The principal threat to the three proposed species is the possibility of extensive economic development of the island. Current plans call for the establishment of a major oil superport.

Although construction is not imminent, the Service believes that implementation of these plans would result in a severe reduction of available habitat, especially nesting areas, for the three species.

(continued on page 5)