

# Report to the Congress OF THE UNITED STATES

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## Endangered Species - A Controversial Issue Needing Resolution

The Department of the Interior must improve its management of the endangered species program to prevent the extinction of endangered and threatened species and insure their recovery. This report examines private projects and the special critical habitat process used by the Department.

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CEG-79-65  
JULY 2, 1979

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COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON, D.C. 20548

B-118370

To the President of the Senate and the  
Speaker of the House of Representatives

This report describes management improvements and  
legislative amendments needed for effective implementation  
of the Endangered Species Act, as amended.

Copies of the report are being sent to the Director,  
Office of Management and Budget, and the Secretary of  
the Interior.

A handwritten signature in black ink, appearing to read "James A. Stroh".

Comptroller General  
of the United States



D I G E S T

In this report, GAO is making 16 management improvement recommendations to provide greater protection to endangered and threatened species while minimizing their impact on Federal, State, and private projects and programs. (See pp. 37 to 38, 49, and 93.)

If GAO's recommendations are not implemented by the Secretary of the Interior, existing deficiencies could:

- Jeopardize the existence of some endangered and threatened species or result in the selective extinction of others.
- Create unnecessary conflicts with some Federal, State, and private projects and programs.
- Delay consultations with other Federal agencies to resolve potential conflicts between species and projects or programs, delaying actions and increasing costs.
- Limit efforts to protect and recover endangered and threatened species through habitat acquisition, enforcement, etc.

At the same time, the Congress should not increase funding for consultations with other Federal agencies to resolve potential conflicts between endangered/  
~~threatened species and Federal projects and programs until the Fish and Wildlife Service demonstrates that it needs the resources.~~ (See p. 50.)

(CED-79-65)

GAO also is recommending that the Congress no longer fund endangered species land acquisitions inconsistent with Service policies and program criteria. (See p. 94.) Examples of funded land acquisitions not consistent with Service policies and/or program criteria are

--Kealia Pond on the Island of Maui, Hawaii, being purchased for approximately \$6.4 million even though viable alternatives to Federal acquisition exist (see pp. 79 to 83) and

--Sugar Loaf Key in Florida, being acquired for approximately \$1.4 million even though Service officials cannot justify that its acquisition is needed to recover the Key deer. (See pp. 83 to 85.)

GAO is recommending that the Congress, *should* further amend the Endangered Species Act to:

--Limit the act's protection to species endangered or threatened throughout all or a significant portion of their ranges. The act permits the Service to list geographically limited populations of species even though the species as a whole may not be endangered or threatened. Such listings could increase the number of potential conflicts with Federal, State, and private projects and programs. (See pp. 52 to 60.)

--State clearly that the Endangered Species Committee is authorized to grant permanent exemptions from the act's protective provisions to Federal projects committed to or under construction before November 1, 1978 (the date the 1978 amendments were enacted), and to all Federal programs not involving construction, such as timber harvesting, livestock grazing, and recreational development. Unless the act is clarified, the lengthy consultation process may have to be started

and these projects and programs stopped each time an affected species is listed and a potential conflict is identified. (See pp. 60 to 64.) Of course, the act would continue to require that the Endangered Species Committee reconsider any permanent exemption which would result in the extinction of a species found later, and neither the act nor this amendment precludes the Congress from exempting a specific project or program after weighing its costs and potential benefits against the importance of conserving the species.

<sup>and</sup>  
~~Require Federal agencies to consider a project's or program's impact on species suspected of being endangered or threatened, but not yet listed officially.~~ Unless considered, the survival of species already identified by the Service for listing as endangered or threatened could be jeopardized and projects could be stopped after construction has begun if the Service finds that they will result in the extinction of a species not adequately considered in the consultation process. (See pp. 64 to 66.)

Proposed amendments to incorporate these recommendations are included as appendix VII. (See pp. 106 to 110.)

#### IMPLEMENTATION PROCESSES

The endangered species program consists of three processes--listing, consultation, and recovery.

In the listing process, species are selected for review and listing in the Federal Register as endangered or threatened. Listed species are delisted or reclassified when their statuses change. Listing is critically important because it sets in motion all the other provisions of the act, including protective regulations, consultation requirements, and recovery funding.

After a Federal agency identifies an action that may affect a listed species or its habitat, the formal consultation process begins when the agency makes a written request to the Service for consultation. It ends when an opinion is rendered by Interior on the action's impact on the species.

Recovery efforts are undertaken by Federal agencies to return listed species to a point where they no longer are endangered or threatened, or to at least stabilize their existence.

### THE LISTING PROCESS

Deficiencies in the listing process--the cornerstone of the act--had threatened effective implementation of the entire endangered species program. The Service had not implemented many of the basic policies, procedures, and practices needed to achieve program objectives. Those that had been implemented were often inadequate to evaluate the effectiveness, efficiency, and economy of program management decisions. (See pp. 9 to 36.) For example, the Service had not:

- Applied consistently existing policies, procedures, and practices used to list species. This could jeopardize the existence of some species while increasing conflicts with State and private projects and programs. (See pp. 11 to 20.) In one case, nine species identified in a March 30, 1977, memorandum by the Service Director as being directly or indirectly jeopardized by completion of the Columbia Dam project on the Duck River in Tennessee had not been listed.
- Reviewed periodically listed species or established adequate criteria to determine if their statuses had changed. Consequently, species could continue to be listed improperly, creating



unnecessary conflicts with Federal, State, and private projects and programs and resulting in resources being spent needlessly for recovery efforts on these species. (See pp. 20 to 24.)

--Requested staff and funds for the listing process commensurate with its priority within the endangered species program. Only 18 of the 323 staff involved in the program were assigned primarily to the listing process. This limited both the number of listings in fiscal year 1978 to 41 species and needed status surveys on listed and unlisted species. (See pp. 30 to 34.)

#### THE CONSULTATION PROCESS

The Department of the Interior had improved its consultations with other Federal agencies on the impact their projects and programs may have on endangered and threatened species. However, conflicts involving ongoing and planned Federal projects and programs had not always been identified or resolved promptly. (See pp. 39 to 46.)

Moreover, the Service had not developed adequate procedures to identify the number and complexity of consultations so that staff and other resources could be allocated accordingly. The projected number of consultations and associated costs used by the Service to justify over \$2.1 million in increased funding for consultations in fiscal year 1979 had proven inaccurate. (See pp. 46 to 48.)

#### THE RECOVERY PROCESS

The Fish and Wildlife Service had limited success in improving the status of species requiring simple actions, especially single land acquisitions. However, progress had been slow in effecting the recovery or stabilization of species requiring more involved plans.

To illustrate, the California condor recovery plan, approved by the Service in April 1975, had not been effective in improving the species' status. Although many of the plan's actions had been implemented, including over \$500,000 for land acquisitions and various research studies, the condor population had decreased from about 60 to 30 birds.

In a report dated June 1978, an advisory panel appointed jointly by the American Ornithologists Union and the National Audubon Society found that the recovery plan's stated goals were shortsighted and unnecessarily conservative and that the plan was an attempt to maintain the species precariously on the brink of extinction.

To increase the condor population, the recovery team had proposed a contingency plan that included a captive breeding program. The condor advisory panel also reviewed this proposal and recommended that the breeding program not begin until identified defects were corrected.

Progress in effecting the recovery or stabilization of species had been slow, in part because:

- Few recovery plans had been developed and implemented. Recovery plans are needed to order priorities and identify additional actions deemed essential to the survival or recovery of the species. (See pp. 70 to 77.)
- Funds had been appropriated to acquire additional land for species whose degree of threat had diminished and/or when viable alternatives to Federal acquisition existed. This had permitted the status of other species to become more precarious because essential habitat had not been acquired and had increased the number of Federal land acquisitions and corresponding funds expended. (See pp. 77 to 85.)

--Violators had not been deterred by strong enforcement and prosecution under the act, and endangered and threatened species had not been protected adequately. (See pp. 87 to 91.)

#### APPRAISAL OF AGENCY COMMENTS

On March 12, 1979, a copy of GAO's draft report was sent to Interior for comments. In response, Interior provided a 4-page summary letter, dated April 17 (see app. XI) with a 105-page enclosure of comments and suggested revisions and another 136 pages of documentation. The letter stated that the draft report was in need of extensive revision and the data was in need of extensive reanalysis before the report could attain an acceptable standard of accuracy and soundness.

Some of Interior's comments were useful for making corrections, providing greater clarity and balance throughout the report. However, other comments either were contradictory with previous information received from Interior or other sources, irrelevant to the issues at hand, or inaccurate. Several of GAO's conclusions, incorrectly construed by Interior officials to be biological in nature, were clarified.

After carefully considering each of Interior's comments and meeting with Service officials, Interior was provided a revised copy of the draft report on May 24, 1979. Additional meetings were held with Interior officials in May and June 1979 to assure that Interior's positions were identified accurately in the appropriate sections of the report.

On June 15, Interior provided final comments on the revised draft report. (See app. XII.) Overall, Interior agreed with several of GAO's recommendations, rejected some, and withheld comment on others. In no instance did Interior's comments identify an error of fact serious enough to warrant revising a finding, conclusion, or recommendation.



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ABBREVIATIONS

FWS	U.S. Fish and Wildlife Service
GAO	General Accounting Office

## GLOSSARY

Biological assessment	A survey conducted by a Federal agency to identify any listed or proposed endangered or threatened species which is likely to be affected by a proposed action.
Biological opinion	A written statement of opinion by the Secretary of the Interior and a summary of the information on which the opinion is based, detailing how a Federal agency's action affects listed endangered or threatened species or their critical habitats.
Candidate species	A species identified by Fish and Wildlife Service biologists as eligible for listing as endangered or threatened in the near future, but for which a proposed regulation has not been published in the Federal Register.
Conflict	A set of circumstances under which completion of a Federal action would jeopardize the continued existence of an endangered or threatened species or result in the adverse modification or destruction of a critical habitat.
Critical habitat	The specific areas within the geographical area occupied by a species at the time it is listed as endangered or threatened that have those physical or biological features essential to conserve the species and that may require special management consideration or protection. Critical habitat may also include specific areas outside the geographical area occupied by a species at the time it is listed, if the Secretary of the Interior determines that the areas are essential for conservation of the species.
Endangered species	Any species which is in danger of extinction throughout all or a significant portion of its range.



Federal action	Any project or program authorized, funded, or carried out by Federal agencies in whole or in part, examples of which include but are not limited to (1) actions intended to conserve listed species or their habitats, (2) promulgation of regulations, (3) granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid, and (4) actions directly or indirectly causing modifications to the land, water, or air.
Geographically limited population	A group of a species located in a geographical area within the species' existing range.
Invertebrate	Any animal, other than a mammal, fish, bird, reptile, or amphibian, without a backbone or spinal column.
Listed species	A species for which a final regulation adding the species to the list of endangered and threatened species has been published in the Federal Register.
Proposed species	A species for which a regulation proposing to add the species to the list of endangered and threatened species has been published in the Federal Register.
Threatened species	Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
Vertebrates	All mammals, fishes, birds, reptiles, and amphibians characterized by a segmented spinal column and a brain enclosed in a brainpan or cranium.



## CHAPTER 1

### INTRODUCTION

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The endangered species program is one of the 14 national programs administered by the Department of the Interior's U.S. Fish and Wildlife Service (FWS). Its goals are to prevent endangerment and extinction of plant and animal species caused by man's influence on existing ecosystems and to return threatened and endangered species to the point where they are no longer threatened or endangered. Appropriations for the program totaled over \$16.5 million in fiscal year 1978.

### LEGISLATIVE HISTORY OF THE ENDANGERED SPECIES PROGRAM

Growing concern over the impact economic growth and development are having on this Nation's wildlife led to enactment of Public Law 89-669, commonly referred to as the Endangered Species Preservation Act of 1966. This act directed the Secretary of the Interior to prepare and maintain an official list of endangered native animals and authorized funds for management of endangered species. The act also made funds available from the Land and Water Conservation Fund Act of 1965 to acquire endangered species habitat. Public Law 91-135, enacted on December 5, 1969, prohibited importation into the United States of any species determined by the Secretary to be in danger of worldwide extinction. The 1966 and 1969 acts together became known as the Endangered Species Conservation Act of 1969.

The Endangered Species Act of 1973 (16 U.S.C. 1531-1543) greatly increased the authority and scope of FWS's endangered species program. The act expanded FWS's authority to list threatened as well as endangered species, increased the degree of protection afforded these species, directed all Federal agencies to use their authorities to develop conservation programs to protect and enhance endangered and threatened species, encouraged public participation in Federal listing and protection actions, and provided for the States to play a major role in implementing the endangered species act.

The interagency cooperation provisions (section 7) were considered to be the most far-reaching protection tool in the 1973 act. Federal agencies were prohibited from authorizing, funding, or carrying out actions, such as dam construction, timber harvesting, livestock grazing, and wetland dredging, which would jeopardize the continued existence of any endangered or threatened species or destroy or adversely

modify their critical habitats. Acting under this provision, the Supreme Court, in June 1978, blocked completion of the Tellico Dam in Tennessee when it concluded that the project would jeopardize the existence of a 3-inch-long perch, the snail darter. (See photos on pp. 3 and 4.) This decision and growing concern that other Federal projects and programs may be stopped, regardless of the benefits to be derived, ultimately led to the Endangered Species Act Amendments of 1978, which were intended to introduce flexibility into the 1973 act without violating its integrity.

New exemption process provides  
needed balance

Prior to the Endangered Species Act Amendments of 1978, Federal agencies were precluded from taking any action, regardless of the benefits to be derived, that would jeopardize survival of an endangered or threatened species. Recognizing the inflexibility of the 1973 act and its impact on Federal projects and programs, the Congress established a high-level Endangered Species Committee 1/ to weigh the importance of conserving a species against the need for a Federal action. The Committee may grant an exemption from the protective provisions of section 7 if five of its seven members voting in person determine that the benefits of a Federal action, which is of regional or national significance and is in the public interest, clearly outweigh the benefits of conserving a species or its critical habitat and that no reasonable and prudent alternatives to the Federal action exist.

The 1978 amendments are designed to prevent Federal agencies from making irreversible and irretrievable commitments of resources which jeopardize the continued existence of listed species before an exemption is granted. Prior to the 1978 amendments, Federal agencies could ignore the Secretary of the Interior's biological opinions which identified how Federal actions could jeopardize endangered and threatened species and their critical habitats.

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1/Members are the Secretaries of the Interior, the Army, and Agriculture; the Chairman of the Council of Economic Advisers; the Administrators of the Environmental Protection Agency and the National Oceanic and Atmospheric Administration; and a representative from each affected State.

A SNAIL DARTER

PHOTOGRAPH COURTESY OF THE TENNESSEE VALLEY AUTHORITY





PHOTOGRAPH COURTESY OF THE TENNESSEE VALLEY AUTHORITY

**GAO AUDITORS WITH A TENNESSEE VALLEY AUTHORITY OFFICIAL VIEWING THE NEARLY COMPLETED  
TELLICO DAM IN TENNESSEE**

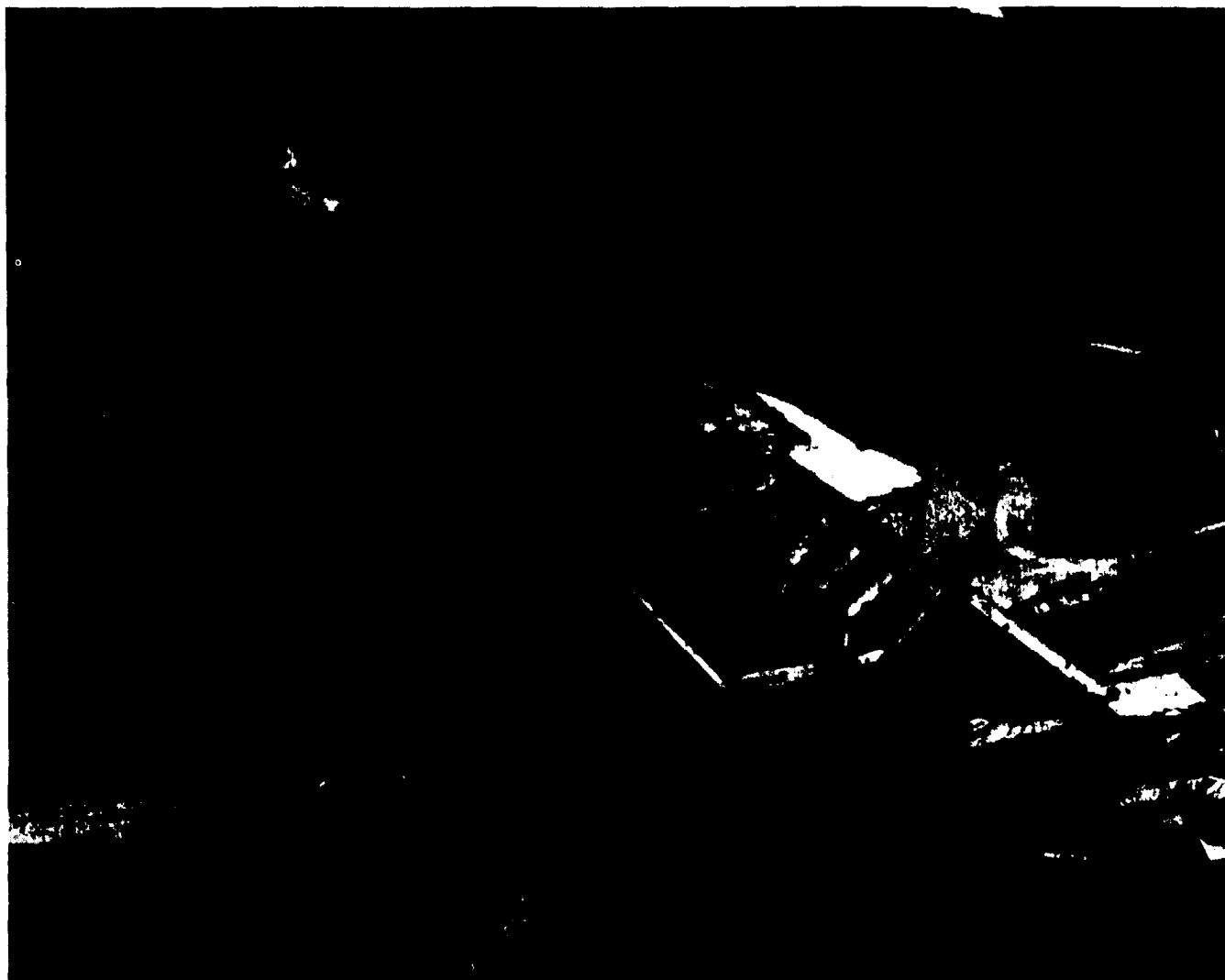
For example, the Tennessee Valley Authority continued to commit resources for construction of the Columbia Dam project on the Duck River in Tennessee even though FWS had determined that the dam could jeopardize three endangered species of mussels. (See photo on p. 6.) Construction was stopped only after the Army Corps of Engineers refused to issue a permit to complete the project until the conflict was resolved. Under the 1978 amendments, this would not be permitted because Federal agencies are required to comply with a biological opinion or apply for an exemption within 90 days after consultation with FWS. During the consultation and exemption process, Federal agencies are precluded from making irreversible or irretrievable commitments of resources which foreclose alternatives or jeopardize the existence of listed species.

#### ORGANIZATIONAL RESPONSIBILITIES

Responsibility for implementing the Endangered Species Act is divided between the Secretary of Commerce (for most marine species) and the Secretary of the Interior (for all other species). In addition, the Secretary of Agriculture is responsible for enforcing import/export controls for listed plants. Each Secretary has delegated this responsibility to the appropriate agency in his department--the National Marine Fisheries Service (Commerce), FWS (Interior), and the Animal and Plant Health Inspection Service (Agriculture).

Within FWS, the Associate Director--Federal Assistance has been designated as the program manager of the endangered species program. He is responsible for developing and directing program policies and procedures, allocating staff and resources, and achieving the program's goals and objectives. He has line authority to the FWS regional and area directors in all matters concerning the endangered species program.

An Office of Endangered Species was organized within FWS in 1967. This office has primary responsibility for (1) determining the status of species and recommending the listing of endangered and threatened species and the specification of their critical habitats in the Federal Register, (2) making recommendations to the program manager for allocation of program staff and resources, (3) overseeing section 7 consultations with other Interior and Federal agencies, (4) reviewing recovery and conservation efforts,



PHOTOGRAPH COURTESY OF THE TENNESSEE VALLEY AUTHORITY  
COLUMBIA DAM IS ONE OF TWO DAMS ON THE DUCK RIVER IN TENNESSEE. THE NORMANDY DAM  
WAS COMPLETED IN 1976 WHILE THE COLUMBIA DAM IS SCHEDULED FOR COMPLETION IN 1983



and (5) monitoring States' qualifications for cooperative agreements.

The endangered species program interfaces with many of FWS's other organizational units. Of primary importance are (1) the Division of Law Enforcement, which controls importing and exporting of species (except plants) and enforces the protective provisions of the endangered species act, and (2) the Federal Wildlife Permit Office, which issues permits for scientific purposes or to enhance the propagation or survival of endangered and threatened species.

#### PROGRAM IMPLEMENTATION PROCESSES

The endangered species program is implemented by three processes--listing, consultation, and recovery. In the listing process species are selected for review and listing as endangered or threatened in the Federal Register, and listed species are delisted or reclassified when their statuses change. After a Federal agency identifies an action that may affect listed species or their critical habitats, the formal consultation process begins when the agency makes a written request for consultation and culminates in a biological opinion by FWS. Once a species is listed, FWS and other Federal agencies initiate recovery efforts to return the species to the point where it is no longer endangered or threatened or to at least stabilize its existence.

Funds had been allocated among the three processes with priorities shifting based on legislative amendments to the act and implementing regulations and directives. Initially, priority was given to listing additional species. However, as additional species were listed, the potential for conflicts with Federal actions increased and priority began to shift to the consultation process. Regulations, finalized on January 4, 1978, made consultation mandatory for all Federal actions affecting listed species or their habitats. Section 7 consultations then became the highest priority, but the 1978 amendments and policy directives and procedural guidelines implemented in fiscal year 1978 had increased the funds required for the listing process.

The steps to be followed in each process are included in the statutory provisions of the act; Department of the Interior implementing regulations and guidelines; and FWS policies, procedures, directives, and memorandums. Each

of the three processes is the subject of a chapter of this report and each is discussed in detail in appendix I. (See pp. 95 to 98.)

#### NATURE OF THE REVIEW

We made this review primarily to determine if Interior's implementation of the Endangered Species Act could be improved and if legislative amendments to the act were needed. Our review focused on Interior's management of the program. In no instance did we attempt to evaluate biological data and render an opinion. Our objectives were expanded to include an analysis of the 1978 amendments' impact on our review and implementation of the program within Interior.

Our review excluded Commerce's implementation of the endangered species program and was limited to U.S. species and their habitats. Besides FWS, we concentrated our field work in the major Federal land-managing agencies, including the Bureau of Land Management, the National Park Service, the Bureau of Reclamation, the Forest Service, the Army Corps of Engineers, and the Tennessee Valley Authority. Fieldwork was limited primarily to FWS region I in Portland, Oregon, and region IV in Atlanta, Georgia. FWS region I covers the States of Alaska, Hawaii, Washington, Idaho, Oregon, California, and Nevada. Region IV covers Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Arkansas, and Louisiana. The States within regions I and IV have accounted for about 92 percent of the total U.S. species extinctions to date.

We interviewed Federal and State officials and obtained information and statistical data for the first 9 months of fiscal year 1978. Where possible, the statistical data was updated through September 30, 1978. In addition to this report, we issued a letter to the Secretary of the Interior on November 1, 1978 (CED-79-6), recommending that FWS discontinue the approximately \$6.4 million acquisition of Kealia Pond on the island of Maui, Hawaii.

We contacted officials in Interior's Office of Inspector General. They informed us that they had not conducted nor did they plan any audit work relating to endangered species.

## CHAPTER 2

### WITHOUT MAJOR MANAGEMENT IMPROVEMENTS, DEFICIENCIES WILL CONTINUE IN THE SPECIES LISTING PROCESS

The cornerstone of effective implementation of the Endangered Species Act is the process used by the Fish and Wildlife Service to determine which species should be listed as endangered or threatened and which listed species should be reclassified or removed from the lists (delisted). This first step is critically important because it sets in motion all the other provisions of the act, including the protective regulations, consultation requirements, and recovery funding. However, deficiencies in FWS's listing process threatened effective implementation of the entire endangered species program. These deficiencies could:

- Jeopardize the existence of some species or result in the selective extinction of others.
- Create unnecessary conflicts with Federal, State, and private projects and programs.
- Limit management efforts to protect and recover listed, proposed, and candidate endangered and threatened species.

FWS had not implemented many of the basic policies, procedures, and practices needed to appraise program accomplishments and achievement of objectives. Those that had been implemented were often inadequate to evaluate the effectiveness, efficiency, and economy of program management decisions. Specifically, FWS had not:

- Consistently applied existing policies, procedures, and practices used to list species. This could jeopardize the existence of some species while increasing conflicts with State and private projects and programs.

- Periodically reviewed listed species or established criteria to determine if their statuses had changed. Consequently, species which may qualify for delisting or reclassification as threatened could continue to be listed improperly, creating unnecessary conflicts with Federal, State, and private projects and programs and resulting in resources being spent needlessly for recovery efforts on these species.
- Established adequate procedures to identify, review, and act on species included in petitions from interested persons. This had excluded from further listing consideration some potentially endangered and threatened species.
- Implemented a priority system to serve as a guide in selecting candidate species for review and listing. This had permitted factors not directly related to biological vulnerability to receive undue priority in listing decisions, including availability of information, geographical and species preferences of the FWS biologists, personal preferences of Interior officials, and public pressures.
- Developed adequate procedures and time frames to process regulations. Tardiness in publishing final listing regulations delayed protection for the species involved.
- Requested staff and funds for the listing process commensurate with its priority within the endangered species program. Only 18 of the 323 staff involved in the endangered species program were assigned primarily to the listing process. This limited both the number of listings in fiscal year 1978 to 41 species and needed status surveys on listed and unlisted species.

Moreover, FWS had not established a system to exchange information on listed, proposed, and candidate species among Federal agencies and the States. Instead, a hodgepodge network of Federal and State information systems including

endangered, threatened, and other biologically vulnerable species had been developed, resulting in redundancy and duplication of staff and financial resources.

EXISTING POLICIES AND PROCEDURES  
SHOULD BE APPLIED CONSISTENTLY

FWS should list species that are biologically endangered or threatened and specify their critical habitats. However, existing policies and procedures were not being consistently applied. This could jeopardize the existence of some species while increasing conflicts with State and private projects and programs.

Some of the most immediate potential conflicts involving endangered and threatened species are Federal water projects in various stages of completion. Dams constructed in rural areas can adversely affect many species. Similarly, dredging and channelization of streams eradicates nearly all life along the stream bottom. Adding to this problem is the fact that many of the species involved are considered lower life forms (invertebrates and plants).

For example, according to FWS's listing biologist responsible for molluscs, completion of the Normandy Dam project on the Duck River in Tennessee in the spring of 1976 rendered the turgid-blossom pearly mussel effectively extinct. This conclusion was supported by another recognized U.S. expert on molluscs who had studied the mussel intensively before the dam was completed but could not find any after impoundment. The mussel, suspected of being endangered in June 1972 and proposed for listing as endangered in September 1975, was not listed until after the project was completed.

Because of the potential controversy involved, we reviewed the policies and procedures FWS used to determine the status of species whose listings may conflict with ongoing Federal water projects. We found inconsistencies in the process used to determine the status of these species compared with existing policies and procedures and listings of less controversial species.

Interior officials contend that, by their nature, endangered and threatened species are unique organisms in unique situations and that it is impossible to develop procedures that will be appropriate for all, or even most species listings. They stated that FWS has been particularly careful in evaluating data for listing species where potential for conflict exists, but has not refrained from listing

any well-documented species because they were controversial. However, as evidenced in the examples below, the application of different policies and procedures to controversial species could jeopardize their existence.

#### The harvestmen at New Melones Lake

FWS had not listed certain species of cave harvestmen (spiderlike invertebrates also known as daddy-longlegs) whose habitat is within the area of the nearly completed New Melones Lake project in California. (See photos on pp. 13 and 14.) Flooding of the area, which began in November 1978, could jeopardize the continued existence of four harvestman species.

FWS was petitioned by the Environmental Defense Fund in April 1975 to list two of the harvestmen and again in January 1977 by the biologist who had surveyed the area to review and list one of the harvestmen. The Environmental Defense Fund pointed out that the isolated species of harvestmen represent unique paths of evolution dating from the last ice age, a million years ago. Development of a regulation proposing to list the species was not initiated until February 1977, and the proposal, forwarded by the Office of Endangered Species for review and concurrence in September 1977, was returned by the program manager in March 1978. The proposal had not been approved as of May 31, 1979.

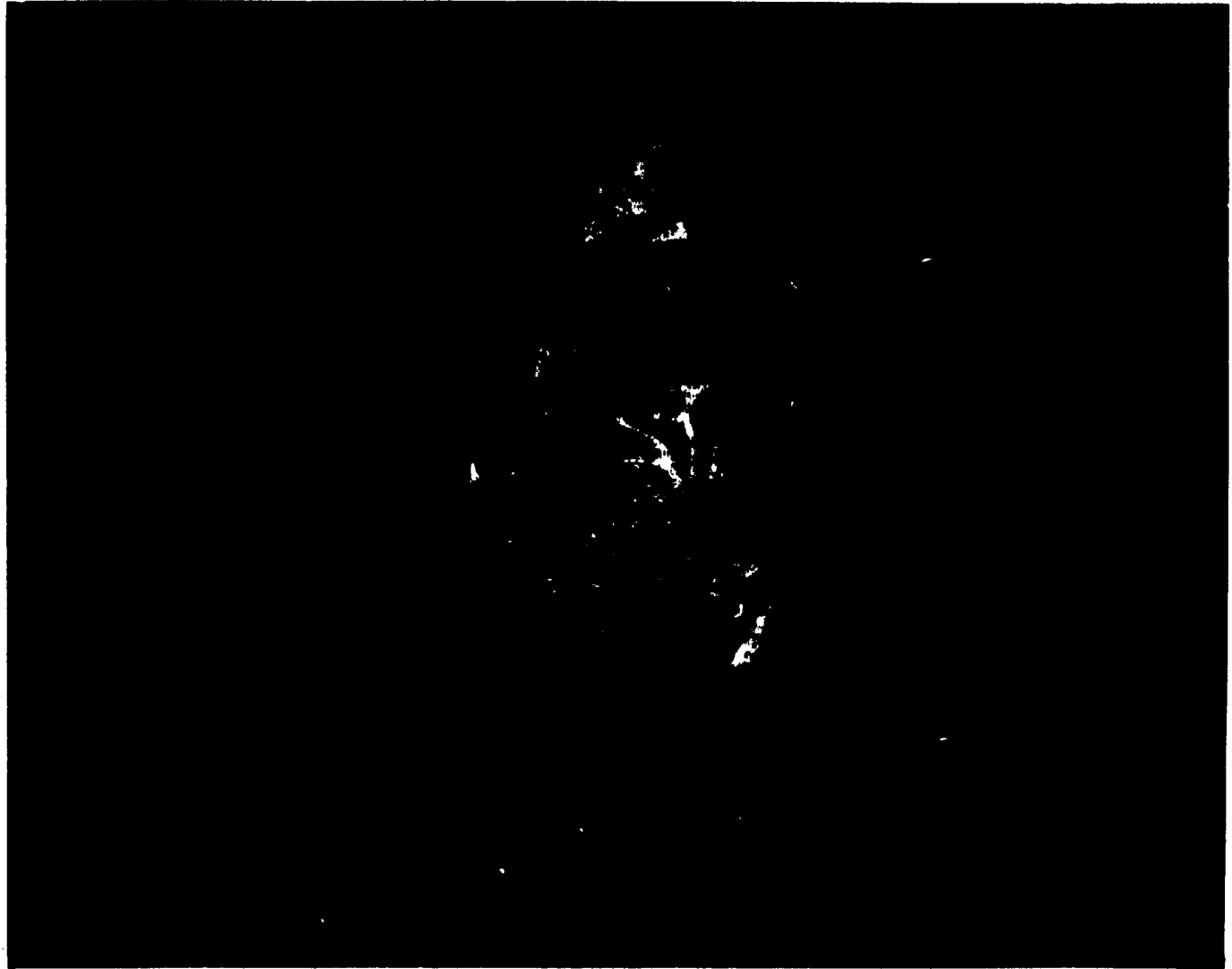
FWS's position was that insufficient fieldwork had been done to justify listing the species. The April 1975 petition was denied and additional information was requested. According to Interior officials, the January 1977 petition was accepted because it contained more detailed information; however, FWS still had considerable reservations about the completeness of the project area survey.

A Corps of Engineers survey completed in early 1978 excluded a portion of the project area, and a contract for a second survey was awarded by FWS in January 1979. Interior officials stated that preliminary results of the second survey show that there are at least 10 more caves above the impoundment area that contain the petitioned harvestmen and that contrary to the November 1978 Corps of Engineers report, it appeared that harvestmen transplanted to another cave were thriving.



PHOTOGRAPH COURTESY OF THE ARMY CORPS OF ENGINEERS

FACING UPSTREAM ALONG IRON CANYON ON THE STANISLAUS RIVER, CALIFORNIA. NEW MELONES DAM UNDER CONSTRUCTION, DWARFS THE OLD MELONES DAM BEHIND IT



PHOTOGRAPH COURTESY OF THE ARMY CORPS OF ENGINEERS

UPSTREAM VIEW OF NEW MELONES SPILLWAY. THIRTEEN MILLION CUBIC YARDS WERE  
MOVED AND USED IN CONSTRUCTION OF THE DAM



Interior officials believed that FWS was fully justified in insisting on better data before proceeding to propose the species for listing. However, statements by the program manager and the process used to review the status of the harvestmen raise serious questions concerning the validity of this statement. For example:

- Contrary to Interior officials' statements, the second petition to list the harvestmen did not contain more detailed information than the first petition, and no additional data on the status of the species was available.
- Even though FWS officials were aware that the Corps of Engineers survey did not include the entire project area, a second contract was not awarded until after the area was being flooded.
- Other species, such as the Pine Barrens tree frog and desert tortoise, were listed or proposed for listing before detailed field status surveys were conducted, and their listings or proposals were limited to distinct populations instead of entire species. The harvestmen, on the other hand, were not even identified for possible listing in the foreseeable future in the priority rankings prepared by FWS biologists in August 1978, and the program manager rejected listing known cave populations.

FWS officials stated that a detailed field status survey was conducted on the harvestmen before considering them for listing because available information was not adequate to justify their proposal. Conversely, they stated that adequate information was available to justify listing the tree frog and proposing the desert tortoise. However, a memorandum signed by the FWS director about 9 months after the tree frog population was listed stated that the field notes of one individual "were (and are) the only source of information on the distribution and range of this species available." Further, the notice of review published in the Federal Register on the same day the desert tortoise population was proposed for listing stated that, "Few populations of this species have been extensively investigated \* \* \*."

--A memorandum to the program manager, prepared in August 1978 by the chief of the FWS branch responsible for listing species, stated that (1) the habitat of four species of harvestmen would be either inundated by water or "threatened by vandalism or other impacts stemming from increased cave visitation upon completion of the project," (2) the transplant may have jeopardized one cave's population and ecosystems because all harvestmen found after extensive searches were removed, and the transplant mine lacks "a natural source of nutrient input and may be too wet to insure the long-term survival of a natural cave ecosystem," (3) partial surveys "indicate that cave spiders, pseudo-scorpions, and leaf-hoppers may be endemic to the project area," and (4) the harvestmen "are thought to be well sampled and evaluated throughout the \* \* \* Limestone pod according to (the petitioner)."

When confronted with these inconsistencies in August 1978, the program manager stated:

"Not all species can be saved, it's a judgment decision, somebody has to play god and decide which will go. In this case I am doing just that, contrary to my staff's recommendations. I make biological decisions every day. Right now my main concern is saving the act. The harvestmen populations will not be listed. I am not about to lose the act because of a couple of spiders. Some species will have to become extinct. The few times this has happened or will happen are relatively inconsequential to the total biological actions of this program."

In May 1979, FWS biologists informed us that the species probably will not be listed. They stated, however, that (1) the results of the second survey had not been fully evaluated, (2) the impact vandalism and increased cave visitation will have on the species had not been determined, (3) the harvestmen populations in each cave could not be established, and (4) two of the harvestmen species had not been identified. The chief of FWS's listing branch admitted that "if the second survey had not identified additional caves, FWS would have been in trouble."

## Mussels, snails, and fish in the Duck River

In a March 30, 1977, memorandum, the FWS Director identified seven mussels, three fish, and four snails which were listed, proposed, or about to be proposed for listing as endangered or threatened. He stated that all the species would be directly or indirectly jeopardized by completion of the Columbia Dam project on the Duck River in Tennessee and that FWS "will not and cannot support any action with regard to the Duck River project which would result in the extinction of any of the species that occur in that river." However, as of May 31, 1979:

--A proposed regulation to specify the critical habitat of three mussels listed as endangered, in review for over 17 months prior to the 1978 amendments, had not been published in the Federal Register.

--Four river snails proposed as endangered or threatened on January 12, 1977, had not been listed.

--A proposed rulemaking to list three fish, identified in the Director's March 30, 1977, memorandum as being "in the final stages of completion," had never been published.

The proposed regulation specifying the mussels' critical habitats, forwarded to the Office of the Solicitor for review and concurrence in May 1977, was returned to the Office of Endangered Species in September 1977. An attorney verbally instructed the FWS biologist to take no action until a lawsuit, filed by the Pacific Legal Foundation against Interior, was resolved. In June 1978, the attorney informed us that "fights must be selected carefully, and a few mussels are not worth losing the act for."

In May 1979, FWS listing biologists stated that specifying the species' critical habitats was not important because, by being listed, they were fully protected. However, FWS's fiscal year 1978 budget detail sheet for endangered species states:

"Much of the protection available to listed species under the Act is through protection of critical habitats under Section 7. Under the Act, no benefits can accrue to a species until it is listed as Endangered or Threatened and its Critical Habitat is determined."

In September 1978, the chief of the listing branch stated that the snails proposed for listing on January 12, 1977, were in "urgent danger" and should be listed. However, the August 1978 rankings did not identify any of these species for listing in the foreseeable future. In May 1979, FWS biologists informed us that the snails had not been listed because a survey to verify that they are distinct species had not been conducted. The survey was to begin later that month. The FWS listing biologist responsible for fish informed us that the only reason the three fish had not been proposed was because environmental impact assessments had never been prepared.

The Columbia Dam project represents one of the most imminent irresolvable conflicts, and the Endangered Species Committee may be requested to determine if an exemption should be granted. Since FWS had not listed all the species affected by the project and specified the critical habitats of the listed species, the Committee will be precluded from fully considering the benefits of conserving the species. Further, if an exemption is granted, the project may again be stopped if additional species are listed (see pp. 60 to 64) or if the exemption is found to result in the extinction of a species. (See pp. 64 to 66.)

Fish and mussels in the area of  
the Tennessee-Tombigbee Waterway

Three fish and six mussels identified by FWS biologists in 1976 as endangered or threatened by construction of the Tennessee-Tombigbee Waterway in Tennessee, Alabama, and Mississippi (see photo on p. 19) had not been proposed for listing as of May 31, 1979. A March 1976 memorandum from the acting chief of the Office of Endangered Species to the program manager and the Assistant Secretary for Fish and Wildlife and Parks stated, "The impact of the Tennessee-Tombigbee Waterway on the fresh water mussel and fish fauna of the Tombigbee River will be considerable and for many species adverse." However, development of proposed listing regulations had never begun.

Interior officials stated that rulemakings had not been prepared for the fish and mussels because other species having higher priority had taken precedence. The August 1978 priority rankings do not support this statement. Eight of the nine species were assigned the highest priority possible, showing that the responsible

ALICEVILLE LOCK AND DAM, UNDER CONSTRUCTION, IS PART OF THE TENNESSEE-TOMBIGBEE WATERWAY

PHOTOGRAPH COURTESY OF THE ARMY CORPS OF ENGINEERS



FWS biologists believed that they were facing high degrees of threat and that no additional fieldwork was required before listing.

In June 1978, the FWS listing biologist responsible for mussels stated that development of a proposed rulemaking had not begun "because of the extreme controversy of the species and the project." The FWS listing biologist responsible for fish stated that he was worried about congressional repercussions if the species were proposed. Thus, construction of the waterway continues without the affected species being listed.

As evidenced in the above examples, the application of different policies and procedures to listing some species could jeopardize their existence. The 1978 amendments permit the Endangered Species Committee to exempt a Federal project even if it will result in the extinction of a species. By not listing or specifying the critical habitats of endangered, but controversial, species, FWS may preclude the Committee from fully considering the benefits of conserving species and their critical habitats.

If, as Interior officials contend, FWS has been particularly careful in evaluating data for listing species where potential conflicts with Federal projects and programs exist, then the same caution should be applied to all listings. Listed species which do not conflict with Federal actions, do in some cases, conflict with State and private projects and programs. By applying more stringent policies and procedures to listing these species, conflicts stemming from the act's protective provisions and land acquisition authorities may be reduced.

LISTED SPECIES SHOULD BE DELISTED  
OR RECLASSIFIED WHEN WARRANTED

FWS had assigned a low priority within the listing process to reviewing listed species and had not established criteria for determining if a species is endangered as opposed to threatened. Consequently, species which may qualify for delisting or reclassification as threatened could continue to be listed improperly, creating unnecessary conflicts with Federal, State, and private projects and programs and resulting in resources being spent needlessly for recovery efforts on these species.

The 1973 act provides for two species status classifications--endangered and threatened. Certain acts are specifically prohibited for all endangered species, but the Secretary is permitted to issue only those regulations deemed necessary for conserving threatened species. Controlled hunting and fishing, exportation from the United States, interstate commerce, and sale, which are prohibited for all endangered species, may be permitted for threatened species. Thus, conflicts involving State and private projects and programs can be minimized by listing species as threatened.

For example, the Lahontan cutthroat trout was originally listed as endangered before the 1973 act, prohibiting fishing for that species. The State of Nevada protested the listing, noting that Federal and State hatcheries assure perpetuation of the species and that fishing is controlled by the State. After enactment of the 1973 act establishing the threatened classification and a reevaluation of available data, FWS reclassified the trout as threatened so that controlled fishing of the species could continue.

Delisting eliminates the need to consult on, conserve, and protect a species. For example, the Mexican duck (see photo on p. 22), listed as endangered in the United States in 1967, was delisted in fiscal year 1978 after its recovery team recommended, and affected States proposed, a taxonomic study of the species. The study found that the birds in the United States were not pure Mexican ducks but hybrids (a cross between Mexican ducks and common mallards) and should not have been listed. In the interim, the species was the sole reason for some section 7 consultations and conflicted with hunting during the 1977-78 waterfowl season.

Despite the benefits to be derived from delisting and reclassifying listed species, only one species had been delisted and six others had been reclassified from endangered to threatened in all or part of their ranges since 1973. The August 1978 rankings prepared by FWS biologists showed that at least 95 species, or 48 percent, of the 197 U.S. species listed as endangered were not facing high degree of threat to their survival. Based on degree of threat, these species could be reclassified as threatened.



PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE

A MEXICAN DUCK



The 1966 and 1969 acts limited FWS's listing authority to endangered species only. The 1973 act required those species to be carried forward as endangered, subject to review by FWS. According to Interior officials, 92 species listed as endangered were "carryovers" from the 1966 and 1969 acts. However, most of these species had not been reviewed, even though FWS officials admitted that some of them do not conform to the 1973 definition of endangered and that a few should be delisted.

Other species listed since 1973 may also not conform to the definitions of endangered and threatened. For example, the FWS region I endangered species coordinator stated that both the grizzly bear and the southern sea otter should be delisted. In his opinion, the grizzly bear is adequately protected by State laws and the sea otter has expanded beyond its former range and population and is conflicting with State and private fishing programs.

FWS officials stated that the minimal staff and funds allocated to the listing process and the large number of U.S. species to be listed (estimated at 20,000) demand that priority be given to listing additional species, instead of reviewing species already determined to be endangered or threatened. These officials estimated that biologists assigned primarily to the listing process spend only about 1 percent of their time on listed species.

The 1978 amendments require the Secretary to review all listed species at least once every 5 years to determine whether any should be delisted or reclassified. The determinations are to be based on the best scientific and commercial data available. However, unless FWS requests and receives funding for status reviews of listed species and establishes criteria to determine a species' status, the 5-year reviews will be little more than cursory looks at available data.

Interior officials considered these conclusions preemptive and highly prejudicial, considering FWS had not performed a 5-year review before. They stated that FWS plans to publish a notice of review in the Federal Register and provide notice to all the States involved. However, Interior's fiscal year 1980 budget justification included no new staff or funding for the listing (delisting) process. Thus, the 5-year reviews can only be more thorough at the expense of listing other biologically eligible species.

Interior's response to our revised draft report (see p. 122) stated that while consistency is an important aspect of the species status determination process, FWS also must retain enough flexibility to protect a species when unusual circumstances arise. We agree that degree of threat cannot be the sole criterion for classifying species as endangered or threatened. However, FWS biologists had estimated the degree of threat for most listed, proposed, and candidate species, and FWS had also established degree of threat as the primary criterion for selecting species for listing and recovery. (See p. 101.) Therefore, establishing degree of threat as the primary criterion for classifying species appears not only realistic, but fully consistent with other FWS policies and procedures.

PETITIONS SHOULD BE SYSTEMATICALLY IDENTIFIED AND ACTED ON

The act, as amended, provides that any interested person may petition the Director of FWS to conduct and publish in the Federal Register a review of the status of any species for the purpose of listing, delisting, or reclassifying such species. The review is to be conducted within 90 days but only if the petitioner has presented substantial evidence that, in the Director's judgment, warrants such a review. If substantial evidence has been presented to warrant a review, a finding to that effect must be published in the Federal Register.

The purpose of petitions is to alert FWS about biologically vulnerable species. Although FWS had published regulations outlining the minimum information that a petition must contain before it will be accepted, it had not established adequate procedures to identify, review, and act on species included in the petitions. Before fiscal year 1978, FWS had no procedure to record petitions received or their disposition. As a result, some petitions could not be accounted for, while others could not be found.

Our review identified 154 petitions FWS had received through June 30, 1978, which was 45, or 41 percent, more than FWS had recorded as received. Included in those unaccounted for was the April 1975 petition to list two of the cave harvestmen in the area of the New Melones Lake project. Similarly, a June 2, 1976, petition from an official of the National Museum of Canada was not recorded and the attachment identifying the species to be listed could not be found.

FWS officials explained that the primary reason for the 41-percent discrepancy between their petition total and ours was that the original criteria, established to determine if the evidence presented in a petition was substantial enough to warrant a review, were revised to be less restrictive. However, neither the original nor the revised criteria had been consistently applied, and FWS's listing biologists could not agree on a petition's validity. For example, the chief of FWS's listing branch identified as a petition an October 6, 1975, request to determine the status of two California lizards. The responsible FWS listing biologist informed us that he had not considered the request to be a petition and, therefore, had not acted on it.

In March 1978, the chief of FWS's listing branch admitted:

"FWS has never kept an accurate record of the petitions received, nor has a definition of what constitutes a petition been consistently applied. The specialist responsible for the species determines if the material constitutes a petition. However, the definition of a petition has never been established, and what might be considered a petition by one specialist, may not be considered a petition by another. Some requests have not been considered petitions even though they included supporting data to justify a species' listing. The petition log is not complete. The total will never be accurate."

Because FWS biologists made independent decisions to accept or deny petitions based solely on their evaluations of the supporting information or credibility of the petitioner, some petitions FWS accepted included limited scientific, commercial, or other data to support the request, while other petitions with supporting evidence were denied or not acted on. For example, FWS accepted a July 30, 1976, petition from the State of Louisiana to reclassify the American alligator but denied a similar July 6, 1976, Texas petition. In an August 23, 1978, memorandum to the FWS Director, the FWS biologist who prepared the draft proposed listing regulation stated that much of the information in the original Louisiana petition and subsequent supporting data "does not in the slightest give any indication of the present status of the alligator within the state and as such should be disregarded." Conversely, the Texas petition that was denied contained data on the status of the alligator within the State.

Another deficiency was that some petitions which were denied were not identified as being received. FWS officials believed this explains why the first petition to list the harvestmen was not accounted for. Other petitions, which the program's biologists informed us they would have recommended be denied, were accepted by other Interior officials. For example, the Office of the Solicitor directed FWS to accept a May 22, 1975, petition from The Fund For Animals to list or review the status of the 20,611 species in "Appendices I and II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora." In May 1979, the chief of FWS's listing branch stated that the petition should not have been accepted because it contained insufficient data. Also, the Smithsonian Institution's "Report on Endangered and Threatened Plant Species of the United States" was accepted as a petition on January 9, 1975, on the assumption that adequate data was available. However, the FWS listing branch chief stated that the Smithsonian's information was not adequate for the report to be accepted as a petition to list the 3,187 species identified.

FWS's "General Procedures for Listing, Delisting, or Reclassifying Threatened or Endangered Species" require species included in accepted petitions to be reviewed by an ad hoc panel of FWS biologists to determine their listing priority and to decide whether supporting information justified publishing either a proposed rulemaking or notice of review. However, this was not being done. Also, most determinations that petitions warranted review were not being published in the Federal Register as required by the act, and many petitioners were not being informed of the disposition of their petitions.

During fiscal year 1978, FWS officials tried to improve the petition system by consolidating all available petitions into a central petition log. However, as of May 1979, procedures had not been developed to record the receipt and disposition of petitions and to safeguard against their loss. Therefore, there was still no assurance that petitions received were identified and acted on.

FWS officials stated that there had been some difficulty in dealing with petitions principally because the volume of petitions had proven to be greater than was originally anticipated and because documents that could be considered to constitute petitions reach FWS from a variety of sources. Excluding the petitions from The Fund For Animals and the Smithsonian Institution, FWS had received 151 petitions to list, delist, or reclassify

857 species through June 30, 1978. This was less than three petitions each month with each petition averaging less than six species. While limited funding prevented FWS from listing, proposing to list, or reviewing the status of all species included in these petitions, it did not preclude development of adequate criteria and procedures to identify, review, and act on them.

The statutory priority given petitions, as well as the need to identify and list those species which are biologically vulnerable, necessitate compliance with the act and implementing regulations. Interior officials informed us that regulations being drafted to implement the listing provisions of the act "spell out more explicitly the criteria used in judging the substantiveness of petitions." However, compliance with the act cannot be obtained until adequate procedures are developed to identify, review, and act on petitions.

#### A PRIORITY SYSTEM SHOULD BE USED AS A GUIDE IN SELECTING SPECIES FOR LISTING

Although FWS had estimated that 20,000 U.S. species may be endangered or threatened and had identified over 250 candidate and proposed species with high degree of threat to their continued existence (see p. 100), it had not implemented a priority system to serve as a guide in selecting candidate species for review and listing. This had permitted factors not directly related to biological vulnerability to receive undue priority in listing decisions, including availability of information, geographical and species preferences of the FWS biologists, personal preferences of Interior officials, and public pressures.

FWS had developed six priority systems through fiscal year 1978. However, none had ever been implemented because FWS officials could not agree on the scope, comprehensiveness, criteria (and the emphasis given each), definitions, and other components which should be included. Three of the six systems had been developed since fiscal year 1975, with criteria emphasis shifting between degree of threat and availability of information.

The last system included 3 criteria--degree of threat, availability of information, and taxonomic status (species, subspecies, population, etc.)--in a matrix of 12 priorities. (See p. 101.) The system emphasized degree of threat, which is consistent with the act's intent, and should result in species facing the greatest threats to their continued survival receiving highest priority.

The August 1978 rankings were based on the last priority system. However, problems in preparing the rankings and deficiencies in the listing process precluded effectively using the rankings. Problems in preparing the rankings included (1) omission of some species, such as the harvestmen found at New Melones Lake and species within the area of the Columbia Dam project, and (2) failure of FWS officials to review the rankings across taxonomic groups for consistency of criteria and to consolidate the rankings so that staff and funds could be allocated accordingly.

Deficiencies in the listing process included (1) inability to account for all petitions received, which excluded some species from consideration, (2) inadequate funding of status surveys on species lacking adequate data on their biological vulnerability, resulting in their being assigned lower priorities, and (3) no adequate system to obtain available information before ranking. Further, while availability of information was a criterion for ranking species within degree of threat, FWS had not established criteria to determine the adequacy of the available information or when the degree of threat was such that the information criterion should be waived.

In May 1979, FWS officials informed us that a ranking based on the priority system was under review by the FWS regional offices and would be helpful in assigning listing priorities for fiscal year 1980. However, improvements in the listing process and priority ranking preparation are needed before those species facing the highest degree of threat to their survival can be selected for review and listing and limited staff and funds can be allocated accordingly.

REGULATIONS FOR SPECIES STATUS  
DETERMINATIONS SHOULD BE  
PROMULGATED PROMPTLY

FWS has the authority to issue regulations for species status determinations. Each time a species is listed, delisted, or reclassified, such a determination must be published in the Federal Register. However, publication of some rulemakings was not timely because FWS had not developed adequate procedures and time frames to process regulations. Tardiness in publishing final listing regulations delayed protection for the species involved.

A draft listing regulation is processed through FWS and the Office of the Solicitor for review and concurrence before being forwarded to the FWS Director or the Secretary

for approval. A routing slip attached to the draft regulation requests that each review be limited to a day. If followed, review would be completed within 2 weeks. However, some officials ignored the 1-day time limit and often did not justify the delays. Since FWS officials lacked the authority to assure that regulations were reviewed promptly, efforts to obtain compliance were limited primarily to telephone calls.

On April 1, 1978, four proposed regulations on endangered or threatened species and/or their critical habitats had been in review for over 6 months. Although the circumstances differed for each, FWS officials could not identify where each regulation was for inordinate periods of time, much less document the reasons for delay. For example, proposed regulations to list and specify the critical habitat of the Virgin River chub and to specify the critical habitat of the Colorado River squawfish remained in review for over 10 months and were published only after GAO inquiries.

Interior officials noted that although the chub and squawfish proposals were delayed, they were eventually published in August 1978 and September 1978, respectively. However, both proposals were submitted for review in September 1977. In June 1978, we began our inquiry concerning the reasons for the delays.

The program manager attributed the delays to a secretarial directive dated June 30, 1977, requiring all proposed and final regulations involving a high degree of controversy to be reviewed by the Secretary before publication. However, FWS's procedures to comply with the directive were developed by November 1977 and implemented in January 1978. According to the deputy program manager, compliance with this requirement delayed publication of most proposed and final rulemakings on species status determinations and critical habitats in review by about 10 weeks. Therefore, while the directive did contribute to the delay for both proposals, it was not the primary reason.

In August 1978, both the program manager and his deputy could not explain why the proposals still had not been published. However, in a September 8, 1978, letter, the program manager stated that Interior's Assistant Director of Public Affairs had requested that the chub's proposal be pulled from the Federal Register. The program manager subsequently informed us that the Assistant Director had the chub's proposal pulled because of its possible implications on the

operation of many completed Federal dams. Also in August 1978, the deputy program manager informed us that the squawfish proposal had been delayed because of its potential impact on at least one dam.

In May 1979, FWS officials informed us that the number of reviewers had been reduced for most listing regulations, which they hoped would reduce processing time. However, unless responsible FWS officials are delegated the authority to take effective measures when necessary to avoid delays in promulgating regulations, publication of some rulemakings may not be timely.

#### INCREASED STAFF AND FUNDS ARE NEEDED FOR SPECIES STATUS DETERMINATIONS

The listing process had not been funded commensurate with its priority within the endangered species program. Therefore, FWS's immediate and long-range goals for species status determinations could not be met even though their need had been well documented.

FWS biologists identified over 260 species which could have been listed in fiscal year 1978; however, limited staff and funds resulted in only 41 species being listed as endangered or threatened. Based on increased funding for species status determinations, FWS biologists identified over 600 U.S. species which could be listed in fiscal year 1979, and optimistically estimated that about 3,500 species could be listed as endangered or threatened by fiscal year 1986. However, new statutory provisions, policy directives, and procedural guidelines relating to critical habitat specification, increased public participation, and potential conflict identification had increased the time and effort needed to list species. These new requirements more than offset the funding increase allocated to species status determinations in fiscal year 1979. As a result, FWS biologists estimated that only 10 of the 600 candidate and proposed species could be listed in fiscal year 1979.

#### Limited staff assigned

Of the 323 FWS staff involved in the endangered species program on October 1, 1978, only 18 were assigned primarily to the listing process. (See p. 102.) In fiscal year 1979, this number was to be increased by five, of which three were to be assigned to listing species, and two were to be assigned to specifying critical habitat for species previously



listed. Also, new policies and procedures implemented on September 7, 1978, increased the FWS regional offices' role in obtaining and analyzing biological information on candidate species. However, increasing by five the staff primarily assigned to the listing process and increasing regional involvement in obtaining and analyzing biological information will not assure that species status determinations will be timely because (1) the number of botanists was still inadequate to address the plant species already proposed for listing and (2) additional staff were needed for taxonomic groups having large numbers of candidate species.

Before July 1976, FWS had published in the Federal Register proposals to list as endangered over 1,700 U.S. plant species. However, as of October 1, 1978, only 22 species had been listed. FWS biologists had identified over 425 plant species which could have been listed in fiscal year 1979. However, the new statutory, policy, and procedural requirements had reduced the number to be listed to less than 10.

While FWS had increased the number of biologists assigned to listing species, some taxonomic groups having proportionately large numbers of candidate species to be listed had no or only one full-time specialist assigned. For example, over half of the animals to be listed by fiscal year 1986 are invertebrates. However, only one general aquatic biologist was assigned to listing molluscs--clams, snails, oysters, mussels, etc.--even though more molluscs had been identified for possible listing than any other animal group. (See p. 100.) Also, the specialist on insects, the largest taxonomic group, had assumed an administrative position and had not been replaced by a permanent specialist.

#### Inadequate funding of status survey contracts

FWS policy requires that species be listed only when adequate information exists on at least one aspect of their biological vulnerability and that listed species be delisted or reclassified when warranted. If adequate information is not available to list, delist, or reclassify a species, FWS should encourage Federal agencies to undertake the necessary fieldwork in complying with other statutory planning requirements or fund status surveys, either through State cooperative agreement grants-in-aid or the overall funding provisions of the act, as amended.

However, FWS did not have an adequate system to inform Federal agencies of the species being considered for listing

(see pp. 33 to 36), and efforts to increase State participation in the program had not been effective. (See pp. 86 to 87.) Further, funds for status survey contracts on listed, proposed, and candidate species were included in the program manager's contingency reserve. The low priority assigned status survey contracts by the program manager had severely limited needed fieldwork.

The fiscal year 1978 endangered species program contingency reserve included \$151,500 for animal status survey contracts. FWS regional offices submitted written proposals for animal status survey contracts totaling over \$1.7 million. These proposals were ranked by using the existing listing priority system as a guide, and nine proposals, totaling \$94,500, were recommended for funding. However, the contingency funds for the status survey contracts were withheld until the end of the fiscal year pending section 7 consultation requirements. No animal status survey contracts were awarded from the contingency reserve in fiscal year 1978 even though FWS officials discovered that the funds were not needed for consultations because the actual number of consultations conducted and associated costs did not approach the totals they had predicted. Several FWS regional offices did, however, award animal status survey contracts with end-of-year surplus funding available within their regions. In all, only five contracts, totaling \$57,000, were awarded in fiscal year 1978 to review the status of seven species, five of which had not been ranked using the listing priority system.

The need for status surveys to obtain adequate information on candidate and proposed species was reflected in the August 1978 rankings prepared by FWS biologists. The rankings identified 66 species facing high degree of threat to their existence, for which additional fieldwork was needed before they could be listed. The benefits to be derived from status surveys and taxonomic studies on listed species are shown in the delisting of the Mexican duck (see p. 21) and in preliminary status survey data on the Florida population of the Pine Barrens tree frog (see photo on p. 33), obtained by the State of Florida under an FWS cooperative agreement grant-in-aid after the species was listed as endangered. The survey had identified a number of additional localized populations, which showed that the frog is more plentiful than originally thought.



PHOTOGRAPH COURTESY OF THE FISH AND WILD LIFE SERVICE

A PINE BARRENS TREE FROG

Funding the listing process commensurate with its priority within the endangered species program would not only expedite the listing of endangered and threatened species but would also facilitate consultation requirements and recovery efforts by classifying listed species correctly and by delisting or reclassifying species when warranted. The listing process could also be more effective if staff and funds were allocated on the basis of a priority system.

AVAILABLE INFORMATION  
SHOULD BE OBTAINED

The act, as amended, requires that species status determinations and regulations specifying critical habitat be based on the best scientific and commercial data available and that listing occur only after consultation, as appropriate, with affected States and interested Federal agencies, persons, and organizations. However, FWS had not established a system to exchange information on species among Federal agencies and the States.

Recognizing the need for data on candidate species as well as proposed and listed species, other Federal agencies and some States had developed systems to obtain available biological information. For example, nine States and the Tennessee Valley Authority had undertaken natural heritage programs in cooperation with The Nature Conservancy, a private, nonprofit organization. The result will be computer-assisted data management systems that include inventories and maps of the States' and the Tennessee Valley Authority's natural diversities, including vulnerable plant and animal species. The systems will be used as a basis for decisionmaking so that needless conflicts between conservation and development interests can be avoided. Similarly, the Forest Service had developed geographically or species-limited computerized systems which include endangered and threatened species, as well as other biologically vulnerable plants and animals.

Other States, such as Georgia, had developed computer capabilities to store data obtained on endangered and threatened species. Florida had proposed to establish and staff a computer data bank and retrieval system to monitor the status of its endangered and threatened species. The proposal would cost FWS over \$22,000 a year.

The hodgepodge network of Federal and State information systems, including endangered, threatened, and other biologically vulnerable species, existed because FWS had not established a comprehensive, nationwide data collection system.

As a Tennessee Valley Authority official noted, implementing the endangered species act required assembling, monitoring, and evaluating widely scattered data of highly variable reliability.

To respond to increasing public concern throughout the United States for preserving wildlife, the Army Corps of Engineers' Waterways Experiment Station in Vicksburg, Mississippi, published a report containing information on the habitats and habitat requirements of species protected by Federal and/or State legislation. This report became the basis of a 1976 agreement among several Federal agencies to coordinate species data collection and distribution activities through a sensitive wildlife information system.

An FWS survey conducted in 1977, and a comparison made in 1978 of existing computer formats suitable for recording species information, found that the sensitive wildlife information system, with modifications, was the best and most useful system available. However, no priorities or deadlines had been set, and FWS officials were doubtful that the system could be implemented in fiscal year 1979. In addition, FWS had decided to limit its input into the system to federally listed species, excluding proposed and candidate as well as State-listed species, and had not obtained participation from many of the Federal agencies whose actions affect endangered and threatened species. Thus, the sensitive wildlife information system, if implemented, will not meet FWS's original objective of providing legitimate users with biological, managerial, legal, and population status information on Federal- and State-protected species and other species of public concern.

Both the 1978 amendments and revised FWS policy directives and procedural guidelines are designed to increase participation by affected Federal agencies and States as well as interested persons and organizations. However, participation occurs primarily after publication of a proposed rulemaking in the Federal Register. Listing decisions affecting endangered and threatened species and Federal, State, and private projects and programs occur before a proposed action is published. Also, the act, as amended, requires that reviews of petitioned species be conducted within 90 days and findings published in the Federal Register. Without a system to obtain available scientific and commercial data, listing decisions may not be based on available information and could adversely affect subsequent

listing decisions and implementation of other provisions of the act.

Interior officials agreed that a comprehensive management information system is needed. They believed, however, that determining what systems exist in Federal, State, and private agencies and organizations, comparing them in terms of user needs and system capabilities, and deciding on one system that could house several subsystems would be a monumental if not impossible task. While we agree that one system cannot be developed to meet all user needs, limiting the sensitive wildlife information system to federally listed species, and not obtaining participation from many of the Federal agencies whose actions affect endangered and threatened species, will do little to reduce existing redundancy and conserve staff and financial resources. A comprehensive management information system is needed that includes the best scientific and commercial data available on federally listed, proposed, and candidate species, as well as State-protected and other biologically vulnerable species.

#### CONCLUSIONS

✓ The listing process is the cornerstone of the endangered species program because it sets in motion all the other provisions of the act, including the protective regulations, consultation requirements, and recovery funding. However, deficiencies in FWS's listing process threatened effective implementation of the entire endangered species program. ✓ Major management improvements to FWS's listing process are needed. Existing policies, procedures, and practices should be consistently applied; better policies and program criteria must be implemented; adequate managerial procedures must be developed; the listing process must be funded commensurate with its priority within the program; and a comprehensive system must be established to obtain available information on listed, proposed, and candidate species.

#### APPRAISAL OF AGENCY COMMENTS

FWS officials stated that the evaluation and conservation of endangered and threatened species cannot be approached effectively by "cookbook" methods. They stated that the need for better managerial procedures and program criteria misses the point that the kinds of

situations dealt with in listing are not pre-programmable. According to them, it is vital that the process establish and maintain adequate flexibility to deal with the extremely varied sets of circumstances encountered in dealing with species on or near the brink of extinction. They believe that every such species is unique and must be dealt with individually.

We agree that every Federal program needs some administrative flexibility, but as in any Federal program, the orderly way of conducting business is to establish sound management practices, including policies and procedures, to be followed by program officials in implementing congressionally enacted legislation such as the Endangered Species Act. FWS does not have an adequate process to

- make species status determinations,
- monitor and evaluate the effectiveness of the listing process, and
- refute the accusations and criticisms of those who believe the program is moving too fast as well as those who believe implementation has been far too slow.

We believe that sound policies, procedures, and practices are needed to guide listing decisions. Otherwise, the endangered species program will remain a source of continuing controversy adversely affecting endangered and threatened species as well as Federal, State, and private projects and programs.

RECOMMENDATIONS TO THE  
SECRETARY OF THE INTERIOR

The Secretary should direct the Director of FWS to:

- Apply the same listing policies and criteria to all biologically eligible species including those whose listings may conflict with ongoing or planned Federal projects and programs.
- Decide the types of information needed to (1) determine if the evidence presented in petitions is substantial enough to warrant a review, (2) rank species within the listing priority system, (3) list species as endangered or threatened, and (4) reclassify or delist species.

- ✓ -- Promptly delist and reclassify listed species when their futures are reasonably secure or when their statuses have improved, using degree of threat as the primary criterion.
- ✓ -- Develop adequate procedures to identify, review, and act on petitions to change the status of species.
- Implement a priority system based on degree of threat to select species for review and listing and allocate staff and funds accordingly.
- Expedite the review and approval of draft rulemakings relating to species status determinations. Consideration should be given to delegating the authority to take effective measures when necessary to avoid delays in promulgating regulations.
- Fund the listing process commensurate with its priority, which should be the highest within the endangered species program. Within the listing process, staff and funds should be reallocated after (1) a high priority has been assigned to the review of listed species, (2) funds for status surveys have been made a budgetary line item, and (3) staff requirements among taxonomic groups have been identified based on a consolidated ranking guided by a priority system.
- ✓ -- Establish a system to exchange information on listed, proposed, and candidate species among Federal agencies and the States.



### CHAPTER 3

#### TIMELY CONSULTATIONS NEEDED TO RESOLVE

##### CONFLICTS BETWEEN LISTED SPECIES

##### AND FEDERAL PROJECTS AND PROGRAMS

Federal agencies which determine that their projects and programs may affect endangered or threatened species must consult with the Fish and Wildlife Service to resolve any potential conflicts. FWS had continually improved the consultation process; however, conflicts involving on-going and planned projects and programs had not always been identified or resolved promptly. Furthermore, improvements could avoid unnecessary project delays and adverse impacts on endangered and threatened species and their critical habitats. Improvements are needed because:

- Some Interior agencies had not adequately reviewed their programs to identify potential conflicts, and potential conflicts identified had not always been promptly resolved.
- Some biological opinions, detailing how Federal projects and programs affected listed species and their critical habitats, had not been rendered expeditiously.
- FWS had not developed adequate procedures to identify where consultations were occurring so that resources, including staff, could be allocated accordingly.

##### SOME INTERIOR PROGRAMS NOT ADEQUATELY REVIEWED AND SOME POTENTIAL CONFLICTS NOT RESOLVED

Under section 7, the Secretary of the Interior must review departmental programs and use them to further the purposes of the act. On October 16, 1974, the Secretary directed all Interior agencies to review their programs and authorities to identify existing and potential conflicts. The reviews were completed in early 1975. However, some Interior agencies did not conduct indepth reviews, and the impact their projects and programs were having on endangered and threatened species was not determined. For example, the

Bureau of Reclamation did not identify that some of its water projects had adversely affected federally listed species in California. Although the projects had increased crop production, they had reduced the habitat for several listed species, including the blunt-nosed leopard lizard, San Joaquin kit fox, and California condor. The draft recovery plan on the blunt-nosed leopard lizard showed that agricultural development had reduced the species' habitat by 36,000 acres, or about 16 percent, in less than a year. This trend was expected to continue as additional water imported for agricultural purposes stimulated further cultivation.

Other Interior agencies, such as FWS and the Bureau of Land Management, conducted more thorough reviews of their programs and authorities and identified potential conflicts. However, some potential conflicts identified were not promptly resolved. For example, as early as July 1974, FWS had identified that the routine stocking of nonnative game fish from Federal fish hatcheries into waters of the Colorado River Basin may be adversely affecting a number of listed and proposed species, including the bonytail chub, humpback sucker, Colorado River squawfish, and humpback chub. (See photo on p. 41.) A recovery plan, developed by the Colorado River fishes recovery team and submitted to FWS in November 1977, also had identified that the disappearance of the squawfish above some of the reservoirs "may be related to the proliferation of populations of introduced fishes." However, FWS did not stop the stocking programs until August 1978, when the Colorado River Water Conservation District notified Interior that the programs may be adversely affecting the species. FWS was holding some stocking programs in abeyance while an evaluation was made to determine the programs' effect on the listed and proposed native species.

FWS officials stated that meaningful reviews were not possible until final regulations to implement section 7 of the act were published on January 4, 1978. They believed that these regulations had resulted in a continuous, careful review by all Interior agencies and that such reviews had identified potential and existing conflicts. They also pointed out that in February 1978, procedures were established to insure adequate reviews of all FWS actions and to initiate an internal consultation process. However, the final section 7 regulations had been applicable for over 8 months before the Colorado River Water Conservation

A HUMPBACK CHUB

PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE



District notified FWS that nonnative game fish from Federal fish hatcheries may be adversely affecting a number of listed and proposed species. Only then did FWS initiate the consultation process. In May 1979, FWS officials stated that limited section 7 consultation staff and the time required to implement both the final section 7 regulations and internal FWS consultation procedures had contributed to the delay.

Because of Interior's lead responsibility for endangered and threatened nonmarine species, it should set an example for other Federal agencies in assessing the direct and indirect effects its projects and programs are having on listed species. Additional measures are needed to insure that Interior projects and programs do not compromise or further jeopardize the existence of endangered and threatened species.

#### BIOLOGICAL OPINIONS DELAYED

After consultation has been initiated, the Secretary is required to render a biological opinion detailing how the Federal agency action will affect listed species and their critical habitats. However, some opinions had not been rendered expeditiously. The primary reasons given by FWS officials for the delays were (1) an inadequate number of staff and related problems, such as the complexity of the consultations and lack of timely communication, and (2) the failure of Federal agencies to provide the information needed to render a biological opinion or to return the additional information requested promptly. The latter reason had resulted in FWS returning approximately one of every five requests for consultation to the agencies for additional information or further studies on listed species and their habitats, delaying the consultation.

The regulations finalized on January 4, 1978, required the FWS Director or an FWS regional director to render a biological opinion for the Secretary to the appropriate Federal agency within 60 days after initiation of a request for formal consultation. This time period could be extended if FWS determined that the requesting Federal agency had not provided adequate information to render an opinion, or if a longer time period was negotiated.

Of the 42 consultations initiated in FWS regions I and IV during the first 4 months of 1978, 24 biological opinions (57 percent) were not rendered in 60 days. For at least three of these consultations, delays were requested by

Federal agencies and longer time periods were agreed on. However, FWS returned another 8 of the 42 requests for consultation (19 percent) to the agencies for additional information or further studies, including data on species and their habitats. For example:

--A final biological opinion on the Bureau of Reclamation's Mid-Valley Canal project in the California Central Valley had been postponed indefinitely while additional data was gathered on (1) the present and potential distribution of blunt-nosed leopard lizards (see photo on p. 44) and San Joaquin kit foxes along the proposed canal and (2) the indirect impacts which would occur if the canal raised ground water levels in the area, thereby making it possible for private landowners to develop additional desert lands.

--A final biological opinion on the U.S. Navy's construction of oil storage tanks and a connecting pipeline at the Elk Hills Naval Petroleum Reserve in California had been delayed indefinitely while detailed habitat assessments on the California condor, San Joaquin kit fox, and blunt-nosed leopard lizard were conducted.

--A biological opinion on a Corps of Engineers dredging project in the Los Angeles Harbor was postponed for about 6 months while a detailed study was conducted on a least tern colony's preferred feeding areas. (See photo on p. 45.) FWS also requested information from the Corps on the project's impact on the species and its habitat. The Corps did not provide the information requested because extensive studies would be required that would result in considerable time delay. The Corps also believed that sufficient data was available for FWS to render an opinion. On December 27, 1978, FWS rendered a jeopardy biological opinion because the Corps could not insure that its actions would not jeopardize the species.

The 1978 amendments require Federal agencies to conduct biological assessments to identify listed or proposed species which are likely to be affected by their projects and programs. Biological opinions should be rendered within 90 days, or in a period mutually agreeable to the Federal agency and the Secretary, and should be based on the results of the

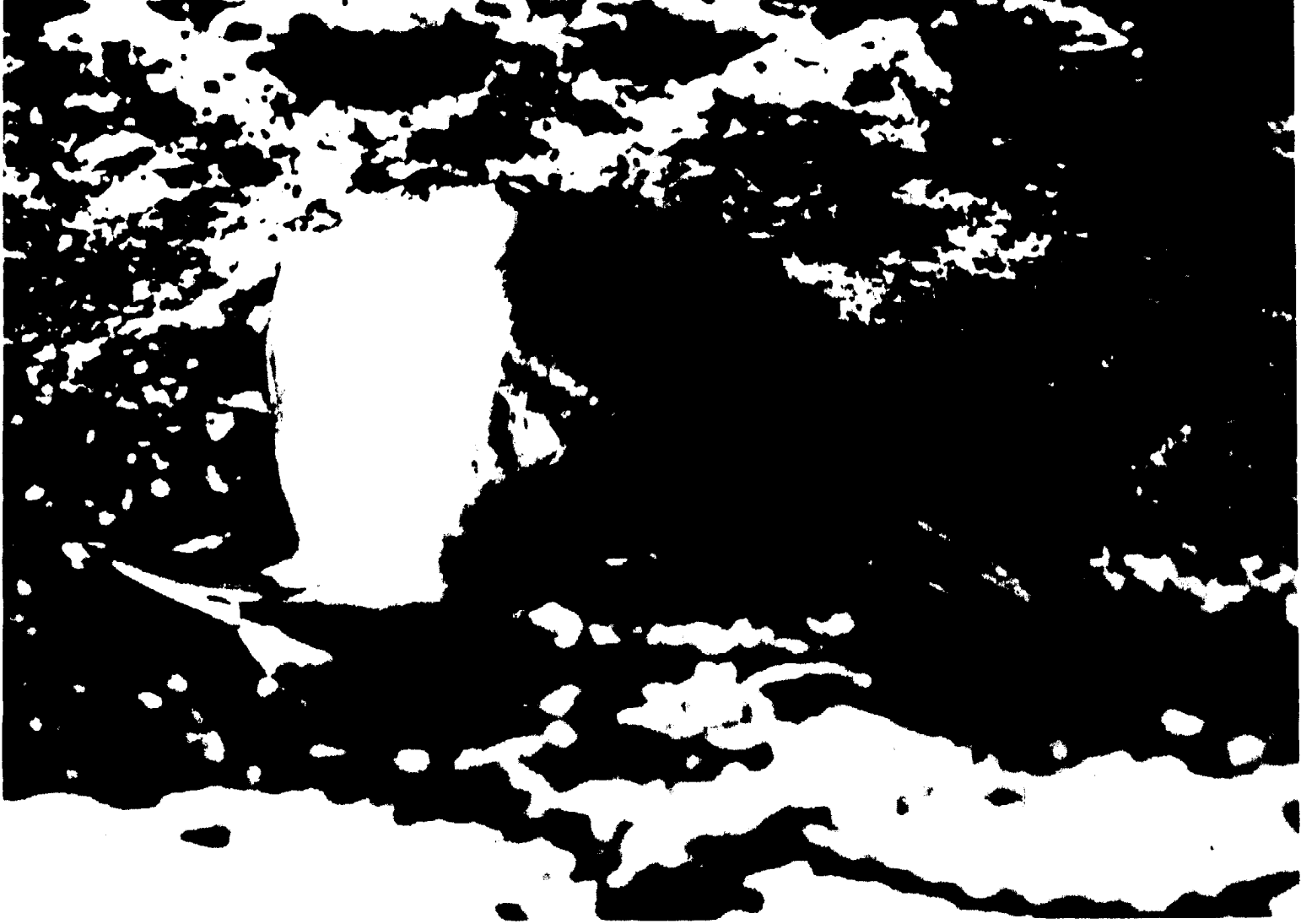


PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE

A BLUNT-NOSED LEOPARD LIZARD

A CALIFORNIA LEAST TERN

PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE



biological assessments. However, the 90-day time period for rendering biological opinions may not be met consistently. Of the 42 consultations initiated in FWS regions I and IV during the first 4 months of 1978, 11, or 26 percent, of the biological opinions exceeded the 90-day requirement, and 7 of these opinions were not rendered for over 150 days.

According to FWS officials, FWS records indicate that the new section 7 positions funded in fiscal year 1979 had resulted in increased effectiveness in completing consultations. However, unless FWS identifies the minimum biological data required to render biological opinions, such as species' population, distribution, and biological needs, Federal agencies may not develop the additional data needed when they conduct biological assessments or otherwise comply with the requirements of the National Environmental Policy Act of 1969.

FWS officials informed us that revised regulations being developed to incorporate the 1978 amendments will include additional requirements relative to the biological data needed in biological assessments and information and data that must accompany written requests for consultations. This should result in more biological opinions being rendered within the legislatively mandated time period.

#### MONITORING OF CONSULTATIONS INADEQUATE

FWS had not developed procedures to adequately monitor section 7 consultations and to allocate resources, including personnel. Also, FWS had requested and received increased appropriations for section 7 consultations based on estimates only.

Before September 1977, FWS had no formal system to identify and monitor requests for consultation. Beginning in September 1977, all FWS regional offices were required to prepare monthly reports on the number of formal (written) and informal consultations initiated and completed as well as work hours needed for each. However, FWS officials stated that the fiscal year 1978 monthly reports were inaccurate because regional personnel did not report all informal consultations or the work hours required. Therefore, the total number of consultations initiated and the time required to complete each had never been identified.

Even if all informal consultations had been reported, deficiencies in the monthly reports would have made them inadequate for monitoring and resource allocations. The



reports contained duplicative consultations because when two or more formal and/or informal requests were made for the same Federal project or program, they were sometimes reported separately. For example, a consultation involving an active bald eagle's nest on the site of a planned high school was counted as an informal consultation initiated in November 1977, and as formal consultations initiated in December 1977 and February 1978.

FWS's fiscal year 1979 budget justification stated that in fiscal year 1977, when consultation was optional, over 4,500 consultations were carried out and estimated that in fiscal year 1979, after consultation had become mandatory, consultations would exceed 20,000. These figures were also presented in testimony before subcommittees of the Senate Committee on Environment and Public Works and House Committees on Appropriations and Merchant Marine and Fisheries to justify increasing fiscal year 1979 funding for consultations.

FWS officials admitted that the 4,500 figure was an estimate of the total consultations that had occurred over an 18-month period as opposed to the total fiscal year 1977 consultations, as stated in the budget justification and hearings. These officials also admitted that there was limited data on which to base the number of consultations projected for fiscal year 1979.

Based primarily on telephone queries of FWS regional personnel, FWS officials projected 20,000 interagency consultations in fiscal year 1979. Another 4,000 intra-FWS consultations were added to the total. FWS officials estimated that 90 percent of the 24,000 consultations would require an average of 1 hour to complete, 5 percent would require an average of 8 hours to complete, and the remaining 5 percent would require an average of 90 hours to complete. The total hours required were then converted to professional staff-days and staff-years and used to justify the over \$2.1 million appropriation increase for fiscal year 1979 consultations.

The projected number of consultations used by FWS to justify the fiscal year 1979 increase had proven inaccurate. For example, on May 24, 1978, the Assistant Secretary for Fish and Wildlife and Parks informed a subcommittee of the House Committee on Merchant Marine and Fisheries that approximately 1,500 consultations had been conducted during the first 8 months of fiscal year 1978. Our analysis of the monthly consultation reports showed that only 609 consultations (41 percent of the total stated)

had been reported during this period, of which 442 (73 percent) were informal.

Data provided by FWS in April 1979 showed that only 918 consultations were initiated during fiscal year 1978, of which 634 (69 percent) were informal. Also, FWS's fiscal year 1980 budget justification stated that only 2,600 consultations were anticipated for fiscal year 1979 as opposed to the 24,000 originally projected.

FWS officials stated that the number of consultations conducted is not the sole determinant of funding and staff needs and that time spent in conducting consultations, which may vary widely in cost, must also be considered. While we agree that the time and costs associated with a consultation will vary, data provided by FWS in April 1979 showed that the FWS regional offices spent only about \$313,300 for consultations during fiscal year 1978 even though end-of-year surplus funding was available within several regions and that contingency funds withheld pending section 7 consultations were not needed. (See pp. 31 to 32.)

Adequate and accurate data is not only necessary for participation in the Federal budget formulation process but is also needed to assure that funds appropriated are effectively allocated. While the total fiscal year 1979 funding increase for section 7 consultations may not have been required, the listing process had not been funded commensurate with its priority within the endangered species program. (See pp. 30 to 34.) Therefore, FWS should improve its section 7 procedures to assure that the number and complexity of consultations are identified and resources are allocated accordingly.

In May 1979, FWS officials informed us that the procedures to monitor section 7 consultations were being revised to eliminate any further duplication in accounting methods. They feel that progress had been made and stated that further refinements to the reporting system were in progress.

#### CONCLUSIONS

FWS had continually improved the consultation process; however, conflicts involving ongoing and planned Federal projects and programs had not always been identified or resolved promptly. Further improvements could avoid unnecessary project delays and adverse impacts on endangered and threatened species and their critical habitats.

## APPRAISAL OF AGENCY COMMENTS

FWS officials agreed that the minimum biological data required to render biological opinions should be identified and that monitoring of consultations must be improved. They also agreed that it would be desirable for Interior to set an example for other Federal agencies in assessing the direct and indirect effects their projects and programs are having on listed species. However, according to FWS officials, this recommendation must be qualified to recognize funding and staff constraints.

We believe that if the Federal agency having lead responsibility for endangered and threatened nonmarine species justifies noncompliance with the act because of funding and staff constraints, other Federal agencies whose primary responsibilities are not necessarily compatible with the conservation of endangered and threatened species cannot be expected to adhere to the section 7 requirements. The interagency cooperation provisions, considered to be the most far-reaching protection tool in the 1973 act, cannot be effective until Interior sets an example worthy of being copied by other Federal agencies.

## RECOMMENDATIONS TO THE SECRETARY OF THE INTERIOR

The Secretary should again direct all Interior agencies to review projects and programs administered by them to determine their impact on endangered and threatened species and monitor their compliance and the consultations initiated to resolve the conflicts identified. Further, the Secretary should direct the FWS Director to:

- Identify and include in the section 7 regulations the minimum biological data required to render biological opinions so that any necessary data can be developed by other Federal agencies when they conduct biological assessments or otherwise comply with the requirements of the National Environmental Policy Act of 1969.
- Develop procedures to identify accurately the number and complexity of consultations with other Federal agencies.

## RECOMMENDATION TO THE CONGRESS

The projected number of consultations and associated costs used by FWS to justify over \$2.1 million in increased funding for consultations in fiscal year 1979 had proven inaccurate. Only 918 consultations were initiated in fiscal year 1978, of which 634 (69 percent) were informal. The FWS regional offices spent only about \$313,300 for consultations during that fiscal year even though additional funds were available and contingency funds withheld pending section 7 consultations were not needed. Also, FWS's fiscal year 1980 budget justification anticipated only 2,600 consultations for fiscal year 1979 as opposed to the 24,000 originally projected. Therefore, the Congress should not increase funding for section 7 until FWS develops valid, adequate, and accurate data on the number and complexity of consultations and the resources allocated.

## CHAPTER 4

### FURTHER LEGISLATIVE CHANGES COULD

### BETTER BALANCE SPECIES PROTECTION AND

### ECONOMIC GROWTH AND DEVELOPMENT

A complex, emotional environmental issue, deliberated and acted on by the 95th Congress, involved how the benefits of national economic growth and development should be weighed against the importance of protecting endangered and threatened species and their critical habitats. The Endangered Species Act Amendments of 1978 established a high-level Endangered Species Committee to grant exemptions from the protective provisions of the act and redefined the term "species" to exclude distinct populations of invertebrates. However, the act, as amended:

- Permits the Fish and Wildlife Service to continue to list geographically limited populations of vertebrate species as endangered or threatened even though they may not be endangered or threatened throughout all or a significant portion of their existing ranges or their overall statuses are not known. Such listings could increase the number of potential conflicts with Federal, State, and private projects and programs.
- Does not make clear whether permanent exemptions are available for all Federal projects and programs. For some projects and programs the lengthy consultation process may have to be initiated and the action stopped each time an affected species is listed and a potential conflict is identified.
- Permits projects and programs to continue without adequate consideration of their impact on species for which notices of review or proposed listing regulations have been published in the Federal Register, which could jeopardize their survival.

To correct these problems, we believe the Congress will need to further amend the Endangered Species Act.

ONLY SPECIES WHICH ARE ENDANGERED  
OR THREATENED THROUGHOUT ALL OR A  
SIGNIFICANT PORTION OF THEIR EXISTING  
RANGES SHOULD BE LISTED

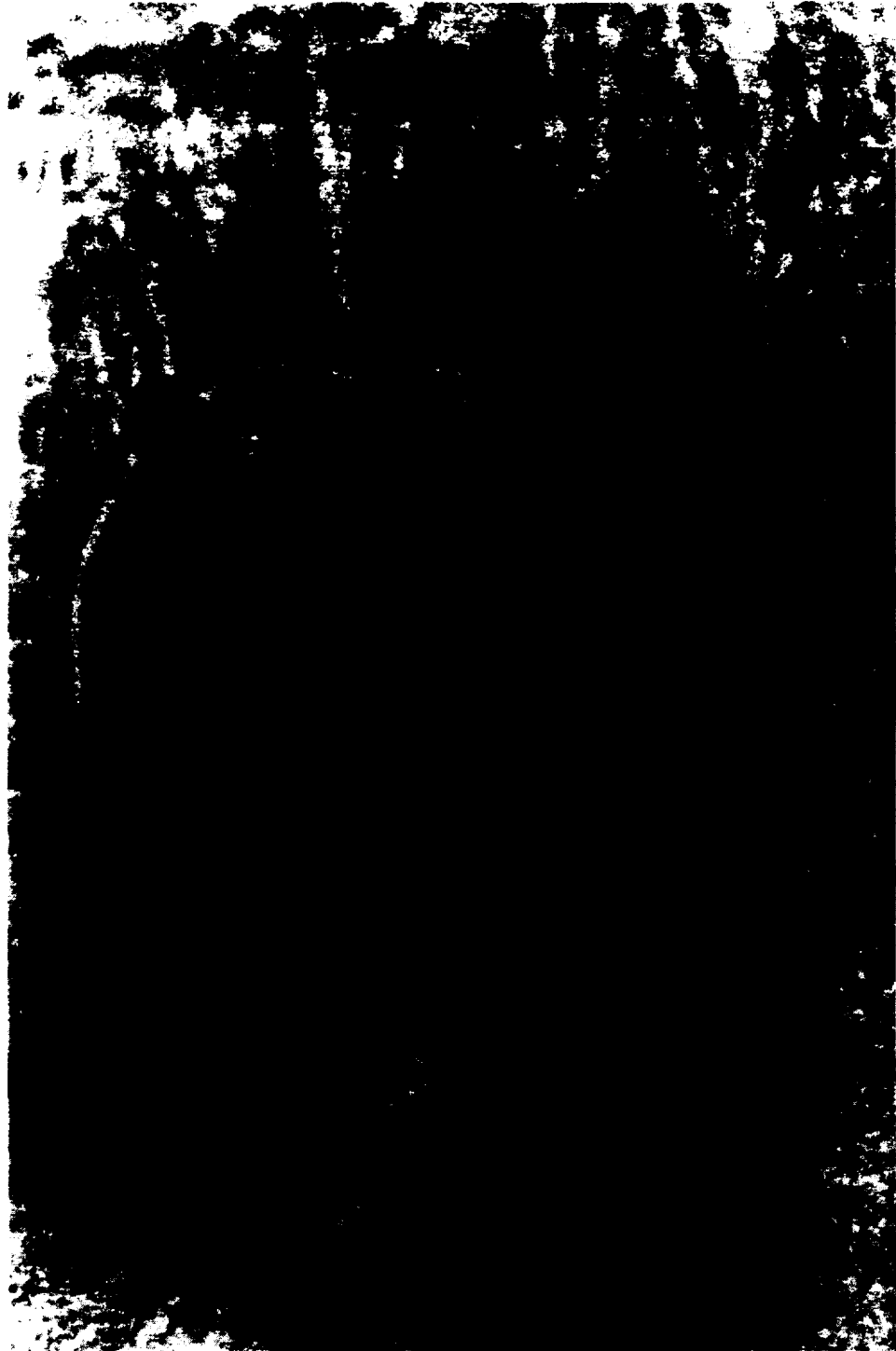
FWS may list populations of species in limited geographical areas as endangered or threatened instead of listing entire species (see pp. 103 to 105), and populations may be listed even though the species are not endangered or threatened throughout all or a significant portion of their existing ranges or their overall statuses throughout their ranges are not known. Such listings could increase the number of potential conflicts between endangered and threatened species and Federal, State, and private projects and programs.

The definition of species in the 1973 act included any subspecies of fish, wildlife, or plants and any other group of fish or wildlife of the same species or smaller taxa (group) in common spatial (space) arrangement that interbreed when mature. This definition permitted FWS to list populations of species, regardless of their size, location, or total numbers. Thus, squirrels in a specific city park could be listed as endangered, even though an abundance of squirrels lived in other parks in the same city and elsewhere.

FWS began using the species definition to list populations in broad geographical areas as endangered or threatened and to list species as endangered in some areas and threatened in others. The grizzly bear (see photo on p. 53), listed as threatened in the 48 conterminous States in July 1975 but left unprotected by the act in Canada and Alaska, is an example of a species listed in a broad geographical area. The bald eagle, American alligator, and gray wolf (see photo on p. 54) are examples of species which had been listed as both endangered and threatened in parts of their ranges.

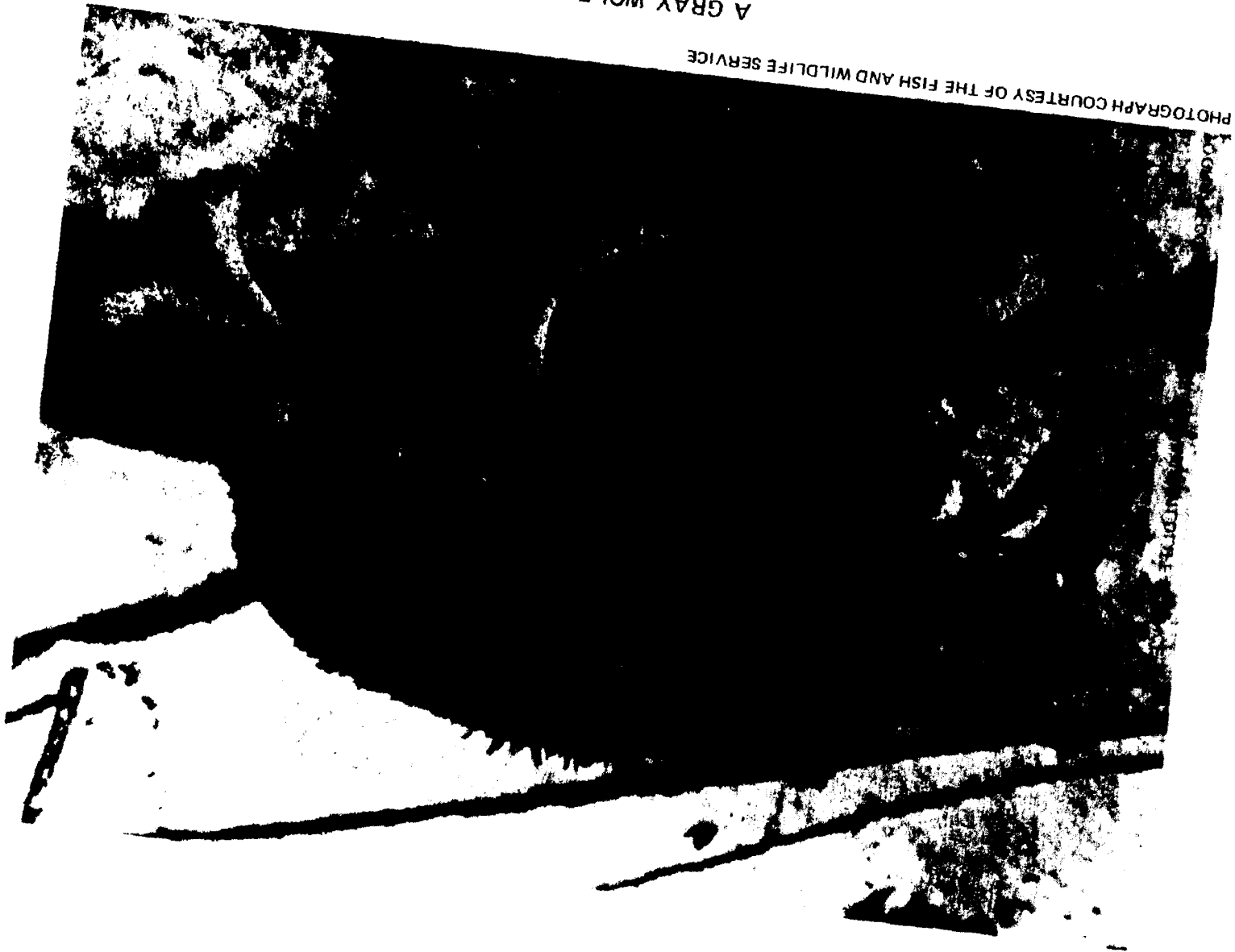
FWS listed species this way to provide different degrees of protection to them based on their statuses within given geographical areas. For example, after listing the grizzly bear, FWS published regulations which permit the species to be taken only for approved scientific and conservation purposes in Washington, Wyoming, and Idaho, but permit limited sport hunting of the species in northwestern Montana.

In fiscal year 1978, FWS listed or proposed for listing other geographical populations. The Florida population of



PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE

A GRIZZLY BEAR



A GRAY WOLF

PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE



the Pine Barrens tree frog was listed as endangered in November 1977, when its overall status in the four States in which it exists had not been determined and for which preliminary survey data, obtained by the State of Florida after listing, indicated it is more plentiful than originally thought. (See p. 32.) The listing may conflict with land development and agriculture in western Florida. Also, in August 1978, the Beaver Dam Slope population of the desert tortoise in Utah (see photo on p. 56) was proposed for listing as endangered before a survey to determine the overall status of the species throughout the Southwestern United States and adjacent areas of Mexico was begun. (See map on p. 57.) If the Beaver Dam Slope population is listed, Bureau of Land Management livestock grazing activities in the area could be eliminated or further curtailed.

The 1978 amendments to the act redefine the term "species" to exclude distinct populations of invertebrates. However, the new definition of species will not affect the listing of geographically limited populations of vertebrates, such as the Pine Barrens tree frog and desert tortoise. Therefore, either the term species should be redefined to exclude all distinct population listings, or population listings should be limited to significant portions of species' ranges.

#### Redefining the term "species"

If the term species is redefined to limit listings to entire species, FWS would have to review the status of all species listed in only parts of their ranges or listed as endangered in some areas and threatened in others. Based on the reviews, FWS would determine which species are endangered or threatened throughout all or a significant portion of their ranges. Species found to be endangered or threatened would be listed throughout their entire ranges, while species found not to be endangered or threatened throughout all or a significant portion of their ranges would be delisted.

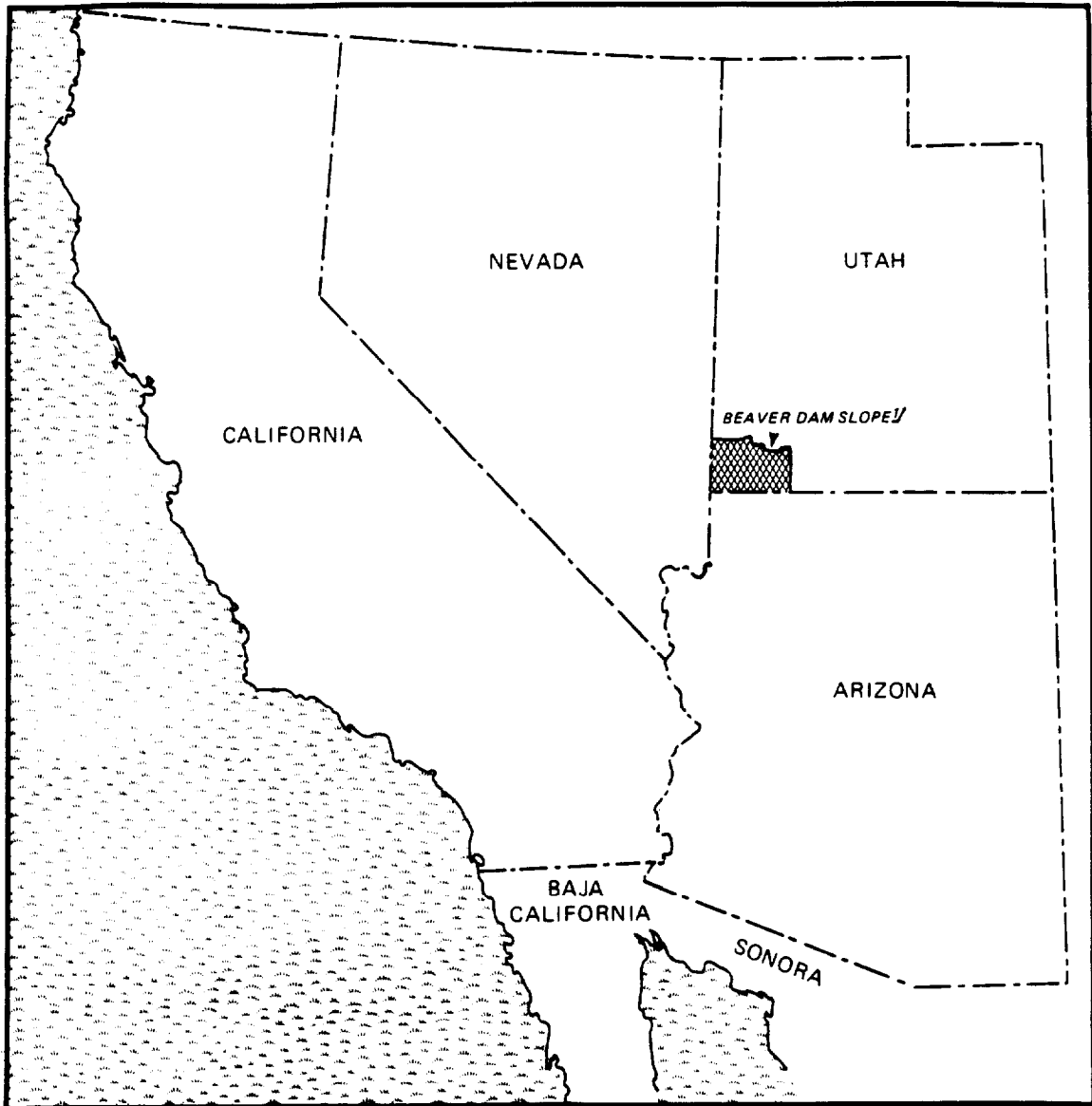
For example, only the Florida population of the Pine Barrens tree frog is now listed as endangered. This listing would not be permitted if the term species is redefined. FWS would have to find that the frog is endangered or threatened throughout all or a significant portion of its range in the four States where it exists, and the entire species would have to be listed.

Interior's response to our revised draft report (see p. 122) stated that redefining the term species to limit



PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE · A DESERT TORTOISE

MAP SHOWING THE RANGE OF THE DESERT TORTOISE AND PROPOSED CRITICAL HABITAT OF THE BEAVER DAM SLOPE POPULATION 1



1/ Proposed critical habitat for the Beaver Dam Slope population is roughly a 50-square mile section of Southwestern Utah bordered by Arizona to the south, Nevada to the west, and various land sections within Washington County, Utah, to the north and east.

listings of vertebrates to species and subspecies was unacceptable because such a definition (1) might necessitate a needless allocation of resources to such activities as section 7 consultations on biologically nonendangered populations of certain species which would have to be listed in total and (2) could prevent FWS from providing legal protection to widespread species, such as the gray wolf, which are listed solely to protect populations in the conterminous United States. We agree that additional pro forma consultations may be required if species such as the bald eagle, which are now listed as both endangered and threatened in only parts of their ranges, are listed in total. However, the act, while specifically prohibiting certain actions for all endangered species, permits the Secretary to issue only those regulations deemed necessary to conserve threatened species. Thus, certain acts--such as controlled hunting and fishing, exportation from the United States, interstate commerce, and sale--that are prohibited for all endangered species, may be permitted under more flexible regulations tailored to meet the status of each threatened species in various areas of its range.

For example, FWS could find that the bald eagle is likely to become an endangered species in the foreseeable future throughout a significant portion of its range, and would list the entire species as threatened. The Secretary could then issue only those regulations deemed necessary to conserve the species. This could include limiting the protection afforded the species in areas where it is relatively abundant (e.g., Alaska) to that provided by the Bald Eagle Protection Act, while applying the endangered species prohibitions to other areas of the eagle's range. As a result, the species would be adequately protected without substantially increasing resources for additional consultations, and the consultations would serve as a means to monitor the status of the species in areas where it is assumed to be biologically secure.

We also agree that a few listed species, such as the gray wolf and the American crocodile, whose ranges are widespread and/or primarily outside the conterminous United States, may be delisted. However, the purpose of the Endangered Species Act is to conserve endangered and threatened species and their critical habitats, not preserve every individual animal and plant. This is evidenced by FWS publishing regulations which permit the killing of

species listed as endangered or threatened, such as the gray wolf and grizzly bear. Redefining the term "species" to limit listings to species and subspecies that meet either the act's definition of an endangered species or the act's definition of a threatened species would, therefore, be consistent with the intent of the act. Further, species which are delisted could still be protected by States' laws.

We believe that the benefits of limiting listings to species and subspecies are threefold. First, FWS could not list a species population adversely affected by a Federal, State, or private project or program when the species is not endangered or threatened. Secondly, accountability for listing decisions would be increased. FWS would not only have to show that a species is endangered or threatened throughout all or a significant portion of its range before listing, but would also have to justify the regulations providing different degrees of protection to threatened species based on their statuses within given geographical areas. Thirdly, recovery efforts would be maximized by expending the limited funds available on species which are endangered or threatened throughout all or a significant portion of their ranges. Of course, the revised definition could be circumvented by determining that a given regional population is sufficiently distinct to be listed as a subspecies.

#### Defining "significant portion"

An alternative acceptable to FWS officials is to limit population listings to "significant portions" of species' ranges. They contend that this would simply give legislative sanction to the reasonable interpretation FWS officials have made of the existing species definition. (See p. 123.)

In May 1979, the chief of FWS's listing branch provided us with draft guidelines and criteria for determining endangered or threatened species, which were under review within the Office of Endangered Species. The draft guidelines define significant portion as (1) more than half of a species' range, which may include historical as well as recent and anticipated future losses or (2) losses of habitat totaling less than 50 percent for species of relatively small range, or in other circumstances where the loss may have an inordinately large negative impact on the species' survival. Using this definition, the Beaver Dam Slope population of the desert tortoise may not

qualify for listing as a significant portion of the species' range.

The benefits of limiting population listings to significant portions of species' ranges would be similar to the benefits of limiting listings to entire species. First, FWS could not list a species population adversely affected by a Federal, State, or private project or program unless it constituted a significant portion of the species' range. Secondly, FWS would have to show that the population constituted a significant portion of the species' range, in terms of (1) total numbers, (2) biological importance, or (3) the need to maintain the species within the United States. Thirdly, recovery efforts would be maximized by expending the limited funds available on species which are endangered or threatened throughout their ranges or on populations which constitute significant portions of species' ranges. Also, since the entire species would not be listed, the number of consultations with other Federal agencies may be less than if the definition of species is redefined to exclude all distinct populations. Any definition of significant portion could also be circumvented by listing a given regional population as a subspecies.

PERMANENT EXEMPTIONS SHOULD COVER  
ALL FEDERAL PROJECTS AND PROGRAMS

While congressional intent was for the permanent exemption provisions of the 1978 amendments to apply to both on-going and new projects, one of the conditions for a permanent exemption--the preparation of a biological assessment--may not be satisfied for projects committed to or under construction before November 10, 1978. The current language also may exclude permanent exemptions for Federal actions not involving construction, such as timber harvesting, livestock grazing, and recreational development. Therefore, the act should be clarified to permit the Endangered Species Committee to grant permanent exemptions for all Federal projects and programs.

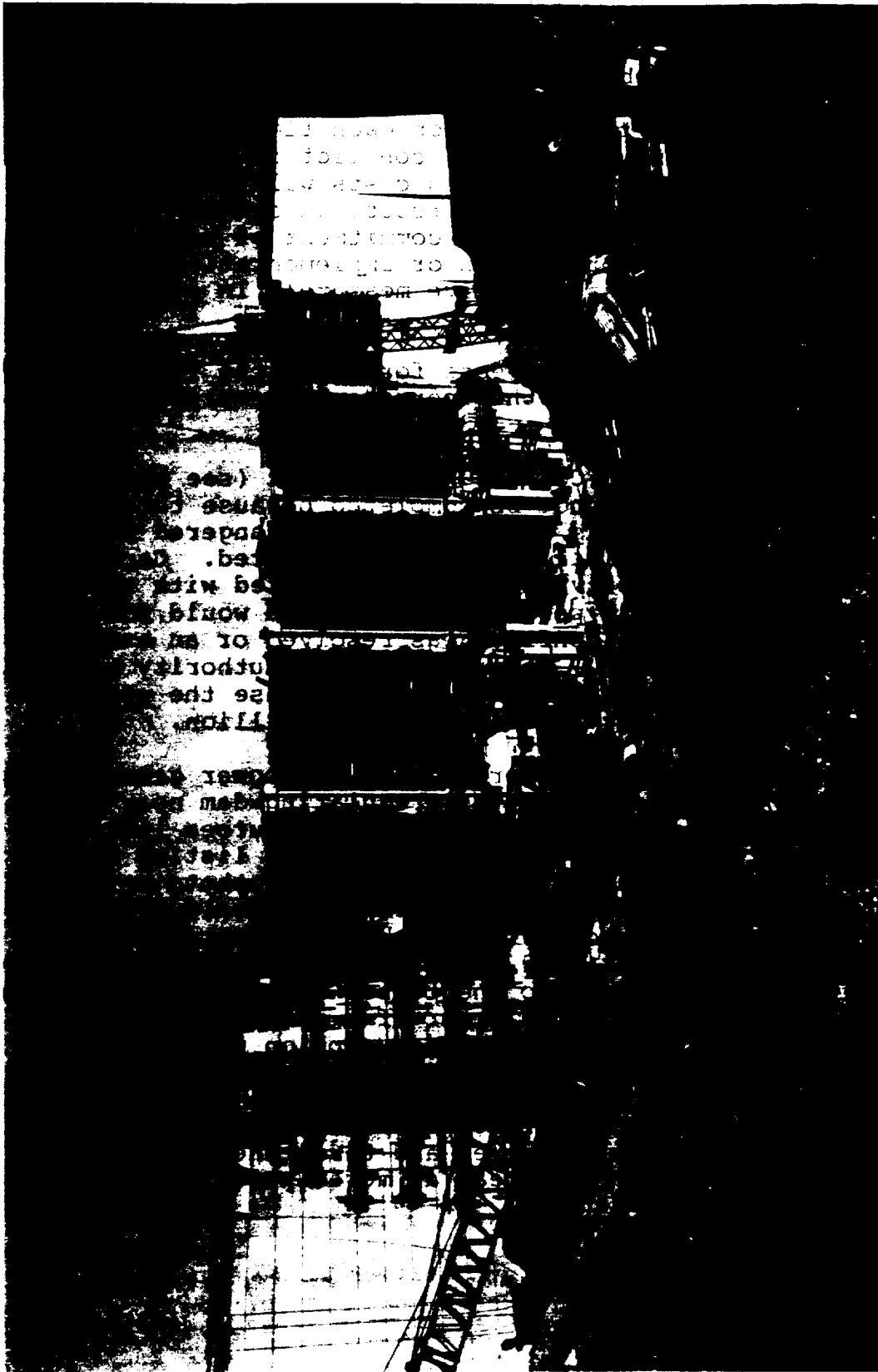
Section 7 of the act, as amended, (1) requires mandatory consultation by Federal agencies whenever an action may affect a listed species or its critical habitat, (2) requires a Federal agency to conduct a biological assessment to identify any listed or proposed species which is likely to be affected by an action for which construction had not been committed or begun at the time the 1978 amendments were enacted, and (3) provides that an exemption is

permanent only if a biological assessment has been conducted, unless the exemption will result in the extinction of a species found later. Thus, for projects committed to or under construction on November 10, 1978, as well as all Federal actions not involving construction, Federal agencies may be required to request an exemption each time an affected species is listed and a potential conflict is identified. Delays and corresponding increased costs will occur because the act states that during this process an agency can make no irreversible or irretrievable commitment of resources which forecloses the formulation or implementation of any reasonable and prudent alternative measure. In other words, the project may stop.

Examples of Federal projects for which the 1978 amendments do not make clear whether permanent exemptions may be granted include:

- The \$140 million Columbia Dam project (see photo on p. 62), which cannot be completed because three species of mussels were listed as endangered and a jeopardy biological opinion was rendered. Certain construction activities had been halted with the project about 30 percent complete and would not start again until the conflict was resolved or an exemption was granted. Tennessee Valley Authority officials estimated that the delay would increase the project's cost by between \$8 million and \$14 million.
- A Corps of Engineers project to add power generating units and to construct a reregulating dam near Libby, Montana, which was delayed, with resources lost, because the bald eagle was listed. The listing had stopped construction of a bridge (see photo on p. 63) and a construction-related timber sale. The cost associated with delaying the bridge construction was estimated at \$100,000, and the Corps may be liable for increased cost to the timber contractor. Additional resource losses could occur if a jeopardy biological opinion is rendered and the exemption process is initiated.

The number of potential conflicts between Federal projects and programs and endangered and threatened species will increase in the years ahead as more species are listed



PHOTOGRAPH COURTESY OF THE TENNESSEE VALLEY AUTHORITY

OVERALL VIEW OF UPSTREAM FACE OF COLUMBIA DAM IN TENNESSE, TAKEN IN NOVEMBER 1977





PHOTOGRAPH COURTESY OF THE ARMY CORPS OF ENGINEERS

WORK IN PROCESS ON THE TEMPORARY CONSTRUCTION HAUL BRIDGE, A PART OF THE LIBBY DAM PROJECT  
ON THE KOOTENAI RIVER, MONTANA

and their critical habitats specified. (See p. 100.) FWS estimated that between 50 and 100 Federal agencies could eventually be affected. There will inevitably be conflicts involving projects committed to or under construction at the time the 1978 amendments were enacted. For example, nine other species (four snails, three fish, one mussel, and one plant) in the area of the Columbia Dam project had been either proposed for listing or identified as candidate species by FWS. The project may have to be stopped and the lengthy consultation process initiated each time one of these species is listed and a potential conflict is identified.

FWS officials stated that an amendment of limited scope may be called for. They suggested that the act be amended to require all Federal agencies to prepare biological assessments for those projects subject to the exemption process. They believed that this modification would not only make clear that the permanent exemption provision is applicable to projects committed to or under construction on the date the amendments were enacted, but would also ensure that the Committee would have a complete summary of a project's effect on protected species.

Our proposed amendment (see pp. 106 to 110) would permit a Federal agency to conduct a biological assessment voluntarily for any agency action. This would allow permanent exemptions not only for projects committed to or under construction before November 10, 1978, but also for all actions not involving construction. Of course, the act would continue to require that the Committee reconsider any permanent exemption which would result in the extinction of a species found later.

CANDIDATE AND PROPOSED SPECIES SHOULD  
BE INCLUDED IN THE CONSULTATION PROCESS

The 1978 amendments are intended to introduce flexibility into the 1973 act without violating its integrity. However, the act, as amended, limits section 7 consultations to listed species and grants permanent exemptions to projects for which biological assessments have been conducted only for listed and proposed species. This may jeopardize the survival of species already identified by FWS for listing as endangered or threatened and could stop a project after construction has begun if FWS finds that it

will result in the extinction of a species not adequately considered in the consultation.

For example, two of the three species listed at the Columbia Dam project were candidates for listing as endangered before construction began, and completion of the project may render extinct these or some of the nine other candidate or proposed species in the area of the dam. Similarly, information on the bald eagle which had delayed the Corps of Engineers project near Libby, Montana, was available 19 months in advance of its listing.

Biological assessments, focusing on candidate as well as listed and proposed endangered and threatened species, would provide FWS with additional biological information on which to make listing decisions, especially for species suspected of being in danger of extinction by a planned Federal project. The results of such biological assessments would also provide the Endangered Species Committee with additional data in weighing the importance of conserving species against the need for a Federal project. Including candidate and proposed species in section 7 consultations and permanent exemptions could minimize the possibility that the Committee will have to reconsider an exemption granted because FWS finds later that the project would result in the extinction of a species.

FWS officials are opposed to including candidate and proposed species in biological assessments and section 7 consultations because (1) biological opinions may have to be rendered on species which have not been listed, (2) a consultation and biological opinion may have to be based on incomplete information, (3) consultations would be required where they would not have occurred if limited to listed species, and (4) the act permits informal consultations for any proposed species, if needed.

We agree with FWS officials that biological opinions may be required for species for which final listing regulations have not been published in the Federal Register and that complete information may not always be available. However, a thorough and complete biological assessment could generate the additional information needed to list a species or exclude it from further listing consideration. In cases where the assessment does not result in enough information to make a listing decision, the biological opinion could be

qualified to reflect the status of the species in the listing process and future actions planned. This would alert both the responsible Federal agency and the Committee concerning the future listing potential of the species involved.

We do not agree with FWS that additional consultations would necessarily be created by including candidate and proposed species. What could occur is that consultations which would have involved ongoing projects would have been resolved before construction began, avoiding the costs associated with later delay. Finally, our recommendation would make the results of what are now informal consultations available to the Committee in its deliberations.

### CONCLUSIONS

The 1978 amendments were intended to introduce flexibility into the 1973 act without violating its integrity. However, we believe the Congress will need to further amend the Endangered Species Act to better balance species protection and economic growth and development.

### APPRAISAL OF AGENCY COMMENTS

FWS officials agreed that an amendment may be required to permit the Endangered Species Committee to grant permanent exemptions for Federal projects committed to or under construction before November 10, 1978, the date the 1978 amendments were enacted. They found our recommendation to redefine the term species to exclude distinct populations of vertebrates unacceptable, but were agreeable to limiting population listings to significant portions of species' ranges. FWS officials were opposed to including candidate and proposed species in biological assessments and section 7 consultations. As stated previously (see pp. 65 to 66), we believe that the benefits to be derived from including candidate and proposed species in biological assessments and section 7 consultations more than outweigh the advantages of not considering them at all or including them only in informal consultations.

### RECOMMENDATIONS TO THE CONGRESS

The 1978 amendments to the act redefine the term species to exclude distinct populations of invertebrates. However, the new definition will not affect the listing of

geographically limited populations of vertebrates. Such listings could increase the number of potential conflicts between endangered and threatened species and Federal, State, and private projects and programs. Therefore, the Congress should amend section 3 of the Endangered Species Act either by redefining the term species to exclude all distinct population listings or defining the term significant portion and limiting population listings to those that meet this definition.

The act, as amended, also provides that an exemption, granted by the Endangered Species Committee, is permanent if a biological assessment has been conducted unless the exemption will result in the extinction of a species found later. However, the act only requires (1) a Federal agency to conduct a biological assessment to identify any listed or proposed species which is likely to be affected by a project for which construction had not been committed or begun at the time the 1978 amendments were enacted and (2) mandatory consultation whenever a project or program may affect a listed species or its critical habitat. Therefore, the Congress should amend section 7 of the endangered species act to:

- Make it clear that the Endangered Species Committee is authorized to grant permanent exemptions to all Federal projects and programs. Of course, the act would continue to require that the Committee reconsider any permanent exemption which would result in the extinction of a species found later.
- Allow permanent exemptions only after biological assessments have been conducted that include candidate as well as listed and proposed endangered and threatened species.
- Include proposed and candidate species in all section 7 consultations.

Proposed amendments to incorporate these recommendations, including a definition that would limit candidate species to those for which a notice of review has been published in the Federal Register, are included as appendix VII. (See pp. 106 to 110.) Of course, neither the act nor the proposed amendments preclude the Congress from exempting a specific project or program after weighing its costs and potential benefits against the importance of conserving a species.

## CHAPTER 5

### SPECIES RECOVERY EFFORTS COULD BE IMPROVED

A goal of the endangered species program is to return a listed species to the point where it is no longer endangered or threatened, or to at least stabilize its status. For fiscal year 1978, the Fish and Wildlife Service allocated about \$4.1 million for the maintenance and recovery of and research on endangered and threatened species. Also, about \$4.6 million was obligated for land acquisitions during that fiscal year.

For some species, such as the American alligator, listing and the protection provided, including strong enforcement, were enough to expedite their recovery. For other species, an abbreviated recovery plan requiring a simple action, such as a single land acquisition, was all that was necessary. On the other hand, more involved plans were required for widespread species or groups of species whose statuses or habitats had deteriorated badly and whose recovery entailed numerous actions by more than one organization. Abbreviated plans could be prepared by a team, FWS employee, or other knowledgeable individual, while more involved plans were normally prepared by a team.

FWS had limited success in improving the status of species requiring simple actions, especially single land acquisitions. However, progress had been slow in effecting the recovery or stabilization of species requiring more involved plans. Further, approved FWS recovery plans had not resulted in any species being delisted and only one species being reclassified from endangered to threatened.

Species which would recover to the point where they are no longer endangered or threatened may remain listed unless improvements are made in FWS's recovery efforts. Progress had been slow because:

- Recovery planning and resource allocations had not been guided by a priority system.
- Few recovery plans had been developed and implemented. Recovery plans are needed to order priorities and identify additional actions deemed essential to the survival or recovery of the species.

- Funds had been appropriated to acquire additional land for species whose degree of threat had diminished and/or when viable alternatives to Federal acquisition existed. This had permitted the status of other species to become more precarious because essential habitat had not been obtained and had increased the number of Federal land acquisitions and corresponding funds expended.
- Only 22 States had entered into cooperative agreements with FWS. Consequently, State staff and resources, essential to preserve U.S. fish and wildlife from extinction, had not been committed to the Federal endangered species program.
- Violators had not been deterred by strong enforcement and prosecution under the act, and endangered and threatened species had not been adequately protected.

One area where FWS had shown marked improvement was in granting permits required for scientific purposes or to enhance the propagation or survival of endangered and threatened species. These permits were being issued in a more timely manner. Despite an increased workload, permit processing time had been reduced from 143 days to 80 days, or by 44 percent, during the first half of fiscal year 1978, without an apparent decrease in the quality of the biological review. Further, our review of all applications from nine States, outstanding for more than 90 days during this period, did not reveal any scientific or propagation effort that was adversely affected due to the permit issuing requirements and procedures.

RECOVERY PLANNING AND RESOURCE ALLOCATIONS  
SHOULD BE GUIDED BY A PRIORITY SYSTEM

Through fiscal year 1977, FWS's recovery planning was not based on a recovery priority system. During fiscal year 1977, FWS developed a draft recovery priority system to be used as a guide for recovery planning and resource allocations. The system included 3 criteria--degree of threat, recovery potential, and taxonomic status--in a matrix of 12 priorities for recovery planning and resource allocations. (See p. 101.) However, the system was developed too late in the fiscal year to be used in preparing the fiscal year 1978 program advice.

A review of the August 1978 rankings prepared by FWS biologists indicated that many species considered by them to have high degree of threat to their survival, including some identified as having high recovery potential, had received no, or only minimal, recovery planning and resources. FWS had initiated recovery teams and/or plans for less than half of the 70 species considered to have high degree of threat to their survival even though teams and/or plans had been initiated for many of the lower priority species. (See pp. 114 to 116.) Because recovery plans are the first step in identifying the needs of listed species and are used as a basis for allocating recovery funds, including land acquisitions, it appeared that not all resources had been used for recovery efforts on high priority species. (See pp. 77 to 85.)

FWS officials stated that recovery priorities constantly change as conditions for species deteriorate or improve and as new listings occur, and that it would be poor management to abandon efforts on species nearing reclassification or delisting for species having higher current priority. However, since neither a listing nor a recovery priority system had ever been implemented (see pp. 27 to 28), previous rankings were not available to show the status of species at the time of listing or any improvement.

FWS officials informed us that the draft recovery priority system was used in developing the fiscal year 1979 program advice. They stated that recovery actions requested by the regional offices were ranked according to the species recovery priorities, with resources allocated accordingly. Approval of the draft priority system, and its consistent use, will provide not only a guide for recovery planning and resource allocations, but also a means whereby improvements in species' statuses can be identified.

PROBLEMS IN DEVELOPING AND  
IMPLEMENTING RECOVERY PLANS  
SHOULD BE CORRECTED

The recovery of an endangered or threatened species can be a major task requiring a multiagency effort. To accomplish this, FWS relied on recovery plans to identify and justify recovery actions. However, the effect these plans had on species recovery was limited because



- few plans had been developed or approved,
- some recovery actions were not readily attainable or were inadequate to effect the recovery of the species, and
- monitoring and evaluation of recovery efforts had been limited.

FWS officials hastened to point out that the recovery plan process did not begin until 1973 and that formal guidelines were not approved and disseminated until May 1975. They felt that significant progress had been made and were convinced that the new guidelines and procedures nearing completion would overcome most, if not all, of the problems encountered.

Since the new guidelines and procedures had not been approved at the time of our review, their effectiveness in overcoming the problems identified below could not be determined. However, full compliance with the May 1975 guidelines was never obtained, and approval of the new guidelines and procedures will not assure their effective implementation.

#### Few plans had been developed or approved

One reason recovery efforts had been slow was that recovery plans had been delayed by problems within the recovery teams and by FWS's lengthy review process. Although 64 teams had been appointed by the FWS Director, only 39 plans had been submitted to FWS for review as of October 1, 1978. Of these, only 18 plans had been approved even though many had been in the FWS regional offices for over a year. (See pp. 114 to 116.) Delays within FWS had occurred because of limited staff to review draft recovery plans prior to their approval and because of higher program priorities.

Development of recovery plans was delayed for various reasons, including the limited time the volunteer team members could spend on recovery plan preparation and disagreement among team members on species' needs or recovery actions. For these reasons, 10 teams appointed during 1975 had not submitted draft recovery plans to FWS, including those for the American alligator (see photo on p. 72) and the San Joaquin kit fox.



PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE

AN AMERICAN ALLIGATOR

Delays were also caused because team members spent inordinate amounts of time on matters other than direct recovery actions. For example, the Marine Mammal Commission criticized the Florida manatee recovery team in an August 23, 1978, letter to the FWS Director. The Commission stated that although the team had been appointed over 2 years before, it had spent most of its time on procedural matters and issues such as critical habitat designation and information and education programs. The Commission noted that, meanwhile, manatees (see photo on p. 74) continued to die at an alarming rate (62 documented deaths in the first half of 1978), while the difficult question of how to reduce their mortality was not addressed by the recovery team.

FWS officials stated that the manatee recovery team was placed on inactive status for a year while research on the species continued. They also identified law enforcement, protection, public information, critical habitat identification, and State efforts that had occurred apart from the recovery plan. However, they agreed that an approved recovery plan would assist in ordering priorities and in identifying additional actions deemed essential to the recovery of the species.

Although recovery teams had developed most recovery plans, FWS was making greater use of single organizations, individuals, and in-house expertise. Expanding the use of these other means of developing plans should alleviate some of the reasons for delay inherent in the team approach and may expedite the review process.

Some recovery actions were not readily attainable

FWS expects that a recovery plan acceptable to each recovery team member and cooperating agency can be prepared or that agencies or other cooperators will approve the actions identified for them to accomplish. However, FWS had instructed recovery teams to address only biological considerations and to leave political, socio-economic, and media relations concerns to the responsible FWS regional director and other Federal and State agencies. As a result, recovery teams had developed, and FWS had approved, recovery plans that were not readily attainable because they conflicted with the views, interests,



PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE

A FLORIDA MANATEE

and responsibilities of participating individuals and agencies, and/or coordinating agencies did not have the funds to implement them.

One of the key recovery actions recommended for the palila, a Hawaiian bird, was the elimination of all wild goats and sheep from the State of Hawaii's Mauna Kea Forest Reserve. The recovery team believed that the destructive effects the goats and sheep had on mamane trees, the primary food, shelter, and nesting habitat for the palila, must be stopped. The recovery plan assigned this task, as well as lead responsibility for various research projects, to the State.

Although the palila recovery plan was approved by the Director of FWS in January 1978, the State of Hawaii, while agreeing with the plan's intent, believed that it could not be implemented. State officials contended that the destructive effect the goats and sheep had on the mamane trees had been minimized by reducing the herds and that the reserve could be managed as a dual-use area by maintaining the goats and sheep in limited numbers for hunting interests and fire control. State officials also noted that the research projects appeared to be elaborate, expensive, and time consuming and that the State did not have the funding or personnel for projects of that magnitude.

The failure to consider the nonbiological concerns of coordinating agencies and their funding limitations may adversely affect cooperation efforts and recovery actions. Consideration of nonbiological concerns prior to approving recovery plans may facilitate species' recovery, as alternative actions which are readily attainable can be fully explored.

#### Some recovery actions were inadequate

Recovery plans should identify and justify actions required to effect the recovery of endangered and threatened species. However, implementation of a plan does not guarantee success if the proposed actions are inadequate.

For example, the California condor recovery plan, approved by FWS in April 1975, had not been effective in improving the species' status. Although many of the plan's actions had been implemented, including over \$500,000 for

land acquisitions and various research studies, the condor population had decreased from about 60 to 30 birds. In a report dated June 1978, an advisory panel appointed jointly by the American Ornithologists Union and the National Audubon Society stated:

"Although the Recovery Plan is an important step, the plan's stated goals are short-sighted and unnecessarily conservative. To strive for a stable population of 50 individuals within the condor's present range is to attempt to maintain the species precariously on the brink of extinction rather than to give the species a reasonable chance for self-perpetuation with minimum human assistance. The Recovery Plan fails to recognize that under any conceivable circumstances the condor population will always depend to a large extent upon man for its well-being. To minimize this dependence, the condor population must be increased to several hundred individuals widely throughout suitable habitat."

To increase the condor population, the recovery team proposed a contingency plan that included a captive breeding program. The condor advisory panel and FWS officials also reviewed this proposal and found it vague and lacking adequate criteria and specificity, including the number and age of the birds to be trapped; method of trapping; program organization, location, facilities, and personnel; and release of condors to their natural habitat. The panel and FWS recommended that the breeding program not begin until these defects were corrected.

FWS officials stated that the possible shortcomings of the original recovery plan were clearly recognized by both the recovery team and FWS. Also, according to them, defects in the original contingency plan were corrected before the captive breeding program was approved.

Periodic reviews of recovery plans within FWS, similar to the one performed on condors, are needed to assess the adequacy of recovery actions. However, monitoring and evaluation of recovery efforts by FWS had been limited.

#### Monitoring and evaluation of recovery efforts were limited

FWS had not adequately monitored or evaluated recovery plans and actions to determine their effects on listed

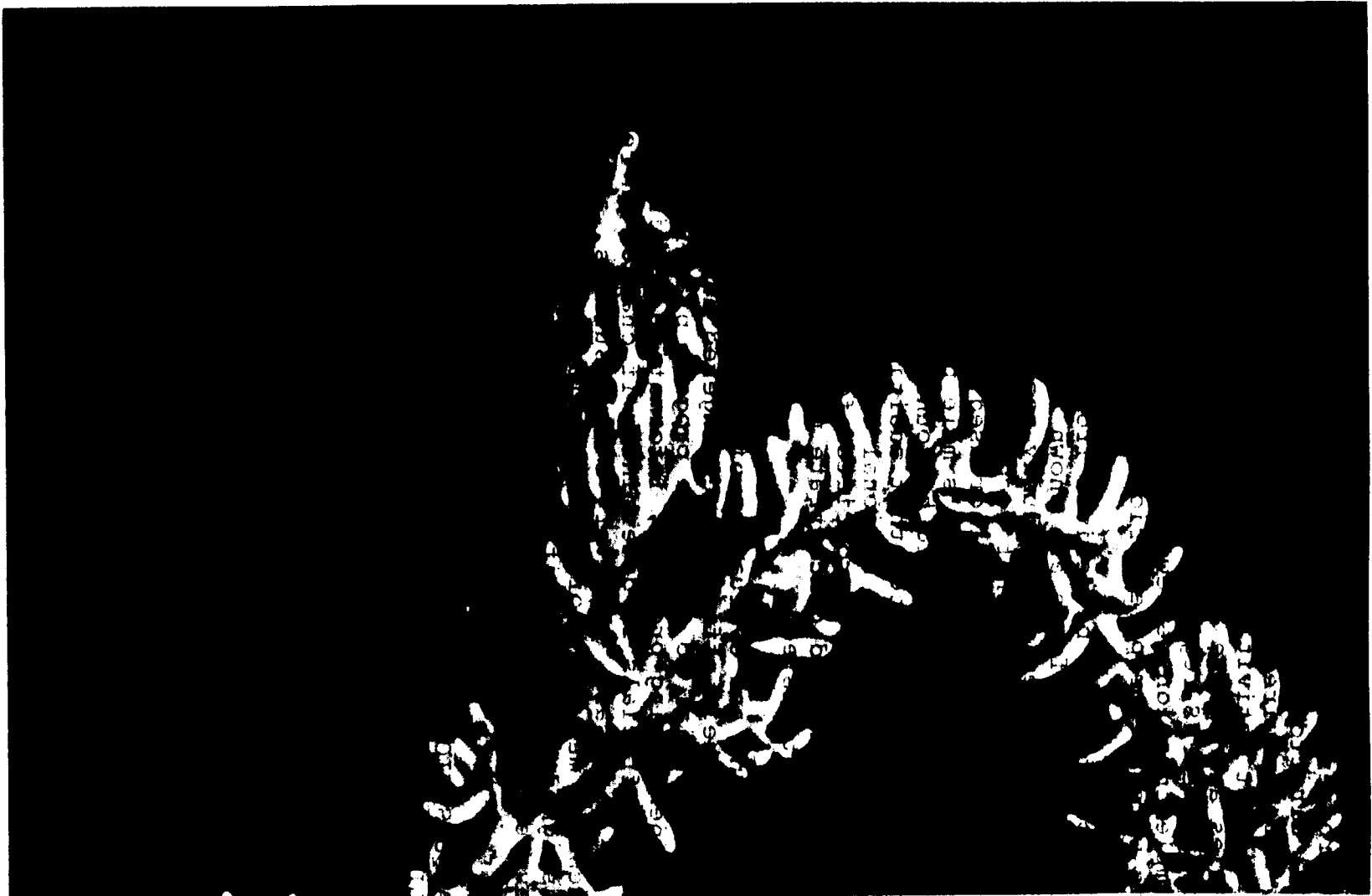
species. FWS guidelines, still in draft form, required FWS regional directors to prepare semiannual status reports on the progress made in implementing recovery plans. The regional directors, assisted as appropriate by recovery teams, were required to monitor continuously the effects of management activities and changes in the recovery needs of species and update recovery plans as necessary. In the interim, some FWS regional offices had made limited recovery plan implementation reviews, while others had not. Status reports were not prepared prior to our review.

The benefits to be derived from monitoring and evaluation of recovery efforts are shown in the following example. A 1978 status survey of the dusky seaside sparrow (see photo on p. 78) showed that recovery efforts, including land acquisitions, had not increased the species' population. In fact, the sparrow's male population had declined, and no female sparrows could be found. As a result, the FWS regional office determined that additional land acquisitions were not warranted. The regional office planned to reprogram funds previously appropriated for additional sparrow land acquisitions and concentrate more on managing existing sparrow habitat instead.

Monitoring and evaluation of recovery plans and actions to determine their effects on endangered and threatened species are essential to effective program planning. In addition to identifying problems, information obtained would assist FWS officials in determining if changes in recovery plans are necessary. However, status surveys, an integral component of many monitoring and evaluation efforts, had been assigned a low priority by the program manager, which had severely limited needed fieldwork. (See pp. 31 to 32.)

LAND ACQUISITION FUNDS SHOULD  
BE OBLIGATED MORE EFFECTIVELY

The survival of some species has been threatened by the destruction or adverse modification of their habitats. To counter this, FWS had obligated about \$31 million to purchase about 65,000 acres for the protection of endangered and threatened species. (See pp. 111 to 113.) However, funds continued to be obligated to acquire additional land for species whose degree of threat had diminished and/or where viable alternatives to Federal acquisition existed.



PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE

A DUSKY SEASIDE SPARROW



FWS officials stated that factors other than degree of threat are considered in deciding which lands to acquire. These factors include (1) relative costs, (2) land availability, and (3) whether the species' range has been sufficiently defined to enable FWS to determine what lands must be acquired to preserve them. According to them, additional lands were acquired for species facing low degree of threat because (1) the additional acquisitions were needed to delist or reclassify the species, (2) the species' habitats were under immediate threat, or (3) they appeared more prudent because of the simple and low-cost recovery operations required. However, by continuing to acquire land when viable alternatives existed and/or when the degree of threat to the species had diminished, FWS had not only permitted the status of other species to become more precarious, but had also increased the number of Federal land acquisitions and corresponding funds expended.

Funds obligated to acquire land  
when viable alternatives exist

FWS's land acquisition policies, dated August 8, 1977, state that land will be acquired "only when other means of achieving Program goals and objectives are no longer available and/or effective." All alternatives for protecting the habitat must be exhausted before resorting to acquisition. Our review showed that funds had been obligated to acquire land when viable alternatives existed.

In a November 1, 1978, letter to the Secretary of the Interior (CED-79-6), we stated that the planned acquisition of Kealia Pond on the Island of Maui, Hawaii, for approximately \$6.4 million, was not consistent with FWS's land acquisition policies because a viable alternative existed. We, therefore, recommended that the pond not be purchased. While we agreed with FWS that the pond should remain a wildlife refuge, we did not agree that actual and planned development in the pond area constituted serious threats to the survival of the two endangered Hawaiian waterbirds, the coot and the stilt (see photos on pp. 80 and 81), necessitating Federal acquisition through condemnation.

Kealia Pond's location within a zoned conservation district represents a viable alternative to Federal acquisition. Actual and planned development in the pond area were compatible with a wildlife refuge and had actually served to



PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE  
HAWAIIAN COOTS

A HAWAIIAN STILT

PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE



enhance the pond as a waterbird habitat. Further, the inter-agency cooperation provisions (section 7) of the Endangered Species Act of 1973, as amended, provide an effective means for protecting the pond if the State or principal landowner proposed to convert it to a boat harbor or marina.

In a February 27, 1979, letter, Interior's Under Secretary informed us that the acquisition of the pond was fully consistent with FWS's land acquisition policies. He stated that continued State protection had been considered and rejected because the State was unwilling or unable to make the necessary commitment. However, we found that continued State protection of the pond had never been considered a viable alternative by FWS and that section 7 of the act, as amended, provides protection against a sudden change in the pond's status and would provide FWS ample opportunity to reinitiate condemnation proceedings if actual and planned development in the pond area constituted serious threats to the waterbirds' survival.

The Under Secretary's letter stated that FWS could only consider a State protection alternative if a legally binding commitment could be negotiated with the State guaranteeing (1) permanent protection of the pond, (2) adequate development of waterbird habitat and management for endangered species, and (3) the required annual operation and management. In a subsequent letter dated April 17, 1979, he informed us that, at our suggestion, FWS officials had been instructed to schedule a meeting with the concerned parties to negotiate a legally binding agreement to assure the preservation and management of Kealia Pond for endangered waterbirds.

A meeting between State and FWS officials was held on June 15, 1979, to discuss a framework for agreement on Kealia Pond. FWS officials stated that the pond must be secured "in perpetuity," and that only those alternatives guaranteeing the pond's permanent protection would be considered. Thus, alternatives were limited to State acquisition or a legally binding, open-ended agreement which State officials believed would not be acceptable to the principal landowner. FWS's position that the pond must be secured for the birds in perpetuity negated a State proposal to negotiate a legally binding commitment with the principal landowner that would include long-term protection of the pond (20-25 years), its enhancement as a waterbird habitat, and limited compatible development in the pond area.

Interior's response to our revised draft report (see p. 123) stated that GAO's judgment should be reserved pending the June 15, 1979, meeting, but that absent an acceptable commitment from the State, FWS officials consider the pond a high priority for Federal acquisition. We believe that a long-term agreement between the State and the principal landowner coupled with the protective provisions of section 7 represent a viable alternative to Federal acquisition and make untenable FWS's position that the pond must be secured in perpetuity. Continuing the Federal acquisition process while meeting with State officials raises serious concern over FWS's commitment to good-faith negotiations and the valid consideration of alternative protection strategies.

Need for additional land  
acquisitions not always apparent

Our review also showed that the need for additional land acquisitions for some endangered and threatened species was not always apparent. Previous recovery efforts, including land acquisitions, had substantially diminished the threats to the species' survival, and the acquisition of more land to stabilize the species' statuses or to effect their delisting or reclassification did not appear necessary.

For example, Kealia Pond was to be purchased to provide additional habitat for the coot and the stilt. However, both birds were in a low-priority category based on the recovery priority system because previous land acquisitions had lowered the degree of threat to their survival and their recovery potential was high. Data in a recovery plan, approved by the FWS Director, showed that the coot had already surpassed its population objective and that the stilt population was well on the way to recovery without the acquisition of Kealia Pond.

Another acquisition by FWS which did not appear needed was the planned purchase of additional Key deer habitat (see photo on p. 84) for about \$5.8 million. This species, which inhabits the Florida Keys, was also in a low-priority category because previous land acquisitions had lowered the degree of threat to its survival. About 4,400 acres had already been acquired as a Key deer refuge, and a portion of the 7,200-acre Great White Heron Refuge also had the potential for Key deer habitat.



PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE

**A KEY DEER FAWN**

According to FWS officials, the acquisition of another 1,000 acres was justified because the species' habitat continued to be lost at a rate they considered unacceptable and further loss would adversely affect the species. They stated that extensive development of privately owned lands for residential and commercial uses will ultimately result in the species being maintained in highly managed refuges. Therefore, they believed that additional habitat was needed to maintain the species.

Of the \$5.8 million for planned purchases, \$2.9 million is to acquire No Name Key, described as a satellite holding to the existing Key deer refuge and \$1.5 million is to acquire land to make the existing refuge more secure and manageable. The remaining \$1.4 million is to acquire Sugar Loaf Key, which was not identified in the abbreviated recovery plan used to justify the acquisitions.

While additional land not identified as needed in the recovery plan is being purchased for the Key deer, the status of other species, such as the blunt-nosed leopard lizard and San Joaquin kit fox, had become more precarious because FWS had failed to obtain essential habitat. Adherence to FWS's land acquisition policies and endangered species program criteria would limit land purchases to situations when no alternatives exist and acquisition has been justified on the basis of species priority and a recovery plan. This should result in most land acquisitions being for species facing high degree of threat to their existence and should reduce the number of Federal land acquisitions and corresponding funds expended.

FWS officials contended that, even though FWS policy states that the program criteria will be used in deciding whether or not lands or waters will be acquired for endangered and threatened species, the program criteria are intended to serve only as guides in the decisionmaking process and not absolute prerequisites to acquisition. If for future acquisitions the program criteria are to be used only as guides in the decisionmaking process, FWS's policy should be revised accordingly, and the Congress and the Office of Management and Budget informed that FWS has no firm policies or criteria to justify endangered species land and water acquisitions.

## STATE COOPERATION SHOULD BE INCREASED

The act, as amended, encourages States to establish and maintain adequate and active conservation programs for endangered and threatened species. Federal assistance is available on a two-thirds matching basis to States that meet certain criteria and have signed cooperative agreements with FWS. In fiscal year 1978, about \$5.5 million was allocated to States for approved grant-in-aid projects. However, as of October 1, 1978, only 22 States had entered into cooperative agreements. (See p. 117.)

In December 1977, the act was amended to eliminate the requirements that a State agency have authority and programs to conserve all resident endangered and threatened species before a cooperative agreement could be signed. Implementing regulations had not been promulgated as of May 31, 1979. Therefore, the effect this change will have could not be determined.

FWS officials informed us that they are confident that when the implementing regulations are published, almost every State will enter into a cooperative agreement. However, we found that States generally had not entered into cooperative agreements for other reasons, including some outside the scope of the Endangered Species Act. Problems relating to State and Federal funding, resistance to Federal intervention, and lack of interest in nongame wildlife had contributed to low State participation. Financial reasons given included

- limited staff and matching resources,
- using the limited resources available to match other Federal wildlife programs that were financially more desirable, and
- no guarantee of continued Federal funding.

Some FWS officials believed that further amendments to the act would increase State participation. They felt that increasing the Federal matching share to the same or greater percentage as sport/game programs (usually 75 percent) and/or guaranteeing continued Federal funding would encourage some States to increase their nongame conservation efforts. These amendments may have little effect, however, because many States did not have a guaranteed source of revenue to use as matching funds for nongame conservation efforts.



Most States received their fish and wildlife matching funds from the sale of hunting and fishing licenses and permits and were reluctant to use them on nongame species. For example, the State of Nevada's Department of Fish and Game had a fiscal year 1978 budget of over \$3.5 million, of which only about \$4,000 was appropriated for endangered species recovery efforts. A notable exception is the State of California, where funds from the sale of personalized license plates are used to support its endangered species program.

Further amendments to the endangered species act may also not change State resistance to Federal intervention and apathy toward nongame wildlife. FWS efforts had not been successful in stimulating State interest in increasing cooperation through the use of other Federal programs, such as the Federal Aid in Fish Restoration Act and the Federal Aid in Wildlife Restoration Act. Both of these programs, administered by FWS, provide Federal financial assistance on a three-quarters matching basis to States for fish, wildlife, and hunter safety projects, whether or not the States have active and adequate conservation programs. Funds for these programs are generated from excise taxes on sport fishing tackle, bows and arrows, and sporting arms and ammunition.

As of fiscal year 1978, over \$1 billion in wildlife and fish restoration aid had been apportioned to the States, without which many would have had to curtail game, wildlife, and fish activities. In fiscal year 1978 alone, about \$63 million in Wildlife Restoration Act aid was apportioned to the States. However, only about \$630,000 (1 percent) was requested by the States for endangered and other nongame species.

Because of limited Federal funds, State staff and resources are essential to preserve U.S. fish and wildlife from extinction. Without active State participation, the overall goals and objectives of the Endangered Species Act may never be achieved.

ENFORCEMENT AND PROSECUTION UNDER  
THE ACT COULD BE STRENGTHENED

Strong enforcement and prosecution under the act would deter violators and hasten the recovery of endangered and threatened species. While there had been some notable prosecutions and convictions under the act, improvements

could further deter violators and increase protection for listed species. This could be accomplished by (1) implementing an automatic data processing system to assist in making management decisions, including deploying limited enforcement personnel effectively, (2) increasing prosecution and seeking maximum penalties under the act, and (3) clarifying enforcement authority on Indian tribal land.

No automatic data processing system  
available to retrieve stored information

FWS did not have an automatic data processing system to store investigative files, prepare reports, maintain an agent's skills inventory, or interface with the Federal Bureau of Investigation and the Department of the Treasury. Specific information on the above required a manual search of available files. For example, of the 1,605 endangered species actions taken during the first 9 months of fiscal year 1978, FWS officials could not identify the number of actions involving import/export violations or those involving the killing or taking of a species.

As of October 1, 1978, there were about 210 FWS special agents. Some large geographical areas of the country received little or no FWS enforcement coverage. For example, there were only 13 FWS special agents stationed in California and 2 in Nevada. These agents were responsible for protecting 50 listed species and their habitats while enforcing the provisions of 13 different wildlife acts.

As a result of limited personnel, FWS was relying on other Federal and State agencies to help enforce the act. However, without readily accessible information, FWS did not know if its special agents were stationed where needed or where additional Federal and State assistance was necessary.

In May 1979, FWS officials admitted that they did not know if FWS special agents were stationed where needed. They stated that the Division of Law Enforcement was developing an automatic data processing system for retrieval of stored information. The system, scheduled to be implemented in fiscal year 1980, should assist FWS in making management decisions, including deploying its limited enforcement personnel effectively.

### Limited prosecution under the act

The act, as amended, provides for both civil and criminal penalties with possible fines of up to \$20,000 or 1 year imprisonment for anyone who knowingly commits a violation. Although some State and Federal officials considered enforcement a major protective provision of the act, most criminal cases were not prosecuted, and lesser penalties were often sought or assessed. Of the 144 criminal actions initiated during the first 9 months of fiscal year 1978, 102 cases, or 71 percent, were declined for prosecution by the Department of Justice. U.S. attorneys were often reluctant to prosecute cases under the Endangered Species Act because they did not consider them a high priority and believed it difficult to prove knowledge of the law.

Cases involving endangered species that were brought to court were often prosecuted under other laws which generally provided for lesser penalties. For example, in a case involving the killing of a Columbian white-tailed deer (see photo on p. 90) within a fenced national wildlife refuge, the violator was charged under the Endangered Species Act but prosecuted and fined \$200 under the Refuge Act. According to the Columbian white-tailed deer recovery plan, such violations were not unusual at this refuge. Similarly, in a case involving the killing of alligators in another national wildlife refuge, the violators were originally charged under the Endangered Species Act but prosecuted under the Refuge Act. The charges were reduced through plea bargaining, and each violator received a \$75 fine and 6 months' probation.

Of the 42 criminal cases involving endangered species prosecuted during the first 9 months of fiscal year 1978, 7 resulted in acquittals or dismissals and the remaining 35 totaled less than \$16,000 in fines and 2 years in jail terms. Failure to prosecute most criminal cases and to seek or assess maximum penalties as provided in the act or commensurate with the violation have hampered enforcement and weakened the act's protective provisions. Increased cooperation in this area between FWS and the Department of Justice would be an important first step in deterring future violations.

### Enforcement on tribal lands unresolved

FWS enforcement personnel had been unable to deter endangered species violations on Indian tribal lands



PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE

A COLUMBIAN WHITE-TAILED DEER

because their authority had not been clearly defined. The taking of endangered species on reservations for consumption, ceremonial, and commercial purposes was well known. For example, the Pyramid Lake Paiute Indian Tribe continued to harvest the endangered cui-ui fish for consumption, and Indians in the State of Washington continued to kill bald eagles (see photo on p. 92) for their ceremonial feathers.

FWS enforcement personnel informed us that they had been instructed not to enforce the act's protective provisions on reservations until Interior's Office of the Solicitor rendered an opinion on their applicability on tribal lands. FWS officials informed us in April 1979 that the Solicitor will not render such an opinion. Instead, the Solicitor will decide whether to pursue prosecutions for alleged violations on Indian reservations on a case-by-case basis, with due consideration given to Indian first amendment and treaty rights. With respect to the examples above, they stated that prosecution had been authorized under the Bald Eagle Protection Act in Washington for the illegal taking of the species on an Indian reservation but that no action had been taken concerning the harvesting of the cui-ui fish.

The applicability of the Endangered Species Act on other than Indian reservations had been clearly defined. While the decision to pursue prosecution should be made on a case-by-case basis, the applicability of the act and the authority of FWS enforcement personnel on Indian lands should also be clearly defined in a Solicitor's opinion.

#### CONCLUSIONS

While FWS had limited success in improving the status of species requiring simple actions, especially single land acquisitions, progress had been slow in effecting the recovery or stabilization of species requiring more involved plans. Improvements are needed in FWS's recovery program, land acquisitions, State participation, and Federal enforcement and prosecution.

#### APPRAISAL OF AGENCY COMMENTS

FWS officials stated that while they agreed that species recovery efforts could be improved, recovery efforts are influenced by limits on total funds elevated to the endangered species program and to have done better with recovery efforts in the past would have meant



PHOTOGRAPH COURTESY OF THE FISH AND WILDLIFE SERVICE  
A BALD EAGLE

allocating fewer resources to listing efforts. We do not agree. Many of the management deficiencies identified in the recovery process do not require additional funds to correct and entail only adhering to policies, procedures, and criteria already developed or under consideration by FWS.

RECOMMENDATIONS TO THE  
SECRETARY OF THE INTERIOR

The Secretary should direct the Solicitor to render an opinion immediately to resolve FWS enforcement personnel's jurisdictional authority on Indian tribal land. Further, the Secretary should direct the FWS Director to:

- Approve and implement the draft recovery priority system to be used as a guide for recovery planning and resource allocations.
- Reassess the process of developing, approving, implementing, and evaluating recovery plans and take the actions necessary to make the process more timely and the plans more meaningful. This could include (1) expanding the use of single organizations, individuals, and in-house expertise to develop recovery plans, (2) including in recovery plans alternative actions which are readily attainable or contingency plans, and (3) increased monitoring and evaluation of recovery plans and actions to determine their effects on listed species.
- See that land purchases are consistent with FWS's policies and program criteria.
- Reassess what actions can be taken to increase State participation in the endangered species program including the use of other Federal programs, if the December 1977 amendments to the act do not achieve their intended results.
- Strengthen enforcement and prosecution under the act by (1) implementing an automatic data processing system to assist in making management decisions, including deploying limited enforcement personnel effectively and (2) exploring with the Department of Justice means to increase the number of criminal cases prosecuted and to seek penalties commensurate with the violations.

## RECOMMENDATION TO THE CONGRESS

FWS has taken the position that, even though FWS policy states that established program criteria will be used in deciding whether or not lands or waters will be acquired for endangered and threatened species, the program criteria are intended to serve only as guides in the decisionmaking process and are not absolute prerequisites to acquisition. As a result, FWS was obligating funds to acquire additional land for species whose degree of threat had diminished and/or when viable alternatives to Federal acquisition existed. Therefore, the Congress should no longer fund endangered species land acquisitions inconsistent with FWS policies and program criteria. Examples of funded land acquisitions not consistent with FWS policies and/or program criteria are Kealia Pond on the Island of Maui, Hawaii, being purchased for approximately \$6.4 million even though viable alternatives to Federal acquisition exist, and Sugar Loaf Key in Florida, being acquired for approximately \$1.4 million even though FWS officials cannot justify that its acquisition is needed to recover the Key deer.



ENDANGERED SPECIES PROGRAM PROCESSES

Implementation of the 1973 act, as amended, can be divided into three program processes--listing, consultation, and recovery.

The listing process

The act, as amended, requires the Secretary of the Interior to publish in the Federal Register a list of all species determined to be endangered or threatened. All species listed after November 10, 1978, must include a specification of their critical habitat. The Administrative Procedure Act and the Federal Register Act establish that the list is then applicable to all Federal programs and is legally in effect.

FWS had not formalized by implementing regulations the process for determining that a species is endangered or threatened and its listing in the Federal Register. However, the process had been standardized through internal FWS policies and procedures and must comply with Interior's policies and procedures for adoption of rules (43 CFR part 14). Generally, these steps should have been followed before a species was listed as endangered or threatened in the Federal Register.

1. Nominating candidate species. The process was initiated by receipt of a petition from an interested person, requesting the listing of a species or a review to determine its status, or through an internal FWS decision. Petitioned and FWS-initiated species should have been reviewed by an ad hoc panel of FWS biologists to determine which should be considered for listing (candidate species) and should be ranked based on a priority system.

2. Developing and processing a proposed regulation. Depending on the adequacy of the supporting information and on the regulatory significance assigned the listing, a proposed regulation or notice of intent to review the status of a candidate species was developed in FWS and processed through the agency. Although FWS had been delegated authority to issue regulations, controversial regulations required personal review by the Secretary of the Interior.

3. Publishing in the Federal Register. The proposed regulation or notice of review was published in the Federal Register for public comment. Public hearings, although optional under the act, as amended, were required by FWS procedures.

4. Developing and processing the final regulation. Based on the public comments received and information obtained by FWS, the proposed regulation or the notice of review was revised; processed through the agency; reviewed by the Secretary, if required; and published in the Federal Register as a final regulation or proposed regulation, respectively.

The above steps also applied when FWS was petitioned or otherwise initiated an action to delist or reclassify a species listed as endangered or threatened.

#### The consultation process

Final interagency cooperation regulations to implement the consultation provisions of the 1973 act were published in the Federal Register on January 4, 1978. The Endangered Species Act Amendments of 1978, while requiring limited revisions to these regulations, primarily established a means to resolve conflicts identified during consultation. The interagency cooperation regulations culminated in a biological opinion and required the following.

1. Initiating consultation. When a Federal agency identified an action that may affect listed species or their habitats, it would convey a written request for consultation to FWS with available information. FWS officials could also initiate a consultation if they identified a Federal action that had not received prior consultation and that could affect listed species or their habitats.

2. Conducting a threshold examination. Upon receipt of a written request for consultation, FWS officials conducted a threshold examination of the action, which included a review of available information and could involve an onsite inspection of the area.

3. Rendering a biological opinion. Within 60 days after consultation was initiated, FWS officials should have notified the appropriate Federal agency that, based on the threshold examination, the action (1) would promote the

conservation of listed species, (2) was not likely to jeopardize the continued existence of a listed species or its critical habitat, or (3) was likely to jeopardize a species or result in the destruction or adverse modification of its critical habitat. FWS officials could also notify the Federal agency that insufficient information existed to render a biological opinion.

4. Further consultation. Further consultation was not necessary if a biological opinion was rendered. It was the responsibility of the other Federal agency to determine how to proceed with the action in light of its section 7 obligations. If FWS officials determined that insufficient information existed to render an opinion, the other Federal agency was responsible for obtaining additional data and for conducting, as appropriate, biological surveys or studies to determine how the action could affect listed species or their critical habitats.

The regulations also provided that informal consultations could be initiated at the field level between FWS and other Federal agencies. Informal consultations were supplemental to, not substitutes for, formal consultations.

The 1978 amendments revised this process by extending the time for rendering biological opinions to 90 days after consultation has been initiated or within a mutually agreed on time period. The amendments then set forth the procedures and corresponding time frames for a Federal agency, the Governor of the State in which an action will occur, or a permit or license applicant to apply for an exemption.

#### The recovery process

Once a species was listed as endangered or threatened, FWS initiated efforts to return the species to the point where it was no longer endangered or threatened or to at least stabilize its status. Written plans, outlining a program for full restoration or maintenance of a species, was the primary method used by FWS to develop and implement recovery and other conservation efforts.

A recovery plan was a guide that justified, delineated, and scheduled those actions required for securing or restoring an endangered or threatened species as a viable, self-sustaining member of its ecosystem. The length and complexity of a recovery plan could vary in accordance with the complexity of the problems facing the species; its

geographical distribution; and number of agencies, organizations, or individuals involved. Recovery plans should have been continually updated to incorporate new facts, techniques, objectives, and accomplishments.

An abbreviated plan could be all that was necessary for a species requiring simple actions such as a single land acquisition. On the other hand, a more involved plan would be necessary for a widespread species or group of species whose status or habitat had deteriorated badly and whose recovery would entail numerous actions by more than one organization. Abbreviated plans could be prepared by a team, FWS employee, or other knowledgeable individual, while more involved plans were normally prepared by a team. A team generally consisted of three to seven individuals representing different agencies and working on an as-available basis. Team members were appointed by the Director of FWS.

SCHEDULE OF SPECIES LISTED AS OFOCTOBER 1, 1978

<u>Taxonomic group</u>	<u>U.S. species</u>			<u>Foreign species</u>		
	<u>Endangered</u>	<u>Threatened</u>	<u>Total</u>	<u>Endangered</u>	<u>Threatened</u>	<u>Total</u>
Plants	20	2	22	0	0	0
Molluscs & one crustacean	26	5	31	3	0	3
Insects	6	2	8	0	0	0
Fish	29	12	41	10	0	10
Amphibians & reptiles	16	12	28	52	0	52
Birds	67	3	70	144	0	144
Mammals	<u>33</u>	<u>3</u>	<u>36</u>	<u>227</u>	<u>18</u>	<u>245</u>
	<u>197</u>	<u>39</u>	<u>236</u>	<u>436</u>	<u>18</u>	<u>454</u>

SCHEDULE OF LISTED, PROPOSED, AND CANDIDATE SPECIESBY DEGREE OF THREAT AS OF AUGUST 1978

<u>Taxonomic group</u>	<u>U.S. listed species</u>				<u>Proposed and candidate species</u>			
	<u>High</u>	<u>Medium</u>	<u>Low</u>	<u>Total</u>	<u>High</u>	<u>Medium</u>	<u>Low</u>	<u>Total</u>
Plants	9	7	1	17	138	74	15	a/227
Molluscs & one crustacean	20	11	0	31	36	21	1	58
Insects	3	4	1	8	21	12	3	36
Fish	8	23	8	39	39	2	0	41
Amphibians & reptiles	12	13	3	28	7	6	0	13
Birds	26	30	15	71	1	2	0	3
Mammals	13	14	4	31	12	15	6	33
	<u>91</u>	<u>102</u>	<u>32</u>	<u>225</u>	<u>254</u>	<u>132</u>	<u>25</u>	<u>a/411</u>

a/About 200 additional plant species which may be listed were not ranked due to limited available information.

FWS's LISTING PRIORITY MATRIX

<u>Priority</u>	<u>Degree of threat</u>	<u>Availability of information</u>	<u>Taxonomy</u>	Number of proposed and candidate species (note a)
1	High	No field	Species	150
2	High	No field	Subspecies	38
3	High	Field work	Species	58
4	High	Field work	Subspecies	8
5	Medium	No field	Species	51
6	Medium	No field	Subspecies	20
7	Medium	Field work	Species	49
8	Medium	Field work	Subspecies	12
9	Low	No field	Species	8
10	Low	No field	Subspecies	3
11	Low	Field work	Species	12
12	Low	Field work	Subspecies	<u>2</u>

b/411FWS's RECOVERY PRIORITY MATRIX

<u>Priority</u>	<u>Degree of threat</u>	<u>Recovery potential</u>	<u>Taxonomy</u>	Number of listed species (note a)
1	High	High	Species	22
2	High	High	Subspecies	12
3	High	Low	Species	36
4	High	Low	Subspecies	21
5	Medium	High	Species	34
6	Medium	High	Subspecies	22
7	Medium	Low	Species	38
8	Medium	Low	Subspecies	8
9	Low	High	Species	8
10	Low	High	Subspecies	14
11	Low	Low	Species	2
12	Low	Low	Subspecies	<u>8</u>

225

a/As of August 1978.

b/About 200 plant species which may be listed were not ranked due to limited available information.

SCHEDULE OF ENDANGERED SPECIES PROGRAMPERSONNEL AS OF OCTOBER 1, 1978

<u>Function</u>	<u>Location</u>				<u>Total</u>
	<u>Regions</u>	<u>Alaska</u>	<u>Patuxent facility</u>	<u>Head-quarters</u>	
Listing	7	0	0	11	18
Consultations	10	0	0	3	13
Refuges	37	5	0	0	42
Research	0	0	40	0	40
Law Enforcement	82	1	0	14	97
Program management	51	1	0	23	75
Permits	0	0	0	31	31
State cooperation	0	0	0	2	2
Recovery	0	0	0	1	1
Scientific authority	<u>0</u>	<u>0</u>	<u>0</u>	<u>4</u>	<u>4</u>
	<u>187</u>	<u>7</u>	<u>40</u>	<u>89</u>	<u>323</u>



SPECIES POPULATION LISTINGSWITHIN THE UNITED STATES

(excluding captive populations)

<u>Species</u>	<u>Date listed</u>	<u>Where listed</u>		<u>Existing range not listed</u>
		<u>Threatened</u>	<u>Endangered</u>	
Bald eagle, Southern (note a)	3/11/67	N/A	Entire	N/A
*Bald eagle (note b)	2/14/78	Mich. Minn. Oreg. Wash. Wis.	Remaining 43 con- terminous States	Alaska, Canada
Wolf, Eastern timber (note c)	3/11/67	N/A	Entire U.S.	Canada
Wolf, Northern Rocky Mountain (note c)	6/ 4/73	N/A	Entire U.S.	Canada
Wolf, Mexican (note c)	4/28/76	N/A	Entire U.S., Mexico	N/A
Wolf, gray (note c)	6/14/76	N/A	Entire U.S., Mexico	N/A
*Wolf, gray (note d)	3/ 9/78	Minn.	Remaining 47 con- terminous States, Mexico	Alaska, Canada
*Grizzly bear (note e)	7/28/75	48 con- terminous States	N/A	Alaska, Canada
*American crocodile	9/25/75	N/A	Fla.	Central and South America
American alligator (note f)	9/26/75	3 La. parishes, outside U.S. (simi- larity of appearance)	Remaining entire U.S.	N/A

## APPENDIX VI

## APPENDIX VI

<u>Species</u>	<u>Date listed</u>	<u>Where listed</u>		<u>Existing range not listed</u>
		<u>Threatened</u>	<u>Endangered</u>	
*American alligator (note f)	1/10/77	Fla. & certain portions of La., S.C., Tex. (similarity of appearance same as 9/26/75)	Remaining entire U.S.	N/A
*Bahama swallowtail butterfly	4/28/76	Fla.	N/A	Bahamas
*Pine Barrens tree frog (note g)	11/11/77	N/A	Fla.	N.J., N.C., S.C.
*Green sea turtle	7/28/78	Wherever found except where listed as endangered	Breeding colony populations in Fla. and Pacific Coast of Mexico	N/A
*Olive ridley sea turtle	7/28/78	Wherever found except where listed as endangered	Breeding colony population on Pacific Coast of Mexico	N/A

\* Most current listing

- a/This was an arbitrary subspecies designation. The bald eagle was considered in need of listing in certain portions of its existing range but not in others. The prior acts did not specifically permit population listings. The Fish and Wildlife Service later determined that adequate biological support for recognition of subspecies of bald eagles did not exist.
- b/FWS stated that this was an administrative listing to correct the prior listing and its ensuing conservation difficulties.
- c/This was a subspecies designation.
- d/Since FWS had listed virtually all the subspecies of the gray wolf, it simplified the list by showing the full species. Limited killing is allowed in Minnesota.
- e/The grizzly bear is found only in Washington, Montana, Wyoming, and Idaho in the 48 conterminous States. Limited killing is allowed in Montana.
- f/Similarity of appearance means the species is not endangered or threatened in that area but, because without eyewitnesses proving where a particular animal or its parts came from would be impossible, the species must be listed as threatened there also.
- g/A notice of review for the species in the three States where it is not listed was published on 8/2/77. Current survey work is finding that the species may have been improperly listed as endangered in Florida since it is more abundant than originally thought.

AMENDMENTS TO THE ENDANGERED SPECIES ACT OF 1973,  
AS AMENDED, TO INCORPORATE GAO RECOMMENDATIONS

Section 3 (16 U.S.C. 1532) should be amended--  
(1) either by striking out paragraph (16), and inserting in lieu thereof the following:

(16) The term "species" includes any subspecies of fish, wildlife, or plants.

or by adding at the end of paragraph (16) the following new sentence:

Distinct population listings must constitute significant portions of the species' range in terms of total numbers, biological importance, or the need to maintain the species within the United States.

(2) by inserting the following new paragraphs:

The term "listed species" means any species which has been determined by the Secretary of the Interior or the Secretary of Commerce to be an endangered species or a threatened species and such determination has been published in the Federal Register as a final regulation.

The term "proposed species" means any species for which the Secretary of the Interior or the Secretary of Commerce has published a regulation in the Federal Register proposing that the species be added to the list of species determined to be endangered or to the list of species determined to be threatened.

The term "candidate species" means any species for which the Secretary of the Interior or the Secretary of Commerce has found that substantial evidence has been presented which in his judgment warrants a review of the species for the purpose of adding it to either the list of endangered species or the list of threatened species and such a finding has been published in the Federal Register.

Section 7 (16 U.S.C. 1536) should be amended--  
(1) by inserting and striking out the following:

## INTERAGENCY COOPERATION

Section 7.(a) CONSULTATION. - The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act. Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an 'agency action') does not jeopardize the continued existence of any listed, proposed, or candidate [endangered species or threatened] species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical, unless such agency has been granted an exemption for such action by the Committee pursuant to subsection (h) of this section.

(b) SECRETARY'S OPINION. - Consultation under subsection (a) with respect to any agency action shall be concluded within 90 days after the date on which initiated or within such other period of time as is mutually agreeable to the Federal agency and the Secretary. Promptly after the conclusion of consultation, the Secretary shall provide to the Federal agency concerned a written statement setting forth the Secretary's opinion, and a summary of the information on which the opinion is based, detailing how the agency action affects the species or its critical habitat. The Secretary shall suggest those reasonable and prudent alternatives which he believes would avoid jeopardizing the continued existence of any listed, proposed, or candidate [endangered or threatened] species or adversely modifying the critical habitat of such species, and which can be taken by the Federal agency or the permit or license applicant in implementing the agency action.

(c) BIOLOGICAL ASSESSMENT. - To facilitate compliance with the requirements of subsection (a), each Federal agency shall, with respect to any agency action of such agency for which no contract for construction has been entered into and for which no construction has begun on the date of enactment of the Endangered Species Act Amendments of 1978, request of the Secretary information whether any

listed, proposed, or candidate species [which is listed or proposed to be listed] may be present in the area of such proposed action. If the Secretary advises, based on the best scientific and commercial data available, that such species may be present, such agency shall conduct a biological assessment for the purpose of identifying any listed, proposed, or candidate [endangered species or threatened] species which is likely to be affected by such action. Such assessment shall be completed within 180 days after the date on which initiated (or within such other period as is mutually agreed to by the Secretary and such agency) and, before any contract for construction is entered into and before construction is begun with respect to such action. Such assessment may be undertaken as part of a Federal agency's compliance with the requirements of section 102 of the National Environmental Policy Act of 1969 (42 U.S.C. 4332).

(d) LIMITATION ON COMMITMENT OF RESOURCES. - After initiation of consultation required under subsection (a), neither the Federal agency nor [and] the permit or license applicant shall [not] make any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would avoid jeopardizing the continued existence of any listed, proposed, or candidate [endangered or threatened] species or adversely modifying or destroying the critical habitat of any such species.

(g) APPLICATION FOR EXEMPTION AND CONSIDERATION BY REVIEW BOARD. - (1) A Federal agency, the Governor of the State in which an agency action will occur, if any, or a permit or license applicant may apply to the Secretary for an exemption for an agency action of such agency if, after consultation under subsection (a), the Secretary's opinion under subsection (b) indicates that the agency action may jeopardize the continued existence of any listed, proposed, or candidate [endangered or threatened] species or destroy or adversely modify the critical habitat of such species. An application for an exemption shall be considered initially by a review board in the manner provided in this subsection, and shall be considered by the Endangered Species Committee for a final determination under subsection (h) after a report is made by the review board. The applicant for an exemption shall be referred to as the 'exemption applicant' in this section.

(5) It shall be the duty of a review board appointed under paragraph (3) to make a full review of the consultation carried out under subsection (a), and within 60 days after its appointment or within such longer time as is mutually agreed upon between the exemption applicant and the Secretary, to make a determination, by a majority vote, (1) whether an irresolvable conflict exists and (2) whether such exemption applicant has -

(A) carried out its consultation responsibilities as described in subsection (a) in good faith and made a reasonable and responsible effort to develop and fairly consider modifications or reasonable and prudent alternatives to the proposed agency action which will avoid jeopardizing the continued existence of listed, proposed, or candidate [endangered or threatened] species or result in the adverse modification or destruction of a critical habitat;

(B) conducted any biological assessment required of it by subsection (c); and

(C) refrained from making any irreversible or irretrievable commitment of resources prohibited by subsection (d).

Any determination by the review board that an irresolvable conflict does not exist or that the exemption applicant has not met the requirements of subparagraph (A), (B), or (C) shall be considered final agency action for purposes of chapter 7 of title 5 of the United States Code.

(h) EXEMPTION. - (1) The Committee shall make a final determination whether or not to grant an exemption within 90 days of receiving the report of the review board under section (g)(7). The Committee shall grant an exemption from the requirements of subsection (a) for an agency action if, by a vote of not less than five of its members voting in person -

(A) it determines on the record, based on the report of the review board and on such other testimony or evidence as it may receive, that -

(i) there are no reasonable and prudent alternatives to the agency action;

(ii) the benefits of such action clearly outweigh the benefits of alternative courses of action consistent with conserving the species or its critical habitat, and such action is in the public interest; and

(iii) the action is of regional or national significance; and

(B) it establishes such reasonable mitigation and enhancement measures, including, but not limited to, live propagation, transplantation, and habitat acquisition and improvement, as are necessary and appropriate to minimize the adverse effects of the agency action upon the listed, proposed, or candidate [endangered species, threatened] species, or critical habitat concerned.

Any financial determination by the Committee under this subsection shall be considered final agency action for purposes of chapter 7 of title 5 of the United States Code.

(2)(A) Except as provided in subparagraph (B), an exemption for an agency action granted under subsection (h) shall constitute a permanent exemption with respect to all listed, proposed, or candidate [endangered or threatened] species for the purposes of completing such agency action: Provided, That a biological assessment has been conducted as required by [under] subsection (c) or voluntarily conducted in accordance with subsection (c).

(B) An exemption shall not be permanent under subparagraph (A) if the Secretary finds, based on the best scientific and commercial data available, that such exemption would result in the extinction of the species. If the Secretary so finds, the Committee shall determine within 30 days after such finding whether to grant an exemption for the agency action notwithstanding the Secretary's finding.



SUMMARY OF LAND AND WATER  
CONSERVATION FUND OBLIGATIONS FOR  
ENDANGERED SPECIES LAND ACQUISITIONS  
THROUGH FISCAL YEAR 1978

<u>Endangered species</u> <u>(fiscal year)</u>	<u>Date</u> <u>listed</u>	<u>1978</u> <u>recovery</u> <u>priority</u>	<u>FWS</u> <u>region</u>	<u>Acres</u>	<u>Cost</u>
<u>1968</u>					
Key deer	3/11/67	10	4	<u>2,283</u>	<u>\$1,137,867</u>
<u>1969</u>					
Key deer	3/11/67	10	4	451	539,354
Bald eagle	3/11/67	12	5	252	365,415
Patuxent (research facility)	-	-	-	<u>106</u>	<u>295,116</u>
				<u>809</u>	<u>\$1,199,885</u>
<u>1970</u>					
Key deer	3/11/67	10	4	-	5,550
Bald eagle	3/11/67	12	5	145	362,500
American alligator	9/26/75	5	4	14,575	580,200
Patuxent (research facility)	-	-	-	<u>168</u>	<u>453,000</u>
				<u>14,888</u>	<u>\$1,401,250</u>
<u>1971</u>					
Key deer	3/11/67	10	4	503	113,798
American alligator	9/26/75	5	4	1,428	54,000
Bald eagle	3/11/67	12	5	553	1,482,500
Columbian white- tailed deer	3/11/67	10	1	924	600,000
Patuxent (research facility)	-	-	-	<u>188</u>	<u>187,960</u>
				<u>3,596</u>	<u>\$2,438,258</u>
<u>1972</u>					
Dusky seaside sparrow	3/11/67	4	4	2,058	786,849
American alligator	9/26/75	5	4	5,107	208,565
Hawaiian waterbirds	3/11/67-10/13/70	6/10	1	240	312,000
Delmarva Peninsula fox squirrel	3/11/67	10	5	412	143,020
Columbian white- tailed deer	3/11/67	10	1	2,727	1,457,600
Attwater's greater prairie chicken	3/11/67	6	2	690	248,357
Bald eagle	3/11/67	12	5	-	92,500
				<u>11,234</u>	<u>\$3,248,891</u>

## APPENDIX VIII

## APPENDIX VIII

Endangered species ( <u>fiscal year</u> )	<u>Date listed</u>	1978 recovery <u>priority</u>	<u>FWS region</u>	<u>Acres</u>	<u>Cost</u>
<u>1973</u>					
Dusky seaside sparrow	3/11/67	4	4	681	\$ 444,024
Hawaiian waterbirds	3/11/67-10/13/70	6/10	1	855	1,317,121
Attwater's greater prairie chicken	3/11/67	6	2	556	222,314
Bald eagle	3/11/67	12	5	-	75,619
Columbian white- tailed deer	3/11/67	10	1	<u>632</u>	<u>614,000</u>
				<u>2,724</u>	<u>\$2,673,078</u>
<u>1974</u>					
California condor	3/11/67	3	1	1,871	510,000
Dusky seaside sparrow	3/11/67	4	4	10	10,500
American alligator	9/26/75	5	4	486	43,300
Columbian white- tailed deer	3/11/67	10	1	16	2,900
Attwater's greater prairie chicken	3/11/67	6	2	<u>448</u>	<u>254,493</u>
				<u>2,831</u>	<u>\$821,193</u>
<u>1975</u>					
American alligator	9/26/75	5	4	1,693	49,000
Attwater's greater prairie chicken	3/11/67	6	2	417	333,960
Delmarva Peninsula fox squirrel	3/11/67	10	5	<u>176</u>	<u>45,017</u>
				<u>2,287</u>	<u>\$427,977</u>
<u>1976 &amp; TQ</u>					
Santa Cruz long- toed salamander	3/11/67	6	1	112	471,000
Hawaiian waterbirds	3/11/67-10/13/70	6/10	1	78	1,116,022
Attwater's greater prairie chicken	3/11/67	6	2	840	285,000
American alligator	9/26/75	5	4	-	12,000
Dusky seaside sparrow	3/11/67	4	4	1,396	542,600
Mississippi sand- hill crane	6/ 4/73	4	4	2,136	2,632,300
Key deer	3/11/67	10	4	<u>117</u>	<u>111,314</u>
				<u>4,669</u>	<u>\$5,170,236</u>

## APPENDIX VIII

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<u>Endangered species (fiscal year)</u>	<u>Date listed</u>	<u>1978 recovery priority</u>	<u>FWS region</u>	<u>Acres</u>	<u>Cost</u>
<u>1977</u>					
Hawaiian waterbirds	3/11/67-10/13/70	6/10	1	145	\$ 67,305
Santa Cruz long- toed salamander	3/11/67	6	1	7	51,000
Columbian white- tailed deer	3/11/67	10	1	-	976,937
Attwater's greater prairie chicken	3/11/67	6	2	2,587	215,000
American alligator	9/26/75	5	4	-	20,781
Mississippi sand- hill crane	6/ 4/73	4	4	6,399	4,535,300
Dusky seaside sparrow	3/11/67	4	4	1,571	576,450
Key deer	3/11/67	10	4	<u>2,940</u>	<u>1,300,000</u>
				<u>13,649</u>	<u>\$7,742,773</u>
<u>1978</u>					
Hawaiian waterbirds	3/11/67-10/13/70	6/10	1	1	9,950
Santa Cruz long- toed salamander	3/11/67	6	1	4	34,000
Attwater's greater prairie chicken	3/11/67	6	2	2,392	2,217,350
Mississippi sand- hill crane	6/ 4/73	4	4	120	183,500
Dusky seaside sparrow	3/11/67	4	4	520	308,350
St. Croix ground lizard	6/ 3/77	1	4	14	250,000
Gray and Indiana bats	4/28/76-3/11/67	7	4	419	500,000
Delmarva Peninsula fox squirrel	3/11/67	10	5	<u>2,463</u>	<u>1,096,214</u>
				<u>5,933</u>	<u>\$4,599,364</u>
Total, fiscal years 1968-78				<u>64,904</u>	<u>\$30,860,772</u>

RECOVERY TEAMS AND PLANS STATUS AS OF OCTOBER 1, 1978

Species by FWS region	1978 recovery priority	Status of recovery teams		Recovery plan status		
		Nominations received	Approval by FWS	Review draft received by FWS (note a)	Draft submitted for approval	Plan approved by director
<u>Region I:</u>						
California condor	3	1/ 6/75	4/16/75	-	2/5/75	4/9/75
Hawaiian crow	3	1/ 8/75	4/21/75	-	-	-
Hawaiian forest birds (Hawaii akepa, akiapolau, ou, Hawaii creeper)	7-12	1/ 8/75	4/21/75	5/12/78	-	-
Hawaiian waterbirds (Hawaiian stilt, Hawaiian gallinule, Hawaiian coot)	6-10	1/ 8/75	4/16/75	-	4/6/78	6/28/78
Light-footed clapper rail	6	1/ 6/75	4/16/75	1/ /77	-	-
Columbian white-tailed deer	10	1/ 6/75	4/16/75	(8/26/76)	9/13/76	10/21/76
Santa Cruz long-toed salamander	6	1/ 6/75	4/16/75	8/26/76	8/23/77	9/28/77
Laysan duck	5	1/ 8/75	4/16/75	(12/ 1/75)	-	-
Palila	7	1/ 8/75	4/16/75	5/23/77	12/ 2/77	1/23/78
Cui-ui	1	1/ 6/75	4/16/75	9/ 6/77	1/ 4/78	1/23/78
California least tern	10	1/ 8/75	4/16/75	12/21/77	-	-
San Joaquin kit fox	5	1/ 6/75	4/16/75	-	-	-
Warm Springs pupfish	6	1/ 6/75	4/16/75	-	9/23/76	11/10/76
Hawaiian goose	5	1/ 8/75	4/16/75	-	-	-
Kauai forest birds (Kauai akialoa, Kauai nukupuu, Kauai oo, large Kauai thrush, small Kauai thrush)	3-4	1/ 8/75	4/16/75	-	-	-
Molokai-Maui forest birds (Maui akepa, Molokai creeper, Maui nukupuu, Maui parrotbill, Molo- kai thrush, poo-uli)	3-4	1/ 8/75	4/16/75	-	-	-
Unarmored three-spine stickleback	6	12/ 3/75	1/26/76	9/ 6/77	12/ 7/77	12/28/77
Blunt-nosed leopard lizard	1	12/ 3/75	1/26/76	(3/23/78)	-	-
American peregrine falcon	4	-	2/19/76	-	-	-
Devil's Hole pupfish	5	3/25/76	5/28/76	(3/23/78)	-	-
Pahrump killifish	1	3/25/76	5/25/76	(3/23/78)	-	-
Moapa dace	1	-	-	(3/23/78)	-	-

## APPENDIX IX

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Species by FWS region	1978 recovery priority	Status of recovery teams		Recovery plan status		
		Nominations received	Approval by FWS	Review draft received by FWS (note a)	Draft submitted for approval	Plan approved by director
<u>Region II:</u>						
Whooping crane	3	6/27/75	11/26/75	(3/10/78)	-	-
Houston toad	1	2/ 6/78	5/24/78	(11/21/73)	-	-
Southwestern bald eagle	12	3/11/77	3/17/77	(8/22/78)	-	-
Woundfin	1	5/19/75	8/14/75	(11/18/77)	-	-
Attwater's greater prairie chicken	6	5/ 2/75	-	-	-	-
Sonoran pronghorn	6	4/17/75	6/10/75	-	-	-
Gila topminnow	9	-	-	(9/29/78)	-	-
Arizona trout	5	3/17/75	4/28/75	8/ 8/77	-	-
Gila trout	5	4/ 7/75	4/28/75	(12/28/77)	-	-
Yuma clapper rail	10	3/10/75	4/16/75	2/24/77	-	-
Masked bobwhite	6	4/11/75	4/21/75	-	2/24/77	2/15/78
Rio Grande fishes	5	4/19/78	4/27/78	-	-	-
<u>Region III:</u>						
Eastern timber wolf	4/8	10/31/74	4/16/75	-	1/ 4/77	6/ 5/78
Kirtland's warbler	5	10/31/74	1/20/75	-	6/21/76	10/22/76
Blue pike	12	10/31/74	2/27/75	-	1/22/76	6/29/76
Northern States bald eagle	12	5/15/78	8/ 9/78	-	-	-
<u>Region IV:</u>						
Mississippi sand- hill crane	4	11/12/74	1/20/75	(5/ 1/76)	8/ 5/76	9/14/76
Florida Everglade kite	6	11/12/74	5/13/75	-	-	-
American alligator	5/10	11/ 4/74	2/27/75	-	-	-
American crocodile	2	-	3/10/76	6/22/78	-	-
Puerto Rican parrot	1	7/ 3/75	3/18/76	(10/ /76)	-	-
Puerto Rican plain pigeon	4	3/ 1/76	4/27/76	-	-	-
Okaloosa darter	9	8/12/75	9/ 5/75	-	-	-
<u>Region IV:</u>						
Red-cockaded woodpecker	9	4/21/75	6/ 9/75	4/13/78	-	-
Dusky seaside sparrow	4	11/12/74	1/14/75	6/22/78	-	-
Eastern brown pelican	11	8/13/75	9/23/75	(1/12/77)	-	-
Florida manatee	5	6/ 9/76	7/19/76	-	-	-
Watercress darter	5	3/15/76	5/25/76	-	-	-
Florida panther	4	6/16/76	7/22/76	-	-	-
Red wolf	3	11/18/74	1/14/75	(3/17/76)	-	-
Snail darter	1	6/16/78	6/30/78	-	-	-

## APPENDIX IX

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Species by FWS region	1978 recovery priority	Status of recovery teams		Recovery plan status		
		Nominations received	Approval by FWS	Review draft received by FWS (note a)	Draft submitted for approval	Plan approved by director
<u>Region V:</u>						
Delmarva Fox squirrel	10	11/18/74	12/09/74	12/28/76	-	-
Eastern peregrine falcon	4	12/10/74	4/16/75	1/27/77	-	-
Maryland darter Chesapeake Bay bald eagle	1	12/ 6/74	4/ 9/75	-	-	rejected
	12	5/23/77	7/11/77	-	-	-
<u>Region VI:</u>						
Northern Rocky Mountain wolf	4	3/12/75	4/16/75	2/10/78	-	-
Rocky Mountain peregrine falcon	4	3/14/75	4/ 9/75	10/19/76	3/25/77	8/ 3/77
Colorado River fishes	1	5/20/75	8/14/75	-	-	-
Colorado River squawfish	1	-	-	11/ 7/77	2/ 9/78	3/16/78
Humpback chub	1	-	-	7/28/78	-	-
Black-footed ferret	3	3/14/75	4/ 9/75	7/ 6/77	6/ 2/78	6/15/78
Indiana & gray bats	7	10/31/74	1/20/75	-	-	-
Indiana bat	7	-	-	-	6/13/75	6/ 1/76
Greenback cutthroat trout	6	2/13/75	4/ 9/75	7/ 6/77	-	11/11/77
<u>Alaska:</u>						
Aleutian Canada goose	12	4/29/75	5/ 9/75	8/11/77	-	-
Alaska peregrine falcon	8	4/29/75	8/15/75	(12/30/77)	-	-

a/Dates in parentheses indicate only technical review draft received

STATUS OF STATE COOPERATIVE AGREEMENTSAS OF OCTOBER 1, 1978States with agreements

<u>State</u>	<u>Date signed</u>
Arkansas	6-23-76
California	6-23-76
Colorado	6-23-76
Delaware	6-23-76
Florida	6-23-76
Georgia	10- 6-77
Maine	6-23-76
Maryland	7-23-76
Michigan	6-23-76
Missouri	7-23-76
Nebraska	8- 2-77
New Jersey	6-23-76
New York	6-23-76
New Mexico	6-23-76
North Carolina	1-13-77
Pennsylvania	4-17-78
South Carolina	6-23-76
South Dakota	6-23-76
Virginia	12-23-76
Washington	6-23-76
Wisconsin	8-16-76
Tennessee	12-23-77

States without agreements

<u>State qualified or being reviewed</u>	<u>State applied-authority/ program unclear or lacking</u>	<u>State not applied</u>
Alaska	Connecticut	Alabama
Montana	Hawaii	Arizona
	Idaho	Indiana
	Illinois	Kentucky
	Iowa	Massachusetts
	Kansas	Minnesota
	Louisiana	Mississippi
	North Dakota	Nevada
	Utah	New Hampshire
	West Virginia	Ohio
	Wyoming	Oklahoma
		Oregon
		Rhode Island
		Texas
		Vermont



## United States Department of the Interior

OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

APR 17 1979

Mr. Henry Eschwege  
Director, Community and Economic  
Development Division  
U.S. General Accounting Office  
Washington, D.C. 20548

Dear Mr. Eschwege:

This responds to your letter of March 12, 1979, which transmitted for our review and comment a draft General Accounting Office (GAO) report entitled "Major Changes Needed to Make the Endangered Species Program Workable." Enclosed is a detailed analysis and response to specific items addressed in the draft report.

Our review is in general agreement with several findings in the draft report. In all cases we have either implemented or are in the process of implementing procedures to address these deficiencies. These points of agreement, followed by page references are:

- Better define the types of information and procedures needed to identify, act on and review petitions (FWS 39; GAO 60, 61).
- Increase State participation in program activities (FWS 102; GAO 120).
- Expedite review and approval of draft rulemakings (FWS 41; GAO 61).
- Establish ADP systems to transfer biological information and management information on proposed, candidate and listed species (FWS 42, 43; GAO 62, 120).
- Develop better tracking systems for consultation records and for monitoring consultations (FWS 70; GAO 78).
- Complete development of a priority system (FWS 100; GAO 119).



-2-

We have serious reservations about the findings and recommendations in the remainder of the report. We strongly disagree with some of the draft report's recommendations. I call your attention to these recommendations and our response in the following paragraphs (page references are in parentheses).

- Use a priority system based solely on degree of threat, or which uses degree of threat as the most important element (FWS 39, 40, 41 ; GAO 60, 61).

RESPONSE: Degree of threat is only one of several criteria which are used to determine species status. The factors to be considered in listing are specified in the Act, as amended. A priority system which does consider degree of threat, in addition to factors such as taxonomic and biologic status and recovery potential has been developed and will be reviewed as a part of the Program Management Document for FY 1981.

- List species only when threatened throughout their entire range (FWS 2, 40; GAO 61).

RESPONSE: This recommendation does not account for the increased threat to a species of eliminating a significant portion of its range and associated population. Since many isolated populations are genetically distinct, preservation of such populations is consistent with the objective of promoting genetic diversity.

- Strengthen law enforcement activities (FWS 103; GAO 120).

RESPONSE: The draft report provides no criteria to judge the effectiveness of FWS law enforcement activities, nor evidence to substantiate its findings. Until there are criteria provided and the problems more sharply identified, we cannot deal satisfactorily with this recommendation.

- Implement more meaningful and timely recovery plans (FWS 101; GAO 120).

RESPONSE: Species recovery depends on actions, not merely plans. The existence of a plan does not automatically imply action. Conversely, actions can take place without formal recovery plans. While plans serve an important coordinating function, the effectiveness of the Endangered Species recovery program should be evaluated on the basis of actions initiated.

-3-

A third category of recommendations in the draft report deals with issues which we acknowledge to be important but are not sufficiently developed in the report to allow us to deal adequately with them. These recommendations are as follows:

- Allocate budget and staff resources with high priority on review of listings and attention to staff assignments on the basis of taxonomic specialties. (FWS 41, 42; GAO 62).

COMMENT: We all agree that correct prioritization of activities and allocation of effort is important. However, the draft report does not provide a consistent framework within which to evaluate resource allocation. We think there are defensible reasons for the past treatment of review of listings and staff assignments. However, we are in the midst of a 14 month study of the Endangered Species Program which we hope will identify and clarify the decision making framework for resource allocation in the program. Until that study is successfully completed, any discussion of allocation issues would be premature.

- Resolve conflicts with Interior agencies more effectively (FWS 54; GAO 77).

COMMENT: We can agree that it is desirable for Interior agencies to set an example in reviewing their actions and carrying out consultations with FWS in accordance with the Section 7 regulations when listed species and their habitats may be affected. However, we cannot give much weight to this recommendation until it is qualified to recognize current funding and manpower constraints. Past increases in funding and manpower have allowed FWS to step up scrutiny of Interior actions but there can be no assurance that future increases will allow continued improvement in this domain.

- Allow permanent exemptions to the Act (FWS 74; GAO 88).

COMMENT: The 1978 amendments now provide that an exemption granted by the Endangered Species Committee is permanent if a biological assessment has been conducted. However, Section 7 (c) of the Act indicates that a biological assessment need only be prepared for construction projects after enactment of the 1978 Amendments. Therefore, if it would help the situation, we suggest that the Act be clarified to require that all agencies prepare biological assessment for those projects that may be subject to the exemption procedures.

-4-

- Assure consistent land purchases (FWS 102, GAO 120); increase state participation (FWS 102; GAO 120); strengthen law enforcement (FWS 103, GAO 120).

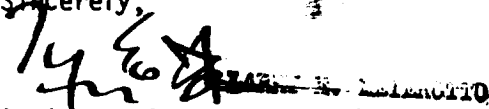
COMMENT: A serious flaw of the draft report is its failure to distinguish between problems which arise because of perceived misallocation of budget and staff resources and problems which arise because of the constraint on the absolute level of resources available. In the absence of better analysis, we find it impossible to resolve the question. While the current effort to develop procedures and regulations to implement the 1978 Amendments addresses many of the draft criticisms, we can only report work in progress rather than completed results.

Our overview of the draft report is that

- it provides little quantitative understanding of the operation of the Endangered Species Program
- it is based on anecdotal evidence which reveals flawed understanding of the cases presented, and
- it fails to provide clear or consistent performance criteria for the program and even uses its own criteria inconsistently.

I wish to make it clear that in our opinion the report is in need of extensive revision and the data are in need of extensive reanalysis before the report can attain an acceptable standard of accuracy and soundness. Our enclosed comments are meant to be helpful in this regard. We look forward to meeting with you to resolve the many issues discussed in our response.

Sincerely,

  
Assistant Secretary - Policy,  
Budget, and Administration

Enclosure:

GAO note: Some of Interior's comments were useful for making corrections, providing greater clarity and balance throughout the report. However, other comments either were contradictory with previous information received from Interior or other sources, irrelevant to the issues at hand, or inaccurate. Several of our conclusions, incorrectly construed by Interior officials to be biological in nature, were clarified.



## United States Department of the Interior

OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

JUN 15 1979

Mr. Henry Eschwege  
Director, Community and Economic  
Development Division  
United States General Accounting Office  
Washington, D.C. 20548

Dear Mr. Eschwege:

This letter responds to your revised draft report on the endangered species program, transmitted to us on May 24, 1979. Subject to changes agreed upon in meetings between responsible officials of GAO and the Department of the Interior, we feel that the revised draft represents a substantial improvement over the earlier draft proposed report given us for comment. We are now satisfied that the serious errors of fact contained in the earlier draft have been corrected in the final report and that opinions of GAO contained in the report are presented as such, rather than as facts. We are also satisfied that GAO will withdraw what we considered unwarranted conclusions in biological matters which were made in earlier drafts. Several of GAO's suggestions are well taken and we are, for instance, presently developing better procedures to account for petitions to list species and to keep track of the volume and complexity of consultations with other Federal agencies.

Other suggestions relate to difficulties that we consider to be inherent in the administration of a program of this sort. GAO suggests that clearer criteria be established for determining when a species is endangered or threatened, and that such criteria be applied in a uniform manner. Adoption of uniform criteria is of course hampered by the diversity of circumstances affecting widely differing species. We are constantly striving to obtain the most complete data and competent biological opinions possible on which to base our status determinations. While consistency is an important aspect of this process, we also must retain enough flexibility to protect a species when unusual circumstances arise.

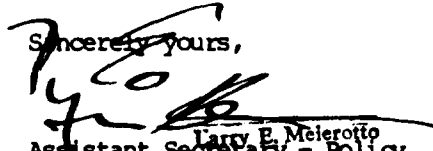
In a few cases, we simply disagree with GAO's recommendations. Of the two alternative modifications suggested in the draft report for the definition of "species" (Sec. 3(18)), we find unacceptable the one that would limit listings of vertebrates to species and subspecies. Such a definition might necessitate a needless allocation of resources to such activities as Section 7 consultations on biologically non-endangered populations of certain species which would have to be listed *in toto*, and could prevent us from providing legal protection at all in cases of widespread species, such as the gray wolf, which has been listed solely to protect populations in the conterminous States.

-2-

The alternate recommendation, allowing only the listing of "significant" populations is, however, acceptable and, we would contend, simply gives legislative sanction to the reasonable interpretation that we have made of the existing definition.

It is our present understanding that GAO is reserving judgment on the acquisition of Kealia Pond, pending a meeting between representatives of the Fish and Wildlife Service and the State of Hawaii to seek a long-term management agreement. We reiterate that, absent an acceptable commitment from the State, we consider Kealia Pond a high priority for Federal acquisition.

Sincerely yours,



Larry E. Meieroff  
Assistant Secretary - Policy,  
Budget, and Administration

GAO note: In no instance did Interior's comments identify an error of fact serious enough to warrant revising a finding, conclusion, or recommendation.

(143370)

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