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REPORT TO THE SUBCOMMITTEE ON FISHERIES AND WILDLIFE CONSERVATION AND THE ENVIRONMENT COMMITTEE ON MERCHANT MARINE AND FISHERIES HOUSE OF REPRESENTATIVES

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Improved Federal Efforts Needed To Equally Consider Wildlife Conservation With Other Features Of Water Resource Developments

B-118370

BY THE COMPTROLLER GENERAL OF THE UNITED STATES

MARCH 8, 1974

General Accounting Office.
General of the United States.
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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

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The Honorable John D. Dingell
Chairman, Subcommittee on Fisheries and
Wildlife Conservation and the Environment
Committee on Merchant Marine and Fisheries
House of Representatives

Dear Mr. Chairman:

This is our report on improved Federal efforts needed to equally consider wildlife conservation with other features of water resource developments. We made our review pursuant to your request.

As your office requested, we did not obtain written comments on this report from the agencies included in our review. However, we did discuss the matters presented in this report with agency officials.

We do not plan to distribute this report further unless you agree or publicly announce its contents. We want to direct your attention to the fact that this report contains recommendations to the Secretaries of Commerce, the Army, and the Interior, and the Director, Office of Management and Budget. As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions he has taken on our recommendations to the House and Senate Committees on Government Operations not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report. Your release of the report

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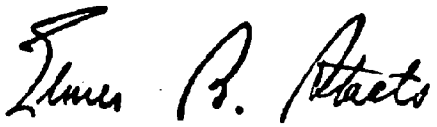
will enable us to send the report to the Secretaries, the Director, and the four committees for the purpose of setting in motion the requirements of section 236.

Sincerely yours,



Comptroller General
of the United States

GLOSSARY

Anadromous	Fish which spend part of their life cycle in freshwater and another part in saltwater.
Channelization	The practice of deepening, widening, straightening, or clearing the existing channels of rivers and streams for drainage, flood control, navigation, or erosion control.
Conservation	Includes both the mitigation and enhancement measures necessary to conserve and develop wildlife resources.
Development	Any alteration or modification of water resources through Federal or federally assisted projects, Corps of Engineers permits, or Federal Power Commission licenses.
Development agencies	Federal agencies, except wildlife agencies, responsible for planning, approving, or constructing water resource developments. These agencies are also referred to as water resource development agencies.
Enhancement	The improvement or development of wildlife or its habitat as a result of a water resource development.
Estuary	An area which includes all or part of the mouth of a navigable or interstate river or stream or other body of water having unimpaired natural connection with the open sea and within which seawater is measurably diluted with freshwater derived from land drainage.
Estuarine wetlands	Those lands within estuaries which are covered with shallow and sometimes temporary or intermittent waters.

Federal projects	All Federal or federally assisted water resource developments.
Mitigation	The prevention or replacement of losses or lessening of damages to wildlife resources due to water resource developments.
Section 10 permits	Form of permission granted by the Corps of Engineers to those parties who wish to do work in the Nation's navigable waters which will modify those waters. Modifications include dredging and construction of facilities, such as bulkheads and wharves. The Corps grants permits under authority of the Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. 403).
Separable costs	The additional or incremental costs necessary to include a purpose in a water resources project.
Small watershed projects	These are multiple-purpose projects, authorized under the Watershed Protection and Flood Prevention Act, which are used for such purposes as reducing floods, enhancing fish and wildlife resources, supplying water, providing recreation and other benefits in watershed areas no larger than 250,000 acres. The primary responsibility for administering the program rests with the Soil Conservation Service (SCS), Department of Agriculture.
Wildlife	Birds, animals, and fish and supporting habitat.
Wildlife agencies	Denotes fish, game, or other wildlife agencies at both the Federal and State level.
Wildlife resources	Includes both wildlife and the habitat upon which wildlife depends.

108 review	Refers to SCS's Watersheds Memorandum 108, dated February 4, 1971, which provides for reviewing approved watershed work plans that include stream channel improvements not yet installed and classifying the degree of environmental impact of each into one of three groups: Group 1--minor or no known adverse effect; Group 2--some adverse effect; Group 3--serious adverse effects. The SCS review is done in cooperation with State and Federal wildlife agencies.

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ABBREVIATIONS

AEC	Atomic Energy Commission
BCF	Bureau of Commercial Fisheries
BSF&W	Bureau of Sport Fisheries and Wildlife
EIS	environmental impact statement
EPA	Environmental Protection Agency

FPC	Federal Power Commission
GAO	General Accounting Office
NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
OMB	Office of Management and Budget
SCS	Soil Conservation Service

COMPTROLLER GENERAL'S REPORT TO THE SUBCOMMITTEE ON FISHERIES AND WILDLIFE CONSERVATION AND THE ENVIRONMENT COMMITTEE ON MERCHANT AND FISHERIES HOUSE OF REPRESENTATIVES

IMPROVED FEDERAL EFFORTS NEEDED TO EQUALLY CONSIDER WILDLIFE CONSERVATION WITH OTHER FEATURES OF WATER RESOURCE DEVELOPMENTS

B-118370

D I G E S T

WHY THE REVIEW WAS MADE

At the request of the House Subcommittee on Fisheries and Wildlife Conservation and the Environment, GAO reviewed implementation of sections 2 and 3 of the Fish and Wildlife Coordination Act.

The act provides that wildlife conservation receive equal consideration and be coordinated with other features of federally funded or licensed water resource developments.

GAO reviewed 28 water resource developments typical of those which have had a major impact on wildlife in three geographic areas: the Atchafalaya River Basin in Louisiana, the Cape Fear and adjoining Neuse River Basins in North Carolina, and the Columbia River Basin in the Pacific Northwest.

Developments included projects that were federally funded or permitted under Federal law for work in the Nation's navigable waters which would modify those waters.

Agencies covered in GAO's review were the:

--Corps of Engineers (Civil Functions), Army;

--Bureau of Reclamation and the Bureau of Sport Fisheries and Wildlife (BSF&W), Interior;

--Federal Power Commission;

--Soil Conservation Service (SCS); and

--National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration.

FINDINGS AND CONCLUSIONS

Section 2 of the act generally provides that:

--Federal development and permitting agencies consult with Federal and State wildlife agencies at the earliest stages of planning for or involvement in water resource developments.

--Wildlife agencies study effects of proposed developments and make recommendations for protecting and improving wildlife resources.

--In the case of federally funded projects, development agencies include in any report to the Congress at the time of project authorization those measures they believe are justified for wildlife conservation.

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Section 3 provides that adequate provisions, including acquisition of lands and waters, be made at water resource developments for wildlife conservation.

Improved Federal coordination efforts needed

Water resource development and wildlife agencies need to improve their efforts to equally consider wildlife conservation with other features of water resource developments.

Generally, wildlife conservation had not been considered equally with other features of the 28 water resource developments and the need for equal consideration was demonstrated in each of the river basins covered by GAO's review. For example:

--Developments, such as river channelization, flood control levees, diversion outlets, access canals to oil and gas exploration sites, and pipelines from production sites to refineries in Louisiana's Atchafalaya River Basin, which contains one of the largest swamps in North America, have resulted in losses of areas for wildlife use.

The basin is rich in sport and commercial fish, shellfish, furbearers, waterfowl, and the nutrients essential in the food chain and for dependent marine life in the Gulf of Mexico. Large oil and gas deposits are present under a significant portion of the Basin, and future developments can be expected.

The bayou shown in the photograph on page 9 illustrates one of many areas to be lost for wildlife use because of planned developments.

--The Pacific Northwest's Columbia River Basin, rich in wildlife, has had its water resources developed extensively for power, navigation, flood control, irrigation, and other purposes.

About 62 percent of the Columbia River tributaries are inaccessible to salmon and steelhead trout because of dams, and about 870,000 acres, much of which was big game habitat, has been inundated by reservoirs.

More wildlife may be lost because of land and water resources needed to increase the size of existing Federal hydroelectric projects.

Effects of water resource developments on wildlife can be equally considered through effective implementation of the coordination process mandated by the act. (See pp. 10 and 12.)

GAO's review showed significant and numerous breakdowns in the coordination process. To have an effective coordination process, procedures should be established to eliminate such breakdowns as

--development agencies did not always consult with wildlife agencies (see pp. 16, 23, and 24),

--wildlife agencies did not adequately evaluate wildlife effects of proposed developments (see pp. 16 to 23),

--wildlife agencies' study reports were not furnished to development agencies before projects were approved or authorized, and recommendations for wildlife conservation in such reports were too general (see pp. 24 to 29),

--wildlife agencies did not always recommend wildlife mitigation measures on SCS watershed projects (see pp. 33 and 34), and

--wildlife agencies did not follow up to determine whether wildlife conservation measures were being implemented (see pp. 36 to 39).

Procedures that should be established to improve the coordination process are discussed on pages 43 and 44. So that the needs of both wildlife and development agencies can be fully understood and adequately considered, coordinating agencies should jointly establish the procedures.

Need to clarify wildlife agencies' roles

Adequate implementation of the coordination process requires close working relationships not only between wildlife and development agencies but also among wildlife agencies themselves. The act recognizes this, but, when it was passed, the latter group included one Federal agency, the Interior's Fish and Wildlife Service, and State wildlife agencies. In 1970, functions of the Service were divided and reorganized so that now they are vested in two agencies in different departments--BSF&W in Interior and NMFS in Commerce.

These two agencies' roles under the act have not been clearly defined. Agreement on their coordination roles and responsibilities is necessary to avoid duplications and overlapping responsibilities, and to effectively use their limited resources. (See pp. 39 to 42.)

The establishment of criteria to better determine mitigation or enhancement measures should help resolve agency differences that affect decisions on the levels of wildlife conservation expenditures needed and on whether wildlife enhancement should be included as a project purpose. (See pp. 29 to 34).

Funding and staffing of wildlife agencies

Wildlife officials frequently cited inadequate funding and staffing as reasons for breakdowns in the coordination process. (See pp. 21 to 23.) Funding and staffing, therefore, are matters which the Secretaries of Commerce and the Interior should consider for improving implementation of the act.

RECOMMENDATIONS

The Secretaries of the Army, Commerce, and the Interior should, with the advice of State wildlife agencies, establish

--procedures to be observed by their agencies in implementing a coordination process for carrying out the requirements of the act and

--criteria for determining the justification of the mitigation or enhancement measures for water resource developments.

The Secretaries of Commerce and the Interior should

--seek an agreement on their wildlife agencies' respective roles and responsibilities for the coordinated review of Federal water resource projects and permits and

--initiate efforts to obtain the funds and personnel needed to effectively implement the act.

Because of OMB's role in promoting efficient, economical, and effective Government operations, the Director, OMB, should actively participate with the wildlife and development agencies in reaching agreement on

--coordination roles and responsibilities,

--procedures for implementing the act, and

--criteria to be used in determining the wildlife mitigation and enhancement measures. (See pp. 45 and 46.)

AGENCY COMMENTS

At the Subcommittee's request, GAO did not obtain the written comments of the Federal agencies on the contents of this report. GAO discussed the matters in the report with agency officials and considered their views in preparing this report.

MATTERS FOR CONSIDERATION BY THE SUBCOMMITTEE

Pending legislation, House bill 10651, would amend the Fish and Wildlife Coordination Act in several aspects. GAO has identified the matters discussed in this report which relate to the bill. (See pp. 47 and 48.)

CHAPTER 1

INTRODUCTION

The Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-666(c)), provides that wildlife conservation receive equal consideration and be coordinated with other features of federally licensed or funded water resource developments.

The Chairman of the Subcommittee on Fisheries and Wildlife Conservation and the Environment, House Committee on Merchant Marine and Fisheries, asked us to review implementation of sections 2 and 3 of the act. (See app. I.)

Section 2 generally provides that (1) Federal development and permitting[1] agencies consult with Federal and State wildlife agencies at the earliest stages of planning for or involvement in water resource developments, (2) wildlife agencies study the effects of proposed developments and make recommendations for protecting and improving wildlife resources, and (3) in the case of federally funded projects, development agencies include in any report to the Congress at the time of project authorization those measures they believe are justified for wildlife conservation. Section 3 generally provides that adequate provisions, including acquisition of lands and waters, be made at water resource developments for wildlife conservation.

THE FISH AND WILDLIFE COORDINATION ACT

Legislative recognition that wildlife should be considered in water resource developments licensed or funded by the Federal Government began with passage of the Fish and Wildlife Coordination Act in 1934. The act was amended in 1946, 1958, and 1965.

---

[1]Permits are required to be obtained from various Federal agencies by any parties proposing to control, alter, or discharge into navigable waters.

One Secretary of the Interior hailed the 1958 amendment as the most important conservation legislation in a quarter century. In effect, it (1) redefined wildlife conservation to include development and improvement in addition to the prevention of loss or damage to wildlife, (2) generally broadened the range of water development activities to which the act applied, (3) established procedures for reporting on developments, and (4) provided that development agencies uniformly consider conservation recommendations.

Also, the 1958 amendments added section 12 to the Watershed Protection and Flood Prevention Act (16 U.S.C. 1001-1009). This section established separate and different coordination requirements for SCS small watershed projects.

Section 12 requires the Secretary of Agriculture to notify the Secretary of the Interior when he authorizes planning assistance to local organizations on small watershed projects but does not require wildlife studies or consultation between the two departments. It provides that the cost of making wildlife studies on such projects be borne by the Secretary of the Interior from funds appropriated to his Department. In contrast, the Fish and Wildlife Coordination Act requires that consultation between the wildlife and development agencies take place and that wildlife studies be prepared and authorizes the Federal development agencies to transfer funds to the wildlife agencies for the cost of such studies.

Neither the Coordination Act nor section 12 requires that conservation measures recommended by the wildlife agencies be adopted by the development agencies. Both are permissive in this respect.

In reviewing implementation of the act, we examined departmental and agency procedures and guidelines, records, and reports; interviewed Federal and State officials; and considered related legislation. The agencies covered by our review were the:

--Corps of Engineers (Civil Functions), Department of the Army.

--Bureau of Reclamation and the Bureau of Sport Fisheries and Wildlife (BSF&W), Department of the Interior.

--Federal Power Commission.

--Soil Conservation Service (SCS), Department of Agriculture.

--National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration, Department of Commerce.

In addition, we visited State wildlife agencies in Oregon, Washington, Idaho, Louisiana, and North Carolina.

The agencies and programs we selected for review and the locations we visited are listed in appendix II.

For our review, we selected water resource developments typical of those which have had a major impact on wildlife in three geographic areas: The Atchafalaya River Basin in Louisiana, the Cape Fear and adjoining Neuse River Basins in North Carolina, and the Columbia River Basin in the Pacific Northwest. (See app. III for a listing of the 28 water resource developments (17 permits under section 10 and 11 projects) which our review covered.)

CHAPTER 2

NEED TO IMPROVE FEDERAL EFFORTS TO EQUALLY CONSIDER WILDLIFE CONSERVATION WITH OTHER FEATURES OF WATER RESOURCE DEVELOPMENTS

Water resource development and wildlife agencies need to improve their efforts to give wildlife conservation equal consideration with other features of water resource developments.

Generally, wildlife conservation had not been considered equally with other features of the 28 water resource developments we reviewed, and the need for equal consideration was demonstrated in each of the three river basins covered in our review.

--Developments, such as river channelization, flood control levees, diversion outlets, access canals to oil and gas exploration sites, and pipelines from production sites to refineries in the Louisiana's Atchafalaya River Basin, which contains one of the largest swamps in North America (the lower part of which is shown on the map on p. 18), have resulted in losses of areas for wildlife use. The basin is rich in sport and commercial fish, shellfish, furbearers, waterfowl, and nutrients essential in the food chain and for dependent marine life in the Gulf of Mexico. Large oil and gas deposits are present under a significant portion of the Basin, and future developments can be expected. The bayou shown in the photograph on page 9 illustrates one of many areas to be lost for wildlife use because of planned developments.

--North Carolina's Cape Fear and adjoining Neuse River Basins have supported about 100 species of fish and game but dams and channelization projects have reportedly caused some major wildlife losses. For instance, anadromous fish have essentially lost access to about 76 miles of spawning and nursery grounds on the Cape Fear River or its tributaries because five navigational dams act as barriers which the fish can only pass during boat lockages or when high water

A bayou in the Atchafalaya River Basin where dredge material will be deposited.

allows them to swim over the dams. Game fish in North Carolina have reportedly suffered estimated losses of 90 percent following channelization of portions of watersheds in areas like the Neuse River Basin. Throughout North Carolina, 57 watershed projects involving 3,165,289 acres have been authorized for planning.

--The Pacific Northwest's Columbia River Basin (see map on p. 11), rich in wildlife, has had its water resources developed extensively for power, navigation, flood control, irrigation, and other purposes. About 62 percent of the Columbia River tributaries are inaccessible to salmon and steelhead trout because of dams, and about 870,000 acres, much of which was big game habitat, has been inundated by reservoirs. More wildlife losses may occur because of lands and water resources needed to increase the size of existing Federal hydroelectric projects.

In addition to the direct effects described in the above examples, water resource developments can also indirectly affect wildlife by inducing changes in agricultural practices or growth in industrial or commercial activities. For example, the billboard shown in the photograph on page 13 advertises industrial sites along a ship channel to be created by the Corps' Atchafalaya project.[1] One of the habitat areas in which an industrial site will be developed, after it is covered by dredged material, is the bayou shown in the picture on page 9.

Effects of water resource developments on wildlife can be equally considered with other project features through the coordination process mandated by the act. The topical arrangement of this report generally follows that process and points out the breakdowns that have occurred in implementing each step of it. Essentially, in our opinion, the process for federally funded projects should involve the following actions.

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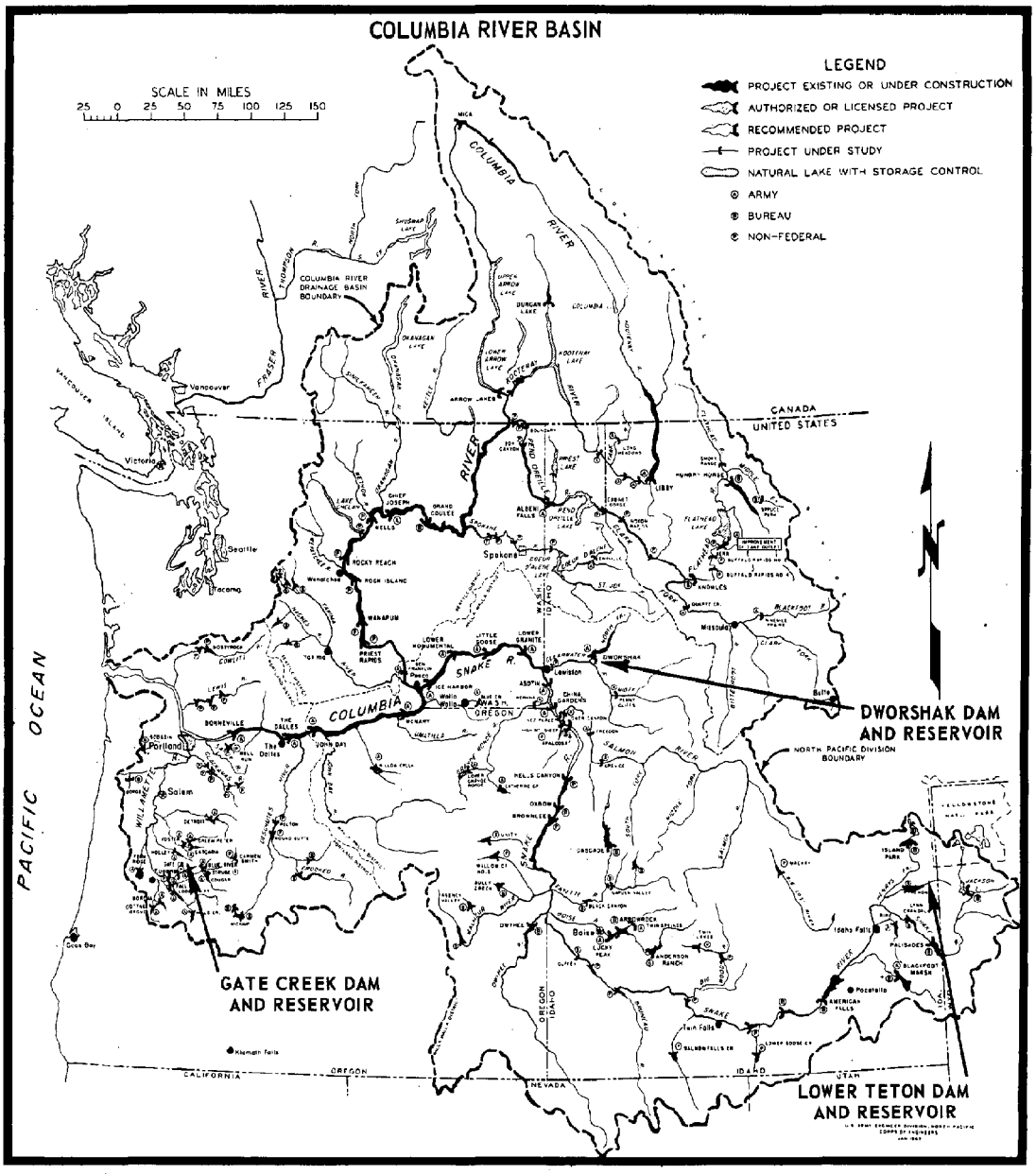
[1]The Atchafalaya River, Bayous Chene, Boeuf and Black project in Louisiana.


COLUMBIA RIVER BASIN
LEGEND
PROJECT EXISTING OR UNDER CONSTRUCTION
AUTHORIZED OR LICENSED PROJECT
RECOMMENDED PROJECT
PROJECT UNDER STUDY
NATURAL LAKE WITH STORAGE CONTROL
ARMY
BUREAU
NON-FEDERAL
SCALE IN MILES
25 0 25 50 75 100 125 150
COLUMBIA RIVER DRAINAGE BASIN BOUNDARY
CANADA
UNITED STATES
PACIFIC OCEAN
DWORSHAK DAM AND RESERVOIR
NORTH PACIFIC DIVISION BOUNDARY
GATE CREEK DAM AND RESERVOIR
LOWER TETON DAM AND RESERVOIR
COLUMBIA RIVER
SNAKE R.
Spokane
Portland
Salem
Boise
Vancouver
Victoria
Seattle
Tacoma
Missoula
Lewiston
Wallace
Idaho Falls
Pocatello
Twin Falls
Klamath Falls
Cook Bay
CALIFORNIA
OREGON
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--Development agencies, at the outset of planning a project, consult wildlife agencies, which study the potential wildlife effects.

--After studying the effects, wildlife agencies formulate specific wildlife conservation measures and issue a report of findings and recommendations. (The report is to be made an integral part of any development report going to the Congress in support of authorization.)

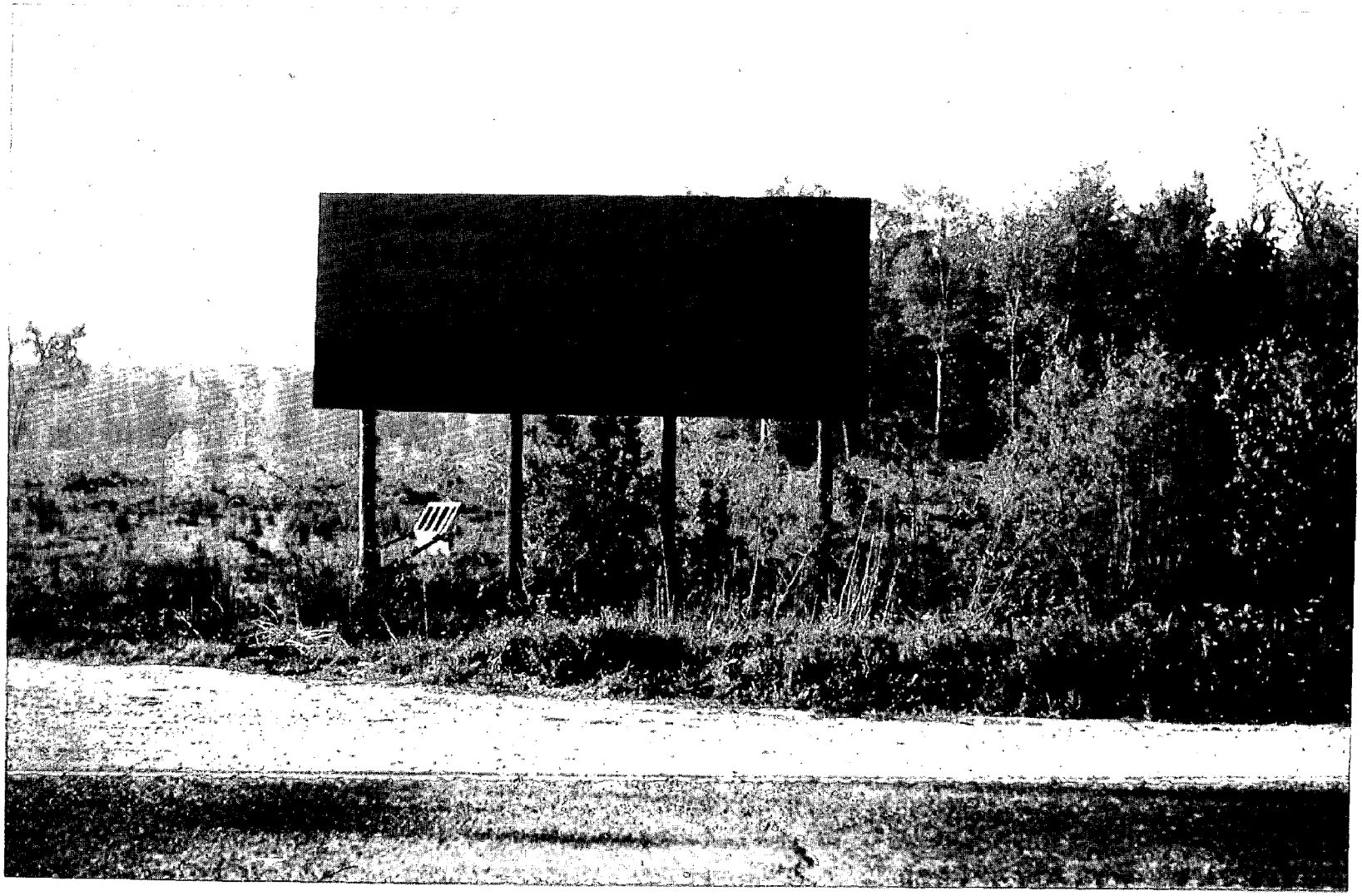
--On the basis of the wildlife report, development agencies determine the wildlife mitigation and enhancement measures that, in their view, are justified and acceptable for inclusion in the project plan.

--Following authorization, wildlife agencies prepare additional detailed reports to solve special problems and assist development agencies in preparing the final project design and specifications.

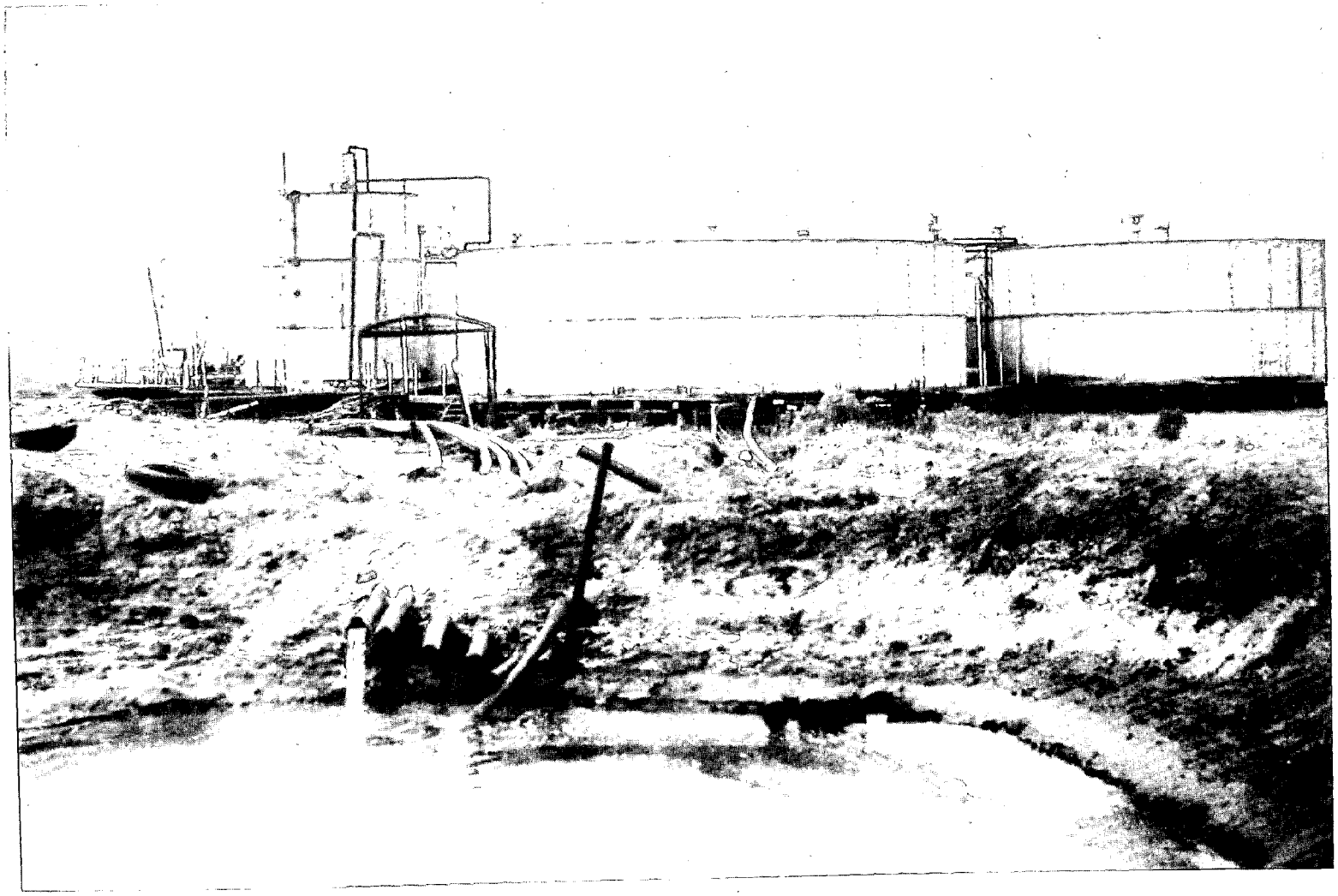
--Development and wildlife agencies jointly prepare and sign a general plan for designating project lands, water, or other project features to be devoted to wildlife conservation.

--During project construction and operation, wildlife agencies follow up to insure that conservation measures implemented are adequate and effective in accomplishing the objectives stated.

Although the act's consultation, study, and reporting requirements as discussed above are essentially the same for section 10 permits and Federal projects, there are substantial and significant differences in these two activities. Permit applications are processed over a short time--usually 30 days--while Federal projects, which are much more complex, may be planned over a period of years. Permit projects are accomplished predominantly by the private sector rather than public agencies. Permit projects are usually of smaller individual magnitude but combined may have significant impacts. (See the photograph on page 14 for an illustration of a permitted activity.) The number of section 10 permit applications is estimated to be at an annual rate of about 17,000 in fiscal year 1974.



Billboard along U.S. Highway 90 in Louisiana advertising industrial sites along the ship channel to be created by the Atchafalaya Project.



A permit was issued to build the breakwater between these oil storage tanks and the waste oil collection pit.

There are hundreds of Federal projects on which project planning is active.

Also, adequately implementing the coordination process described above requires close working relationships not only between wildlife and development agencies but also among wildlife agencies themselves. The act recognizes this, but when it was passed the latter group included one Federal agency, the U.S. Fish and Wildlife Service in the Department of the Interior and State wildlife agencies.

In 1970 functions of the Fish and Wildlife Service were divided and reorganized so that now they are vested in two agencies in different departments--BSF&W in the Department of the Interior and NMFS in the Department of Commerce. These two agencies' roles under the act have not been clearly defined and the need for agreement on their coordination roles and responsibilities is discussed on pages 39 to 42 of this report.

NEED FOR MORE COMPLETE CONSULTATION AND STUDIES ON WILDLIFE EFFECTS

As a first step in the coordination process, the act requires that development agencies consult wildlife agencies concerning conservation of wildlife resources when planning developments and their modifications. Wildlife agencies are required to prepare detailed studies which include (1) the wildlife losses that cannot be avoided by the development or subsequent modifications, (2) the measures proposed for mitigating or compensating for wildlife damages, and (3) wildlife situations that could be enhanced as part of the development, either incidental to other features or as separate project features.

Those consultation and study requirements were not adequately implemented in three respects.

--For section 10 permits, development agencies did not always consult wildlife agencies.

--Although development agencies consulted wildlife agencies on the federally funded projects and certain permits, the wildlife agencies did not adequately study the expected losses, damages, or opportunities for enhancement.

--Development agencies sometimes significantly modified their projects without consulting the wildlife agencies.

Lack of consultation and adequate study on section 10 permits

Of the 17 permits we reviewed, 10 were not submitted to BSF&W for study mainly because of a Corps and BSF&W jurisdictional disagreement. The Corps' position was that coordination was not required for activities permitted in geographic areas between mean high tide and mean low tide; BSF&W's was that coordination was required. The Corps has now accepted BSF&W's position.

For the remaining seven permits that the Corps submitted to BSF&W for consultation, wildlife studies were lacking. BSF&W did only a cursory office study on the seven permits received. Their reports on these permits did not (1) quantify wildlife and habitat losses and damages, (2) recommend specific measures to minimize these losses and damages, or (3) identify opportunities to improve wildlife.

Because very small acreages usually are involved, less detail may be required to evaluate the wildlife effects of each permit. For example, the 17 permits covered 26.35 acres in the Atchafalaya Basin compared to 8,100 acres covered by the Atchafalaya project. However, when large numbers of permits are in the same general area, wildlife agencies also need to evaluate the cumulative wildlife effects of development under each permit.

Wildlife aspects of federally funded projects not adequately studied

Wildlife agencies did not complete adequate wildlife studies for 6 of the 11 proposed projects we reviewed. No more than a preliminary or reconnaissance wildlife study was done on any of these six projects. According to BSF&W procedures, preliminary studies are only intended to gain general familiarity with an area. They are useful for discussions with State wildlife agencies and for estimating a project's anticipated effects on wildlife.

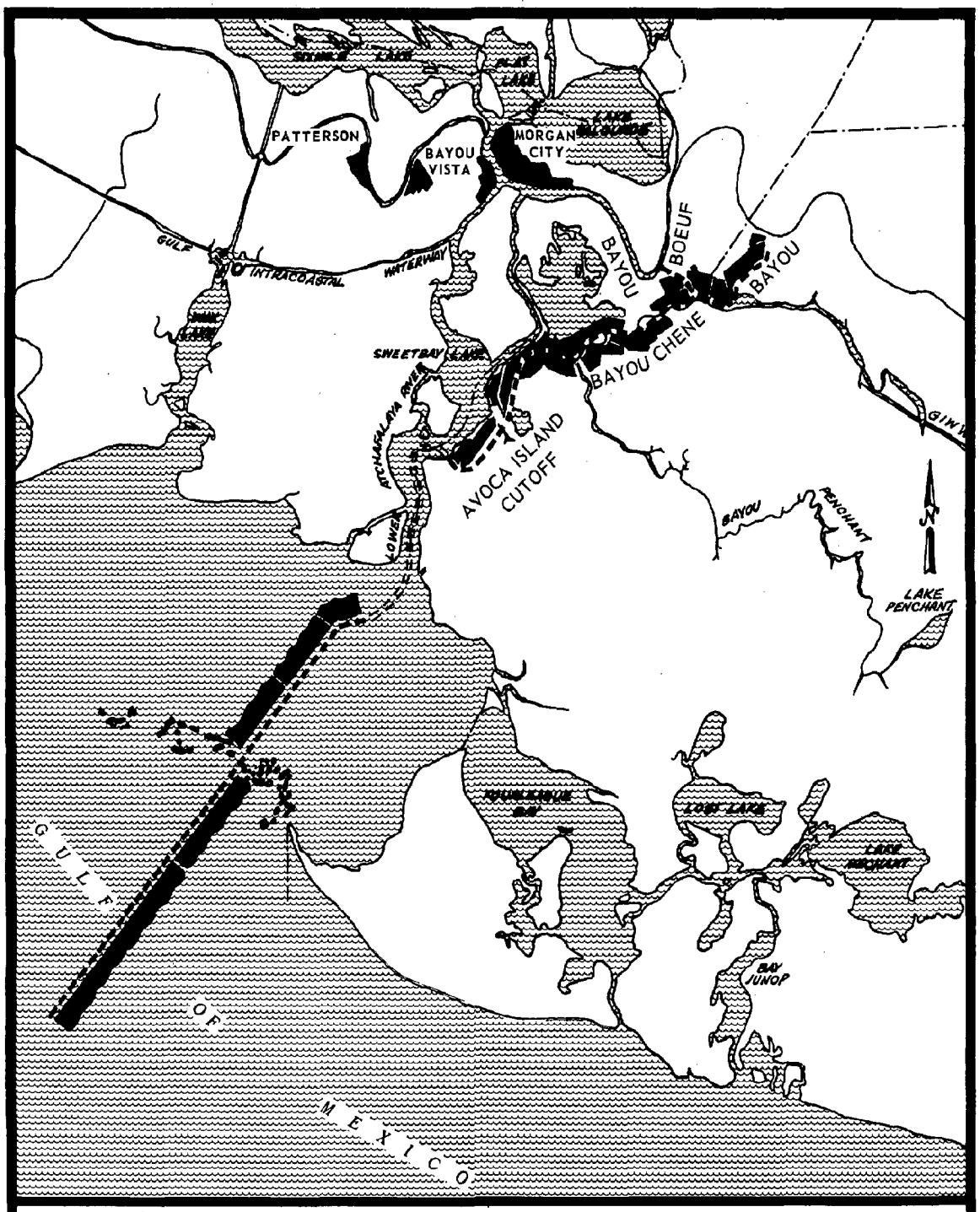
The limited extent of a preliminary study is illustrated by the following two examples taken from the six projects.

--Atchafalaya project--BSF&W made a preliminary study of this approved Corps project, which involves a 53-mile-long navigation channel (see map on p. 18) to be constructed for economically moving oil and gas rigs through the Atchafalaya coastal wetlands to various offshore exploration sites. (See photograph of a rig on p. 19.) BSF&W's preliminary study did not identify any wildlife to be lost, damaged or benefited by the project. However, BSF&W officials visited the site at our request during the review and advised us that the project would extensively damage a variety of wildlife resources in and around the proposed channel site.

--Teton project--This approved Bureau of Reclamation project involves construction of a 300-foot-high earth-filled dam to supplement the irrigation of about 111,000 acres, generation of about 20,000 kilowatts of power, flood control, and recreation. Its location on the Teton River in southeastern Idaho (see photographs on p. 20) has been of great concern to wildlife interests which have initiated court action to stop construction on the basis that the project will destroy 17 miles of one of Idaho's "finest self-sustaining" trout streams and inundate "critical" big game winter range. BSF&W's preliminary study did not show (1) the number of big game animals from adjacent areas using the Teton Basin as winter habitat, (2) the significance of the Teton Basin as a self-sustaining cutthroat trout fishery, and (3) the recreation potential of the Teton River as a wild and scenic waterway.

The other four projects not adequately studied were SCS' Flea Hill, Lyon Swamp-White Oak, Swift Creek, and Upper Bay Watershed projects.

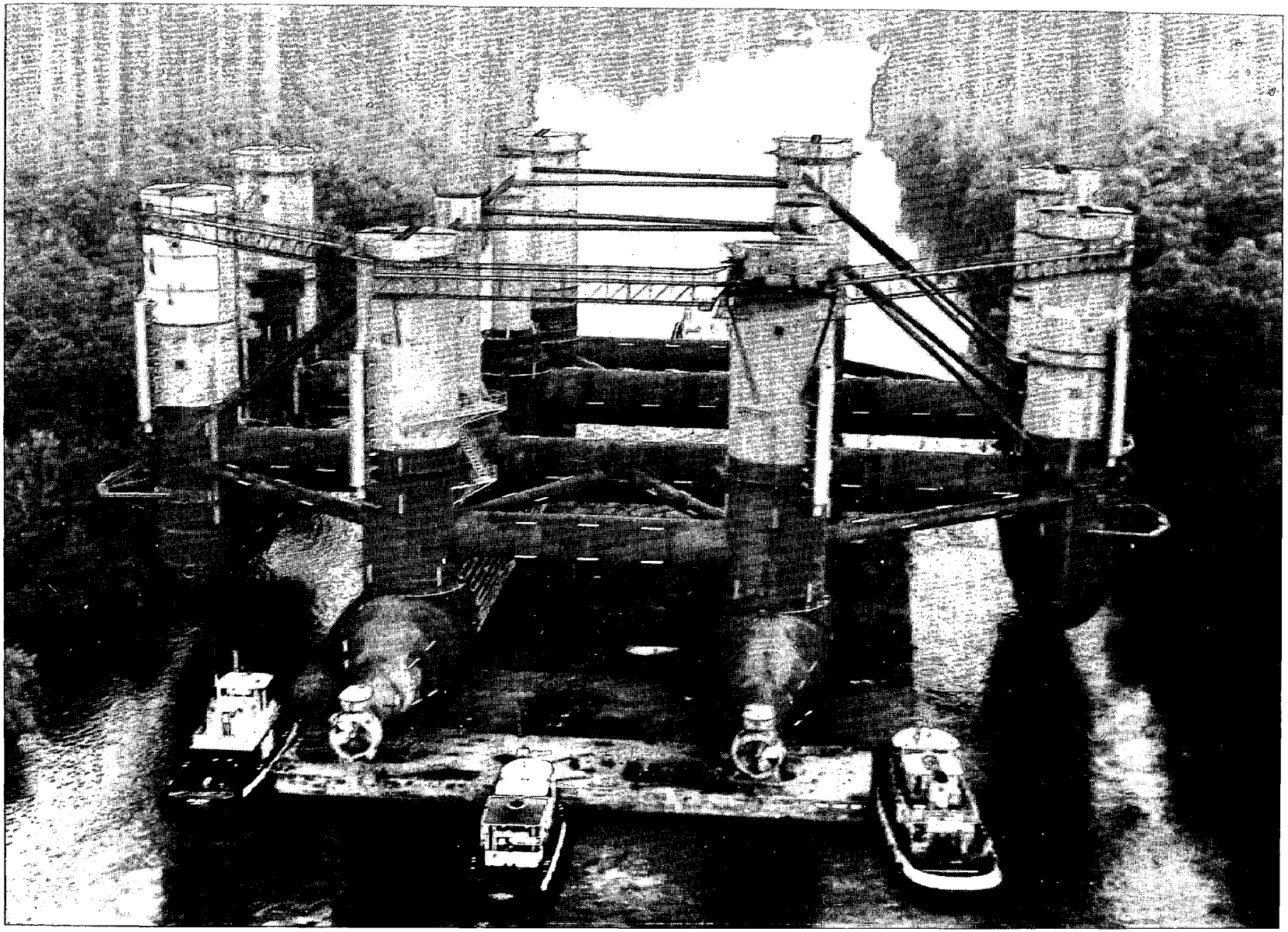
Explanations as to why each project and permit was not studied in detail were not always a matter of record. From discussions with agency officials and examination of records that were available for some developments, we noted the following.



ATCHAFALAYA RIVER AND
BAYOUS CHENE, BOEUF, AND BLACK, LA.

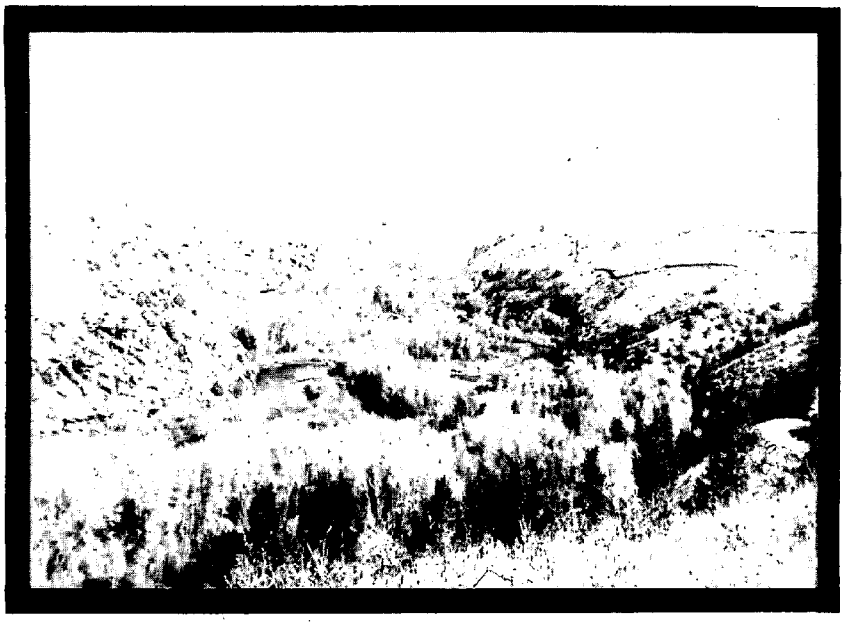
--- PROPOSED ATCHAFALAYA NAVIGATION CHANNEL

PROPOSED LOCATIONS WHERE DREDGED MATERIAL WILL BE DEPOSITED

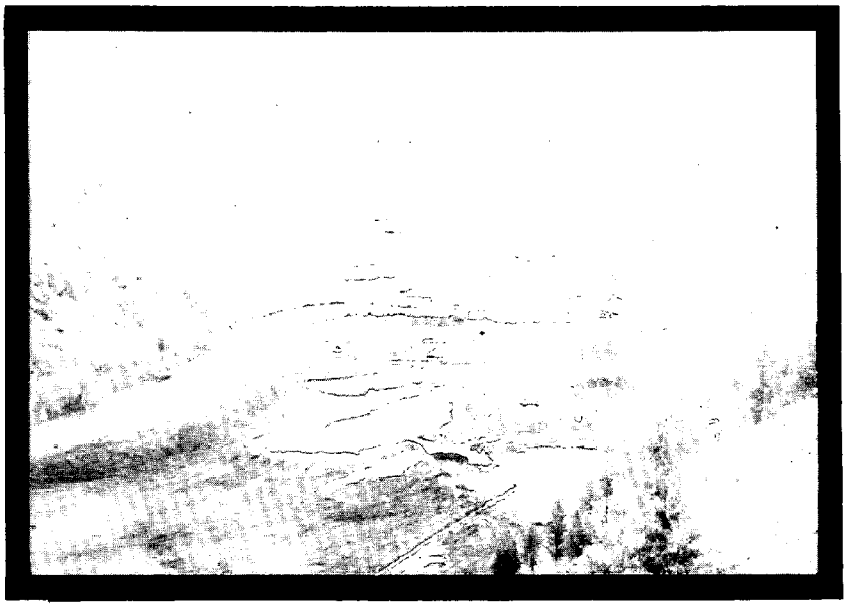


Drilling rig fabricators construct their rigs in piecemeal fashion, then transport the pieces to a deepwater port where assembly is completed. Construction of the channel at the authorized width and depth will allow the rigs to be assembled at one location.

Photograph courtesy of Jesse Grice, Photo-Mart



A portion of the wildlife habitat and cutthroat trout fishery to be eliminated by construction of the Teton project.



This photograph, taken in August 1972 at the same location as shown in the picture above, shows the wildlife habitat after site preparation for the Teton project.

BSF&W photographs

Wildlife effects believed to be insignificant

This reason for the lack of adequate wildlife studies was applied mainly to some watershed projects and permits. For example, lack of probable significant wildlife effects was the reason why only a preliminary study was done on the Corps' Atchafalaya project and SCS' Flea Hill and Upper Bay River watershed projects in North Carolina. The Corps also gave it as a reason for not sending certain permits to wildlife agencies for study.

The act does not use significance as a criterion for determining if studies are needed. But BSF&W procedures allow preliminary studies to be construed as fulfilling the act's study requirements "if it is obvious that the proposed project will result in no significant effect on fish and wildlife."

Actually, information now available indicates that some projects not adequately studied may, in fact, significantly affect wildlife. That evidence is mainly from comments of wildlife agencies on environmental impact statements prepared under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) and the results of SCS' and BSF&W's "108 reviews" to evaluate the degree of environmental damages expected from SCS watershed projects. For example, NMFS, in commenting on the environmental impact statement for the Atchafalaya project, said the project would have a substantial adverse effect on sport and commercial fisheries because of the decline in organic food material produced in the estuary.

Lack of funds and staff

Wildlife agency officials frequently cited this reason for lack of adequate wildlife studies. For instance, lack of funds and staff was given as the reason why wildlife agencies had been unable to develop baseline environmental data needed to evaluate permits in the Atchafalaya Basin. This reason was also given as to why adequate wildlife studies were not completed on the Teton project.

The Corps of Engineers and the Bureau of Reclamation, in accordance with the Coordination Act, transfer funds to BSF&W for wildlife studies of Federal projects. BSF&W

uses direct appropriations to study permits, small watershed projects, and other Federal activities.

During our review, we tried to determine BSF&W's funding and manpower assigned to the various phases of Coordination Act work. For selected projects in region 1[1] we tried to obtain data on funds needed, requested, received, and actually spent by BSF&W. However, we were unable to readily make the determinations because BSF&W accounts were not maintained by specific activities and projects or in a manner to permit such determinations. For example, generally, major activity accounts were maintained as a single pool of funds covering both Corps and Bureau of Reclamation projects and thereafter the use of the funds was not readily identifiable for individual projects.

After we completed our fieldwork, BSF&W adopted a revised accounting system, effective July 1, 1973, to provide more specific information.

In the case of the section 10 permit applications in the Atchafalaya Basin, information concerning the quality and depth of wildlife agency studies suggested to us that funding and staffing problems existed. For example, officials of the BSF&W Lafayette, Louisiana, field office informed us that they had only two staff members to review over 100 permit applications received each month in the Atchafalaya Basin. From August 1972 to April 1973, only 20 permit applications received site visits for assessing their impact on wildlife and determining possible wildlife conservation measures.

In most cases, wildlife studies of section 10 permits primarily involved an evaluation of information the applicant provided. BSF&W officials said that, because their studies were limited, they frequently resulted in general comments rather than specific recommendations for wildlife conservation. Also these officials said additional funds and staff would allow wildlife agencies to gather data to assess the cumulative impact of permits.

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[1]Region 1 includes Oregon, Washington, Idaho, Hawaii, and California.

NMFS officials informed us that as of June 1973 only one biologist was available to review permit applications in Texas and Louisiana. These officials said that in the Atchafalaya Basin, because of a lack of funds and staff, only a few section 10 permit applications had received site visits. In no case, however, had they performed a detailed wildlife study on a section 10 permit application.

Subsequently, BSF&W and NMFS Washington office personnel made a detailed analysis of their records and files and provided us with agencywide information on their workload, funding, and personnel needs. This information is attached as appendix IV. The information shows an increasing workload and contains views on the additional funds and staff the agency officials believe are needed.

Wildlife agencies not always consulted on modifications

Development agencies should consult with wildlife agencies when projects are modified because such modifications could have a significant impact on wildlife. Some of the projects we reviewed were modified significantly after authorization, but wildlife agencies were not consulted. For example:

--After authorization of the Teton project, the Bureau of Reclamation reduced the minimum reservoir pool level by 26,500 acre-feet, or 23 percent. We brought this modification to the attention of BSF&W officials, and they expressed considerable concern over not having the opportunity to study the reduction. These officials pointed out that in their preliminary study of 1961 they had cautioned the Bureau of Reclamation on the need for a storage pool large enough to preserve the reservoir's fish population. Reclamation officials could not explain why BSF&W was not consulted.

--On the Atchafalaya project, the Corps increased the area in which dredge spoils were to be placed by 800 acres, or about 10 percent. The Corps did not notify BSF&W of the increase because it believed the change would not have a significant effect on wildlife. When we brought it to the attention of BSF&W

officials, they regarded the change as significant and maintained that it was BSF&W's responsibility, not the Corps', to determine the significance of such changes on wildlife.

According to the BSF&W's Chief of the River Basin Studies Division, there were really no formal mechanisms to report postauthorization changes to BSF&W. For instance, his agency might be advised of modifications by letter and might meet with the construction agency to discuss them. Occasionally, he said, his agency had found modifications too late to effectively enter the planning picture. The quality and frequency of communication, in his opinion, vary considerably among BSF&W's local officials and development agencies. Bureau of Reclamation officials informed us also of the lack of formal procedures for reporting postauthorization changes to the wildlife agencies.

RECOMMENDATIONS ON WILDLIFE STUDIES SHOULD BE TIMELY AND MORE SPECIFIC

After a wildlife agency studies the effects of a development, it must furnish a report to the development agency containing specific recommendations for wildlife conservation. The report should be furnished before development proposals are approved or authorized by the Congress or others who approve water resource projects. None of the reports furnished for the water resource developments we reviewed met both of these requirements. The recommendations were either too general or the reports too late to be considered for initial planning or decisionmaking before project authorization. They were available, however, for postauthorization planning.

Although additional studies are needed after project approval, it is important that detailed wildlife reports be available before approval of water resource projects. The detailed reports would be useful:

--For project planning. A development agency should consider wildlife conservation at the same time that it is planning a development's other purposes.

--For project decisionmaking. To decide on the merits of approving developments or selecting among

alternatives, information is needed on the wildlife effects, wildlife agency recommendations, and the development agencies' plan for implementing those recommendations.

The act recognizes these two purposes and requires that wildlife reports be an integral part of the development agency reports to the Congress or others who approve water resource projects.

Recommendations were not specific

The act calls for recommendations to be "as specific as is practicable" concerning features recommended for wildlife conservation and development, lands to be used or acquired for such purposes, and the results expected.

BSF&W instructions provide for developing specific recommendations through detailed wildlife reports. Such reports were completed on 5 of the 11 projects, but even in those cases the results were either not available until after project approval or, like preliminary studies, the reports contained only general recommendations.

Following are some examples of wildlife agencies' recommendations on the projects we reviewed.

--"Nearby replacement lands should be acquired and developed to provide improved habitat to mitigate this loss [big game animals]." This recommendation on the Teton project did not specify the land to be acquired, the number of acres needed, how it was to be developed, the kind of replacement habitat desired, and when the acquisition should take place in relation to the acquisition of lands for other project purposes.

--"Place spoil on existing spoil [dredged material] banks or on other high ground." This recommendation on the Atchafalaya project did not specify the location of the disposal sites nor the amount of dredged material that could be deposited, even though some sites like that pictured on page 9 appeared to have value as wildlife habitat.

Detailed reports not available for project approval

Of the five detailed wildlife reports that were prepared, long delays were involved in furnishing three of them to the development agencies and other circumstances were involved in the untimely availability of the remaining two.

The delays in furnishing the three reports are shown in the following table.

Project	Congressional approval	Detailed report furnished	Years of delay
Gate Creek	1962	1970	8 years
Randleman	1968	1973	5 years
New Hope	1963	1968	5 years

On these three projects, BSF&W's initial reports to the development agencies were based on preliminary studies (called reconnaissance reports). These reports did not fully identify wildlife losses and damages, therefore, conservation measures, such as mitigation or enchancement, could not be considered fully. Also these preliminary studies did not clearly indicate when and if detailed reports would be forthcoming.

BSF&W procedures state that, when a preliminary study shows that the proposed project will not significantly affect wildlife, the reconnaissance report can be construed as fulfilling the reporting requirements of the act and a statement to that effect will be contained in the report. If a preliminary study indicates the need for a detailed study, the reconnaissance report will recommend a detailed study and clearly state that it is only of a reconnaissance nature and does not constitute the report required under the act. None of the reconnaissance reports on the three projects listed in the above table contained such language and none recommended that detailed wildlife studies be available before project approval.

BSF&W work priorities apparently prevented some detailed studies from being completed in time. For example,

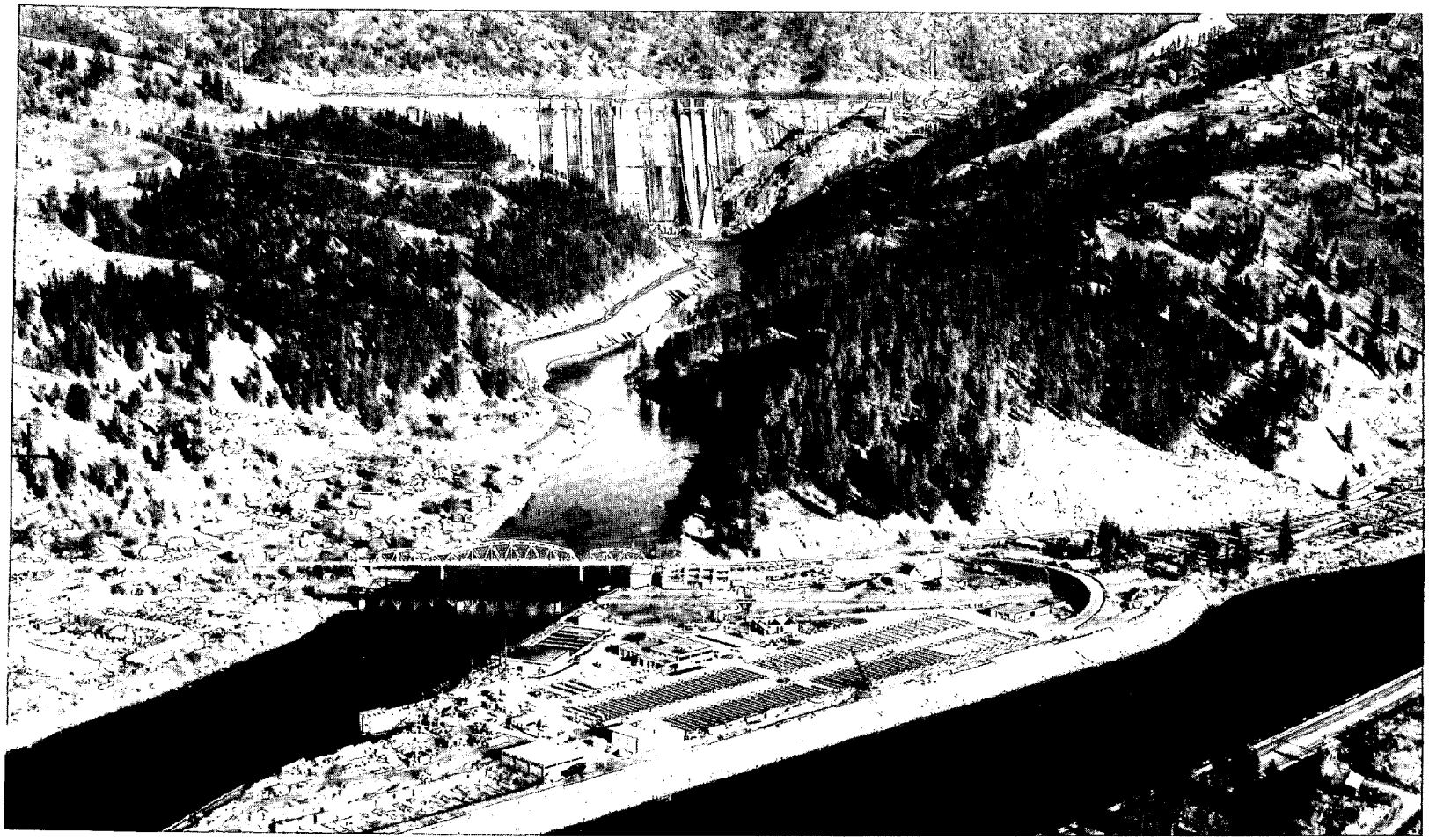
BSF&W officials said they considered the Corps' Gate Creek project in Oregon to be low in priority because authorization was being sought for more important projects at the same time and that BSF&W did not have the staff, funds, or time to prepare detailed reports for each of them.

For the fourth project, SCS' Little Contentnea Creek Watershed project in North Carolina, the Department of the Interior requested that BSF&W's report, which had been furnished to SCS 1 year earlier, accompany the project work plan when it was forwarded to the Congress. However, the report did not accompany the work plan because the Department of the Interior did not make this request in time.

For the Corps' Dworshak project in Idaho (see photograph on p. 28), the fifth project for which a detailed report was prepared, the Congress received in 1962, at the time of project approval, a wildlife report that was being revised. BSF&W issued a detailed report to the Corps in June 1960 to justify its opposition to construction of the project. After that report was issued, the Corps notified BSF&W in September 1960 that (1) the wildlife agency's recommendations were based on incorrect engineering data supplied by the Corps and (2) the Corps was considering enlarging the project. The effect of the incorrect data and the subsequent decision to enlarge the project was that 7 more stream-miles would be inundated and the reservoir area would be increased by about 57 percent. The Corps set a target date of June 30, 1961, which BSF&W said it could not meet for a new wildlife agency report.

Claiming a pressing need for more electric power, the Secretary of the Interior agreed in March 1962 that the Corps could seek project authorization based on the first report; the Congress approved the project in October 1962.

BSF&W's second report, completed in August 1962 and not used for project approval, superseded the first report because it was based on correct engineering data and the Corps' decision to enlarge the project. It dropped any objections to project construction in favor of a number of wildlife mitigation measures.



Corps photograph

Dworshak Dam, Reservoir and Fish Hatchery

Wildlife resources affected include about 15,000 acres of big game wintering habitat and fish spawning grounds with the potential to accommodate 20,000 steelhead and 16,000 Chinook salmon. Project purposes include operation of 400,000 kilowatts of power and 2,000,000 acre-feet of water storage for navigation and flood control projects. The estimated total cost was $302 million.

NEED FOR CRITERIA TO DETERMINE THE MITIGATION AND ENHANCEMENT MEASURES

Another step in the coordination process provides that wildlife agency reports and recommendations be fully considered in deciding the mitigation and enhancement measures for water resource developments. The act provides also that only those measures considered justifiable by the development agencies are to be included in project plans. Wildlife officials contend, however, that, with the procedures development agencies use to justify projects and project features, it is all but impossible to justify measures needed to mitigate project-caused losses, particularly where land acquisition is involved.

Criteria is needed for determining mitigation measures

For the federally funded developments we reviewed, we found several instances where wildlife officials expressed dissatisfaction with the mitigation measures development agencies decided were justified and would be included in project plans. For example, wildlife officials told us that they asked for

--replacement land similar to the bottom land inundated by the New Hope project to be managed as a wildlife preserve, but the Corps offered only project multipurpose lands on rocky hillsides;

--about 9,500 acres of habitat to be acquired for exclusive management as big game wintering range at the Dworshak project, but the Corps agreed to acquire only 5,000 acres; and

--artifical propagation equal to 20,000 steelhead and 16,000 chinook spawners for losses caused by the Dworshak project, but the Corps would provide hatchery facilities for the equivalent of only 12,000 steelhead spawners.

Wildlife officials generally attribute their problems with the mitigation measures to development agencies' application of the economic analysis procedures developed to implement Senate Document 97, May 29, 1962, and titled

"Policies, Standards, and Procedures in the Formulation, Evaluation, and Review of Plans for Use and Development of Water and Related Land Resources." They expressed dissatisfaction with those procedures because they result in evaluating wildlife losses monetarily, on the basis of quantities of recreation days lost rather than in terms of habitat.

Under the procedures developed to implement Senate Document 97, wildlife losses and benefits are evaluated on the basis of increases or decreases in recreation-use days which can be attributed to the project. Such changes are multiplied by a monetary figure for the value of hunting and fishing-use days contained in supplement 1 to Senate Document 97, June 4, 1964, and titled "Evaluation Standards for Primary Outdoor Recreation Benefits."

BSF&W has not used, and has objected to the use of, these procedures to measure project losses. As their authority, BSF&W officials cite Senate report 1981 (85th Congress), which recommended enacting amendments to the Coordination Act in 1958. In that report the Senate Interstate and Foreign Commerce Committee stated that it understood that loss prevention measures "would not have to be justified under the usual benefit-cost type of analysis." According to BSF&W officials, the intent was to avoid having to use a dollar evaluation of prevented losses as justification for mitigation measures.

BSF&W officials said that the Corps, in determining whether mitigation measures were justified, frequently took the number of man-days of hunting that would be recovered under a mitigation proposal, multiplied that figure by the daily unit value, and concluded that the benefits did not justify the cost.

BSF&W officials explained that the error in this approach was that the onsite-use values represent only part of the environmental values affected. Use of land for hunting is typically low per acre, these officials said, and the values derived from hunting are frequently too low to justify acquiring land; the result is inevitably an unsatisfactory level of mitigation. For example, BSF&W representatives said land which will be inundated by the Teton project provides the only unaltered winter habitat for up to 90 percent

of the deer in the Teton Basin. They contend that construction of the project, therefore, will essentially annihilate this herd--eliminating hunting opportunities not only in the project area but also in the entire Teton Basin as well.

It is of primary importance, according to BSF&W officials, to recognize that the value of having a quality environment extends beyond the value presently quantified in dollars and that no dollar evaluation now in use or in sight provides a reliable guide for deciding to destroy or damage any given environment. They maintain that decisions to damage any given habitat must not and cannot be made on the basis of only the value of hunting and fishing use generated by that area.

BSF&W officials stated that there are other values that should be considered, such as the potential of habitat to support wildlife and the quality of recreation experience. The officials also stated that the value of wildlife habitat, like many other basic resources, is relative. Its worth depends on its abundance, or scarcity and desirability, e.g., a mile of Georgia trout water might ordinarily have a greater value than a similar mile in Vermont. These values are considered "intangible values" because they are difficult to measure monetarily.

Wildlife officials stated that the failure to consider intangible values, such as habitat potential, has resulted in disappointing mitigation efforts, especially where big game is concerned. As a result, they believe that insufficient land has been acquired, developed, and administered specifically to mitigate wildlife losses.

Development agencies generally recognize that values other than fishing and hunting are important and should be considered. However, they seem to follow the policy described by the Corps in the fiscal year 1972 public works authorization hearings.

> "Until such times as an acceptable procedure or methodology for evaluating intangible habitat values has been approved, the Corps mitigation plans will be governed by the acquisition and development of only those lands needed to support the user days lost when mitigating project-induced fish and wildlife losses."

The Water Resources Planning Act of 1965 (42 U.S.C. 1962) established the Water Resources Council. The Council established "Principles and Standards for Planning Water and Related Land Resources." The new "Principles and Standards" which became effective October 30, 1973, replace Senate Document 97 as the official rules by which future water resource projects must be planned and executed. The new rules place greater emphasis on consideration of nonmonetary effects and environmental quality.

Problems in achieving wildlife enhancement

The act was amended in 1958 to provide that wildlife enhancement could be authorized as a purpose of water resource developments. The amended act provided for enhancing wildlife resources by authorizing their development and improvement, including the acquisition of lands for wildlife purposes. The Federal Water Project Recreation Act of 1965 (16 U.S.C. 460(i-13)), establishes cost-sharing criteria for enhancing wildlife at Federal water resource projects. It provides that, if non-Federal public bodies will bear not less than 50 percent of the separable costs of enhancement features, the Federal Government will provide the remaining construction funds. It does not allow Federal sharing in operation and maintenance costs.

Wildlife resources, however, have seldom been improved or developed at water resource developments. For example, of 103 Corps reservoir projects authorized since 1965, the Corps has recommended to the Congress wildlife enhancement measures (exclusive of recreation facilities) at only 4 projects. Three reasons for this low rate were described to us.

--Definitional problems. According to BSF&W and Corps representatives, defining the limits of enhancement at individual Corps projects has been a problem. Enhancement refers to "improvements" and suggests comparisons of wildlife values with and without the project over a projected future. Involved are questions of what constitutes improvement (e.g., reservoir fishing created versus stream fishing destroyed) and determination of when a loss prevention or mitigation measure becomes an enhancement measure. The differences are important, because enhancement involves cost sharing while costs of mitigation measures are assigned among all project purposes.

A related problem, according to BSF&W officials, is that BSF&W's policy prohibits enhancing one wildlife species to compensate for unmitigated project-caused losses to another species of wildlife (i.e., fish for big game). State wildlife agency representatives said they generally agree with this policy.

--Cost-sharing problems. Representatives of State wildlife agencies said they often object to being asked to share the costs of enhancement measures for projects where project-caused losses have not been adequately mitigated. Another reason, offered Oregon, is that the costs of enhancing anadromous fisheries should be borne by the Federal Government because anadromous fish substantially benefit areas outside the State's boundaries. Oregon estimates that 50 percent of the Coho and 80 percent of the Chinook salmon propagated in Oregon are harvested in the ocean by nonresident interests off California, Washington, and British Columbia.

--Funding problems. The inability of non-Federal interests to provide matching funds was cited by a Corps official as a reason for lack of enhancement measures.

MITIGATION MEASURES NOT ALWAYS RECOMMENDED ON SCS PROJECTS

BSF&W did not always recommend mitigation measures for SCS watershed projects. For example:

--BSF&W did not recommend replacing wildlife losses on the Lyon Swamp-White Oak project, even though the project destroyed 1,165 acres of wildlife habitat and reduced the per-acre fish-carrying capacity of the streams involved from 122 pounds to 58 pounds in the lower end and to 1 pound in the upper end.

--BSF&W did not recommend replacing wildlife losses on the Swift Creek Watershed project in North Carolina, even though the project will reportedly destroy 161 acres of hardwood swamps, 1,130 acres of upland hardwood, 16 acres of good quality fishery habitat, and seriously impair 469 additional acres of hardwood swamps.

Section 12 of the Watershed Protection and Flood Prevention Act, which governs wildlife coordination for SCS small watershed projects, provides that improvements recommended by BSF&W for wildlife purposes shall be included in the work plan if they are "technically and economically feasible" and if they are "acceptable to" and "agreed to" by both the SCS and local sponsors.

However, SCS officials told us that decisions on mitigation measures rest with local sponsors which are reluctant to pay for the measures; therefore, BSF&W is reluctant to develop them.

BSF&W officials advised us that, because of its manpower and funding situation, it must assign priorities on work to be done. Since local sponsors are reluctant to accept BSF&W recommendations, SCS projects have been given a low priority. BSF&W is not ready to commit a large expenditure (BSF&W must finance studies of SCS projects according to section 12) when the results are doubtful.

Although the Watershed Protection and Flood Prevention Act does permit Federal sharing of design and facility construction costs, it does not in most cases provide for Federal sharing in the cost of acquiring lands to mitigate project-induced wildlife losses. Both BSF&W and SCS officials said it would be easier to induce local sponsors to acquire wildlife mitigation land on small watershed projects if the Federal Government shared the acquisition cost.

WILDLIFE CONSERVATION RECOMMENDATIONS SHOULD BE JOINTLY PLANNED

The step in the coordination process which follows decisions about the disposition of wildlife mitigation and enhancement recommendations is the preparation of plans for incorporating accepted measures into the overall project development plan.

Section 3(b) requires that the use of lands, water, or interests for wildlife conservation shall be in accordance with general plans. The plan is to be approved jointly by the development agency, the State wildlife agency, and the Department of the Interior. The agencies prepare documents called general plans, but, rather than containing wildlife

management plans, they are simply agreements outlining lands to be managed for wildlife and specifying the managing agency. Joint wildlife management plans are generally not prepared for water resource developments except the ones the Federal Power Commission (FPC) licenses.

FPC requires joint planning of wildlife conservation measures for utility projects subject to its licensing. Wildlife agencies' officials said FPC's licensed projects are better coordinated than Federal resource developments because FPC's licensing procedures

--encourage the utilities and wildlife agencies to work out mutually acceptable wildlife mitigation plans through negotiation,

--reduce agreements reached on wildlife matters to a wildlife mitigation plan--called exhibit S--which is made a part of the licensing, and

--provide a basis for enforcing agreements through public hearings.

A key factor in the coordination between utilities and wildlife agencies appears to be exhibit S. FPC ordered the exhibit to be prepared in 1966 to help expedite the processing of license applications and to make FPC's compliance with the act easier. When the requirement for the exhibit was first announced, FPC solicited comments and received wide approval from interested parties. Of 32 respondees to FPC's request, 23 expressed unqualified approval, 8 generally supported the concept, and only 1 utility objected to it.

Exhibit S provides a way to insure full coordination between utilities and wildlife agencies because it must be prepared on the basis of studies made after consultation and in cooperation with wildlife agencies; also, because it is made part of the license, later misunderstandings about agreements are minimized.

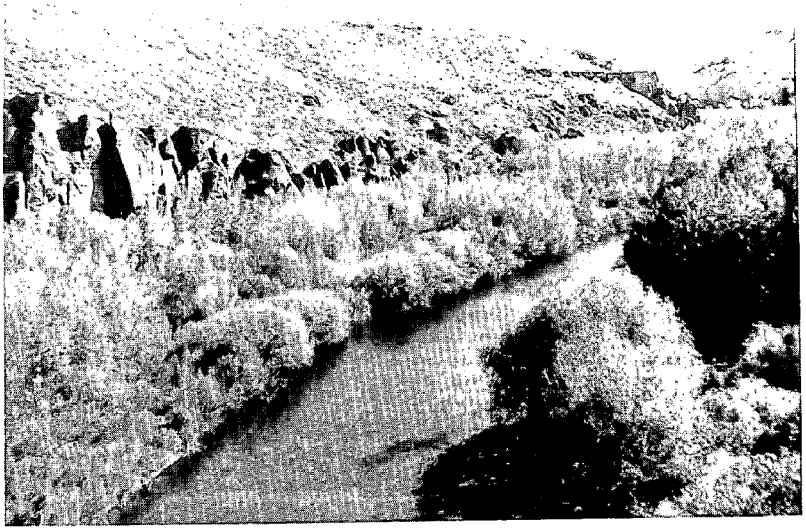
We believe that a similar procedure for the joint planning of mitigation and enhancement measures by the development and wildlife agencies would help enhance the effectiveness of the wildlife management plans.

FOLLOWUP NECESSARY TO DETERMINE WHETHER ACCEPTED WILDLIFE CONSERVATION MEASURES ARE BEING IMPLEMENTED

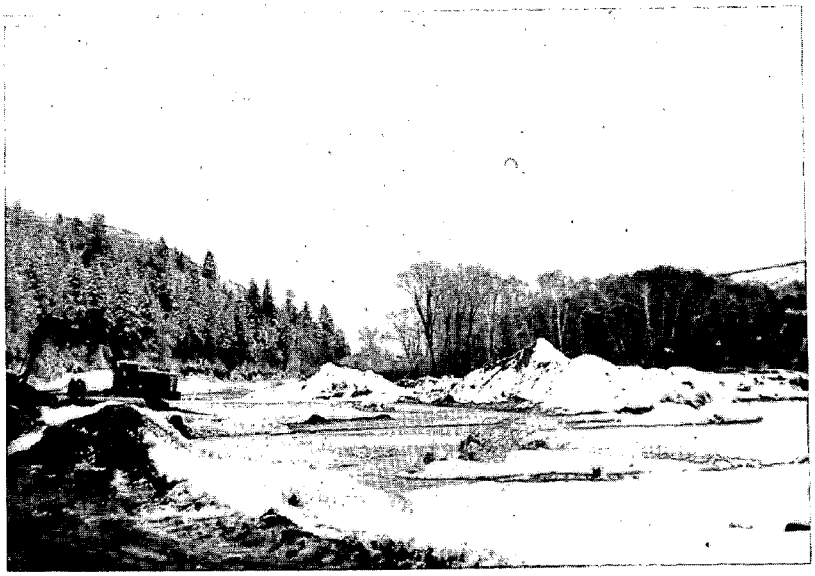
When water resource project plans are being implemented, a last step in the coordination process should involve followup by the wildlife agencies to help insure that the development agencies are adequately providing for the wildlife conservation measures they accepted. Wildlife agencies should, during project design, construction, and operation, determine whether (1) recommendations have been accepted, (2) accepted recommendations have been implemented, (3) recommendations have proved to be biologically sound and effective, (4) additional measures for wildlife conservation should be incorporated into the development, and (5) lessons learned can benefit future developments.

Generally, BSF&W did not follow up on the projects or permits we reviewed. BSF&W representatives, however, while conducting a review of another project, did discover a number of conditions which they considered inadequate in the construction of the Teton project. For instance, an access road was being built along the Teton River below the project site rather than along the canyon rim where wildlife officials understood it would be constructed. These conditions were reported to Bureau of Reclamation officials and some corrective action was taken. (See photographs on pp. 37 and 38 for illustration of the damages caused by this road construction.)

BSF&W procedures call for, and its officials recognize the value of, determining whether adequate provisions are made for wildlife conservation on both projects and permits. However, BSF&W officials told us such followups had seldom been made. BSF&W had made only three such followups in its western region--region 1--and four in its southeastern region--region 4--since January 1966. BSF&W officials explained that more followups have not been made because of a lack of staff and funds.

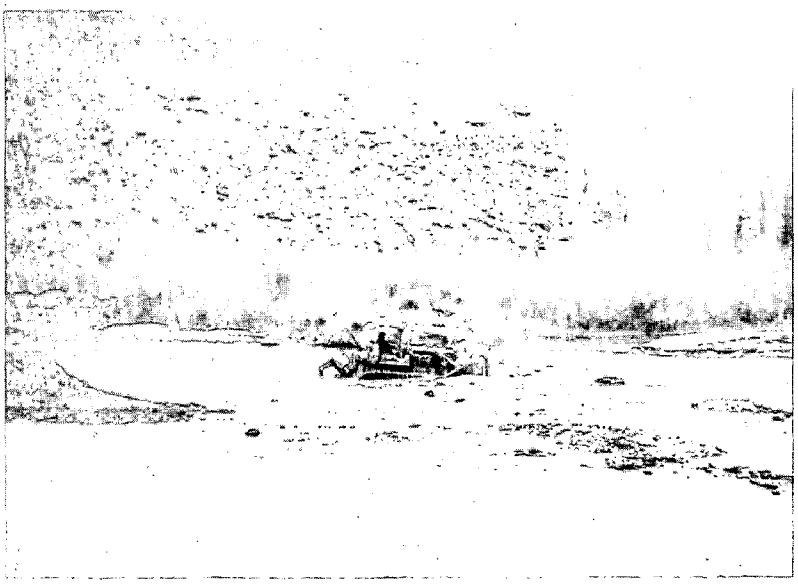


Native condition of Teton River and adjacent wildlife habitat at the location of proposed access road construction.



Piles of excavated material and other habitat disturbances resulting from access road construction below the Teton Dam site. Wildlife officials wanted the road located above the canyon rim to prevent covering the shoreline habitat, destroying fish spawning gravels, and causing downstream siltation in the river.

BSF&W photographs



Bulldozer working in the Teton River. BSF&W officials questioned whether this section of river will ever regain its original quality.

Excavated material lining banks of relocated Teton River below the Teton Project site has begun to collapse into the river causing mud and silt to wash downstream. Note dragline in foreground dredging original channel. River was relocated to make room for access road.

BSF&W photographs

NEED FOR THE WILDLIFE AGENCIES TO AGREE ON COORDINATION ROLES AND RESPONSIBILITIES

Wildlife agencies should coordinate their activities to insure that their full expertise and capabilities are made available to the development agencies.

Before 1970, the Fish and Wildlife Service's Bureau of Commercial Fisheries (BCF) and BSF&W carried out their roles in implementing the act by working within their respective functional areas. These functional areas, established by the Fish and Wildlife Act of 1956 (16 U.S.C. 742a) and refined by the Department of the Interior Reorganization Memorandum No. 12 (Oct. 6, 1958) and No. 20 (Sept. 8, 1959), gave BSF&W primary investigating and reporting responsibility, while BCF remained an advisor to BSF&W on matters concerning commercial fisheries. BCF had sole responsibility for investigating fishery aspects of developments proposed in the Columbia River Basin, but BSF&W had primary reporting responsibility for fish and wildlife. BCF had field responsibility for investigating and reporting on fish and wildlife aspects of developments in Alaska. Reorganization Plan No. 4 of 1970, however, transferred some of the Service's functions from the Department of the Interior to the Department of Commerce.

The wildlife reports for the projects reviewed were prepared in accordance with the arrangement in effect before the reorganization plan.

Impact of Reorganization Plan No. 4 on the Fish and Wildlife Service's functions

The reorganization plan, which was designed to consolidate Federal resources concerned with the problems of the oceans and the atmosphere, transferred BCF's activities and BSF&W's Marine Sport Fishery Program to Commerce's newly created National Oceanic and Atmospheric Administration (the parent agency of NMFS). However, the plan did not address those functions vested in the Fish and Wildlife Service and shared jointly by both BCF and BSF&W under the act.

The effect has been to divide into two departments the Federal responsibility for reporting in two areas of fish and wildlife resources. The first area involves anadromous fish which spend part of their life cycle in freshwater and another part in saltwater; the second involves the fishery resources in the coastal or estuarine zone.

At a March 1972 meeting, the Board agreed that a small task force, composed of field office officials from BSF&W and NMFS, would be established for the Columbia River Basin to identify areas of disagreement, delineate the role of each department, and recommend procedures to promote and insure cooperation. Because of the task force recommendations, the regional directors for both agencies in the Northwest entered into an agreement for the Columbia River Basin in July 1972. The agreement provided, among other things, that BSF&W and NMFS proceed to independently conduct investigations and prepare separate reports. However, the Department of the Interior rejected the agreement because it wanted to retain responsibility for preparing the wildlife reports.

Recently NMFS has initiated certain actions, independent of BSF&W, that ultimately will enable it to fully assume its investigating and reporting responsibilities. Following are some of these actions.

1. NMFS has informed the water resource planning and development agencies of its desire to be notified of all projects, permits, and licenses in the marine, estuarine, and anadromous fish areas.

2. NMFS regional directors have contacted agency counterparts to develop working arrangements ultimately leading to memorandums of understanding between the Department of Commerce and the development agencies.

3. Each NMFS regional director has made interim arrangements with his counterpart in BSF&W for the coordinated review of Federal water resources projects and permits until NMFS obtains full staffing and funding.

BSF&W maintains that under the reorganization all investigating and reporting responsibilities under the act, including those in the anadromous fish and estuarine areas, remain within the Department of the Interior. NMFS argues that BCF's roles and responsibilities under the act were transferred to Commerce at the time of the reorganization along with its scientific and technical expertise in the marine, estuarine, and anadromous fisheries areas.

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3. Each NMFS regional director has made interim arrangements with his counterpart in BSF&W for the coordinated review of Federal water resources projects and permits until NMFS obtains full staffing and funding.

NMFS has contacted the development agencies and, although agreements have not been made, NMFS officials are optimistic that some type of interim arrangements will be made.[1] They have stated, however, as have development agency officials, that any memorandums of understanding will ultimately have to include BSF&W as a third party.

Implementation of current legislation in the permit area indicates a greatly expanded role for BSF&W and NMFS. Section 402 of the Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1151) transferred the Corps' authority to issue permits for discharges into navigable

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[1] On Oct. 5, 1973, NMFS and the U.S. Forest Service entered into a Memorandum of Understanding.

waters to the Administrator of the Environmental Protection Agency (EPA). This transfer resulted in increased emphasis being placed on this permit program. EPA officials have stated that by December 1974 they will have issued public notices on about 61,000 pending and probable applications for discharge permits.

An agreement worked out in May 1973 between interested Federal agencies interprets the Fish and Wildlife Coordination Act to apply to the section 402 permits. Both BSF&W and NMFS will have an opportunity to review and comment on all permit applications. Wildlife agencies have 30 days to review and comment to EPA on the permit applications and can request time extensions.

According to wildlife agency officials, this new program responsibility was assumed without a corresponding immediate increase in funds and manpower. After the initial backlog of applications is processed, these officials expect a workload of about 15,000 applications a year.

- - - -

NMFS' recent actions, without benefit of agreement with BSF&W concerning respective roles and responsibilities in the estuarine and anadromous fish areas, are a potential source of confusion to Federal development agencies, State wildlife agencies, and permit applicants. This factor, when considered along with (1) the wildlife agencies' views on the need for additional funds and staff and (2) the backlog of section 402 permit applications requiring review and comment, makes resolving the differences between NMFS and BSF&W of utmost importance.

CHAPTER 3

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

For the 28 developments reviewed, the act's requirement to consider wildlife conservation equally with other development features had not been effectively carried out. To achieve equal consideration, more effective implementation of the act's coordination process is necessary. To have an effective coordination process, procedures should be established and actions taken to require that:

--Wildlife agencies should continually be consulted during, and actively participate in, project planning and decisionmaking before project authorization and on planned project modifications after authorization.

--Wildlife studies of projects and permits should be detailed enough to evaluate their individual and cumulative wildlife effects; otherwise, ways to prevent or replace losses, lessen damages, or enhance wildlife cannot be adequately determined or justified.

--Recommendations for wildlife conservation should clearly specify the mitigation and enhancement measures to be taken.

--Reports on wildlife studies should be furnished before developments are approved so that wildlife conservation measures can be planned concurrently with other project purposes and so that decisionmakers, including the Congress, can base their approval actions on full knowledge of wildlife consequences.

--Wildlife and development agencies should agree on criteria for determining and justifying the mitigation and enhancement measures necessary to insure that conservation plans are adequate.

--Wildlife enhancement possibilities for federally funded projects should be identified and reported

by wildlife agencies regardless of mitigation disputes, anticipated funding difficulties, or objections by State or local project sponsors, so that the Congress and other approval authorities can consider them.

--The development agency, together with wildlife agencies, should prepare a general plan for implementing recommended wildlife conservation measures. The plan, which would be included in project authorization documents, would help insure full consideration of the recommendations and their effective implementation during project design, construction, and operation.

--Wildlife agencies should follow up after plan approval to determine whether adequate provisions have been made for wildlife during a project's design, construction, and operation.

Coordination procedures should also specify how each step in the planning, decisionmaking, and action process for wildlife conservation is to be integrated with these same steps for other development features. So that the needs of both wildlife and development agencies can be fully understood and adequately considered, coordinating agencies should jointly establish the procedures.

Reorganization Plan No. 4 of 1970 divided the functions of the Fish and Wildlife Service so that they are now vested in two agencies--BSFW in the Department of the Interior and NMFS in the Department of Commerce. However, the Reorganization Plan did not clearly define the coordination roles and responsibilities of the two agencies and interdepartmental efforts to reach agreement on them have been unsuccessful. Until the roles and responsibilities are clearly defined and agreed upon, we believe that duplication of effort and omissions of work can occur because some functions overlap, neither agency claims to have had the resources to do all the work, and each agency maintains, in certain instances, to have primary responsibility for wildlife consultation and reporting on water resource developments.

Also, establishing criteria to better determine the mitigation or enhancement measures for water resource developments should help resolve agency differences that affect

decisions on the levels of wildlife conservation expenditures needed and whether wildlife enhancement should be included as a project purpose.

Wildlife officials frequently cited inadequate funding and staffing as reasons for breakdowns in the coordination process. Funding and staffing, therefore, are matters which we believe the Secretaries of Commerce and the Interior should consider for improving implementation of the act.

The Office of Management and Budget (OMB) is responsible for insuring that Federal agency programs are effectively coordinated and that funds are spent most economically with the least amount of duplication. OMB should, therefore, assist the wildlife agencies in agreeing on their coordination roles and responsibilities and assist the wildlife and development agencies in establishing criteria for determining mitigation and enhancement measures.

RECOMMENDATIONS TO THE SECRETARIES OF THE ARMY, COMMERCE, AND THE INTERIOR

We recommend that:

--The Secretaries of the Army, Commerce, and the Interior, with the advice of State wildlife agencies, establish (1) procedures to be jointly observed by their agencies in implementing a coordination process for carrying out the requirements of the act and (2) criteria for determining the justification of the mitigation or enhancement measures for water resource developments.

--The Secretaries of Commerce and the Interior should (1) seek an agreement on their wildlife agencies' respective roles and responsibilities for the coordinated review of Federal water resource projects and permits and (2) initiate efforts to obtain the funds and personnel needed to effectively implement the act's requirements.

RECOMMENDATION TO THE DIRECTOR, OMB

Because of OMB's role in promoting efficient, economical, and effective Government operations, we recommend that the

Director, OMB, actively participate with the wildlife and development agencies in reaching agreement on (1) coordination roles and responsibilities, (2) procedures for implementing the act, and (3) criteria to be used in determining the wildlife mitigation and enhancement measures.

CHAPTER 4

COMMENTS ON PROPOSED LEGISLATION

House bill 10651, introduced in the first session of the 93d Congress, would amend several aspects of the Fish and Wildlife Coordination Act. House bill 10651 would:

--Require any development agency proposing a water resource development to obtain a written report from the wildlife agencies setting forth their views, comments, objections, and recommendations on the development. Such reports shall specify the measures and features recommended for wildlife conservation and development, the lands to be used or acquired for such purposes, the results expected, the damage to wildlife attributable to the projects, and the measures proposed for mitigating or compensating for such damages.

Pages 15 to 27 of this report discussed the need for such reports to be developed through better consultation between agencies, more detailed studies of wildlife effects, more specific wildlife recommendations, and completion of wildlife reports in time for them to be used for project approval purposes.

--Provide that a project not be carried out, financed, or authorized until wildlife agencies have written the development agency that they are satisfied that each recommendation to prevent or mitigate wildlife losses is adequately provided for before or concurrently with, project development, unless the head of the development agency specifies his reasons, in writing, that adopting the recommendations would be contrary to the public interest. The bill also states that, to the greatest extent possible, recommendations for enhancing wildlife resources shall be adopted.

Pages 32 to 36 of this report discuss (1) problems in achieving wildlife enhancement, (2) the need for wildlife and development agencies to jointly plan the implementation of wildlife conservation recommendations, and (3) the need for wildlife agencies to follow up on their recommendations to determine whether accepted wildlife conservation measures are being implemented.

--Prohibit any development agency from requiring solely monetary estimates of wildlife losses as justification for adopting wildlife recommendations. Pages 29 to 33 of this report discuss the need for wildlife and development agencies to jointly establish criteria for determining the wildlife mitigation and enhancement measures to be taken.

--Specifically provide that development agencies consult with the National Oceanic and Atmospheric Administration and BSF&W on the wildlife aspects of projects. Pages 39 to 42 of this report discuss the need for Commerce and the Interior to agree on their respective wildlife agencies' coordination roles and responsibilities.

--Repeal section 12 of the Watershed Protection and Flood Prevention Act, which provided separate and different coordination requirements for SCS small watershed projects, and include SCS projects under the Fish and Wildlife Coordination Act.

Page 6 of this report discusses the differences in the coordination requirements under the two acts and pages 33 and 34 discuss problems in obtaining mitigation on SCS projects.

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March 16, 1972

Honorable Elmer B. Staats
Comptroller General of the United States
General Accounting Office
441 G Street, N. W.
Washington, D. C. 20548

Dear Mr. Staats:

The Fish and Wildlife Coordination Act of 1958, as amended, states that fish and wildlife conservation shall receive equal consideration with other project purposes and be coordinated with other features of water-resources development programs. Adverse effects on fish and wildlife resources and opportunities for their improvement are to be examined along with other purposes which might be served by water resource developments.

Section 2 of the Act provides that prior to undertaking any water resources project, the responsible agency shall first consult with the U.S. Fish and Wildlife Service, Department of the Interior, and with the head of the agency administering the wildlife resources of the State wherein the project is to be carried out in order to conserve and protect wildlife resources as well as to provide for their development and improvement.

Section 3 provides whenever a project is to be carried out by any Federal agency, adequate provision shall be made, consistent with the primary purposes of the project, for the use thereof, together with any areas acquired or administered by such agency in connection therewith, for the conservation, maintenance and management, and improvement of the wildlife resources thereof and its habitat thereon. Section 3 also

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provides that land and waters may be acquired by Federal construction agencies for wildlife conservation and development in connection with a project, provided that prior to such acquisition, a report is submitted to Congress describing the extent of the acquisition.

I would like your office to examine into the manner in which Sections 2 and 3 of the Act are being implemented by the Department of the Army, Corps of Engineers (Civil Functions), Department of Agriculture, the Department of the Interior, and the Department of Commerce (NOAA Functions) and to furnish the Subcommittee a report on the results of your review.

Sincerely,

John D. Dingell, Chairman
Subcommittee on Fisheries
and Wildlife Conservation

AGENCIES AND PROGRAMS SELECTED FOR REVIEW AND LOCATIONS VISITED

DEVELOPMENT AGENCIES:

Bureau of Reclamation, Department of the Interior:

Construction and Rehabilitation Program:
- Office of the Commissioner of Reclamation, Washington, D.C.
- Pacific Northwest Region, Boise, Idaho

Corps of Engineers, Department of the Army:

Civil Works Program:
- Office of the Chief of Engineers, Washington, D.C.
- North Pacific Division Office, Portland, Oregon
- Portland District Office, Portland, Oregon
- Walla Walla District Office, Walla Walla, Washington
- New Orleans District Office, New Orleans, Louisiana
- Wilmington District Office, Wilmington, North Carolina

Federal Power Commission:

Non-Federal Hydroelectric Power Licensing Program:
- Headquarters, Federal Power Commission, Washington, D.C.

Soil Conservation Service, Department of Agriculture:

Watershed projects (Public Law 83-566):
- Office, Deputy Administrator for Watershed, Washington, D.C.

State office:
- Soil Conservation Service, Raleigh, North Carolina

APPENDIX II

WILDLIFE AGENCIES:

Bureau of Sport Fisheries and Wildlife, Department of the Interior:
- Headquarters, Washington, D.C.
- Region 1 office, Portland, Oregon
- Portland area office, Portland, Oregon
- Boise area office, Boise, Idaho
- Region 4 office, Atlanta, Georgia
- Vicksburg area office, Vicksburg, Mississippi
- Lafayette area office, Lafayette, Louisiana
- Raleigh area office, Raleigh, North Carolina

National Marine Fisheries Service, Department of Commerce:
- Headquarters, Washington, D.C.
- Northwest regional office, Seattle, Washington
- Columbia Fisheries Program Office, Portland, Oregon
- Boise area office, Boise, Idaho
- Southeast regional office, St. Petersburg, Florida
- Beaufort area office, Beaufort, North Carolina

States:
- Idaho Fish and Game Department, Boise, Idaho
- Oregon Fish Commission, Portland, Oregon
- Oregon Game Commission, Portland, Oregon
- Washington Fish Department, Olympia, Washington
- Louisiana Wildlife and Fisheries Commission, New Orleans, Louisiana
- North Carolina Wildlife Resources Commission, Raleigh, North Carolina (Game Division and Fish Division)

WATER RESOURCE DEVELOPMENTS SELECTED FOR REVIEW

Development	Basin and location	Approval date and status as of 7-73	Features
Bureau of Reclamation project:			
Lower Teton Dam and Reservoir	Columbia River, Idaho	1964 (under construction)	Irrigation, power, flood control, and recreation
Corps of Engineers projects:			
Dworshak Dam and Reservoir	Columbia River, Idaho	1962 (under construction)	Power, flood control, navigation, and recreation
Gate Creek Dam and Reservoir	Columbia River, Oregon	1962 (construction not started--low Corps priority)	Flood control, irrigation, and navigation
Randleman Lake Dam and Reservoir	Cape Fear River, North Carolina	1968 (design)	Flood control, water supply, water quality and sedimentation
New Hope Dam Reservoir	Cape Fear River, North Carolina	1963 (under construction but portions stopped by court order)	Flood control, water supply, water quality control, and recreation
Atchafalaya River, Bayous Chene, Beouf and Black (Atchafalaya)	Lower Atchafalaya River, Louisiana	1968 (final design)	Navigation
SCS projects:			
Flea Hill Watershed	Cape Fear River, North Carolina	1966 (completed)	Land treatment, flood control, and drainage
Lyon Swamp-White Oak	Cape Fear River, North Carolina	1964 (completed)	Flood and erosion protection
Swift Creek Watershed	Neuse River, North Carolina	1969 (final design)	Flood prevention and drainage
Little Contentnea Creek Watershed	Neuse River, North Carolina	1966 (construction not started because of court order)	Flood control, agricultural water management, and land treatment
Upper Bay River Watershed	Neuse River, North Carolina	1970 (construction not started because of court order)	Flood control and land treatment
17 Corps of Engineers Permits	Lower Atchafalaya River, Louisiana	Fiscal year 1971 and 1972 (some completed, others in process)	14 permits for construction of access to oil and gas sources, 2 permits for construction of bulkheads, and 1 permit for construction of a wharf

APPENDIX IV

ESTIMATES OF BSF&W-NMFS WORKLOAD, FUNDING, AND MANPOWER NEEDS FOR FISH AND WILDLIFE COORDINATION ACT AND RELATED ENVIRONMENTAL WORK

BSF&W's and NMFS' Washington headquarters personnel developed the information contained in this appendix without our verifying it. Agency statements and estimates did not receive official departmental review.

BUREAU OF SPORT FISHERIES AND WILDLIFE

The Fish and Wildlife Coordination Act authorizes transfers of funds to the wildlife agencies from development agencies to make wildlife studies under the act. Historically, funds received from these sources have been used exclusively for preauthorization and postauthorization studies of major Corps and Bureau of Reclamation projects, a limited number of navigation projects, and small flood control works.

Such transfer funds, however, have not been available for those program areas which have experienced the most rapid growth. The program areas include BSF&W involvement in (1) Corps section 10 permits, (2) EPA's pollutant discharge permits, (3) Atomic Energy Commission (AEC) nuclear power investigations, (4) SCS' small watershed program, and (5) environmental statements prepared under the National Environmental Policy Act. These rapidly growing program areas have been financed from funds appropriated directly to BSF&W. Funds derived from this direct source, until recently, could not be increased markedly and were relatively static through the 1960s. BSF&W, therefore, has been faced with a rapid expansion in workload which had to be financed from a fund base that did not keep pace with the expanding needs of the program.

Also, BSF&W personnel ceiling needs have had to be met entirely from the Interior sources. Despite the substantial sums of money available from transfer funds, no personnel ceilings are transferred with those funds and this lack of manpower authorizations has greatly inhibited the requests for transfer funds over the years and prevented a desirable expansion of the overall program.

Stringencies in funds and manpower also have not permitted compilation of environmental baseline or basic habitat data studies essential for adequate compliance with the Coordination Act and the National Environmental Policy Act. Specifically, this means that environmental data is far substandard to other project data on hydrology, engineering, geology, economics, etc. Such an imbalance can conceivably no longer be tolerated under the new Water Resources Council Principles and Standards which elevate environmental factors to a level equal to national and regional economic factors in project formulation and evaluations. Substantial increases in funds and manpower are essential to carry out BSF&W expanded responsibilities under the new Principles and Standards.

NATIONAL MARINE FISHERIES SERVICE

Within NMFS, the Division of Water Resources Management now carries out Coordination Act responsibilities with its present authorized ceiling of 69 people. It also has responsibility for the environmental statement review program, plus heavy staff workloads related to review of:

--water quality criteria;

--effluent guidelines;

--various guidelines, regulations, and policies of EPA, AEC, and other Federal agencies;

--participation in special studies related to oil and gas leasing on the outer continental shelf;

--studies of offshore nuclear powerplants;

--activities related to the Water Resources Planning Act;

--coordination with BSF&W on guidelines and procedures;

--and a wide variety of other duties relating to environmental matters.

NMFS started its program from a low base of funds and manpower. Programs and staffs in the Columbia River Basin and

Alaska provided a nucleus in the western regions. Although those, in general, are better staffed in relation to workload, a severe deficiency remains. However, the eastern regions have the most massive workloads, hence the most severe over commitment.

In the eastern regions, it has been possible to accomplish environmental statement reviews but only a fraction of the necessary studies of section 10 permit applications. There has been only nominal involvement with planning of the major Federal projects, very limited involvement with FPC licenses, and almost none with nuclear power projects. Few of the 61,000 pending and probable National Pollutant Discharge Elimination System permits, which need intensive study, can be given adequate attention, nor can other permit programs.

The size of the workload substantially exceeds NMFS manpower capabilities. It is particularly urgent that NMFS expand its activities in the coastal zone with special reference to both commercial and sport species.

Constant surveillance, evaluation, and study are essential to perpetuation of the irreplaceable estuarine and coastal aquatic habitats. Proposed Federal and private developments threaten irreversible losses of these public resources. The one chance to prevent such destruction is when the permit application is reviewed. Also, as long as the resource exists, a new threat can arise at any time with a new permit or construction proposal. The recovery of living natural resources made possible by the cleanup of pollution, must not be offset by destruction of the remaining natural marshes and other estuarine habitat.

BSF&W AND NMFS WORKLOAD STATISTICS

FOR PERMITS, FEDERAL PROJECTS, AND OTHER STUDIES

	Fiscal year 1970	Fiscal year 1971	Fiscal year 1972	Fiscal year 1973		Fiscal year 1974 (estimated)	
				NMFS	BSF&W	NMFS	BSF&W
	(number)						
PERMITS:							
Corps (navigable waters) (note a)	5,042	5,660	8,000	7,500	12,000	17,000	17,000
EPA, ocean dumping (note b)	-	-	-	13	-	500	500
EPA, NPDES (note c)	-	-	-	1,000	1,000	20,000	20,000
Other permits (note d)	120	125	80	300	110	300	120
PROJECTS AND OTHER STUDIES:							
Corps projects	127	197	171	299	310	300	300
Reclamation and other projects	80	43	54	39	117	40	120
Comprehensive studies	9	9	6	9	6	14	8
Special studies	11	34	27	50	50	50	60
EIS reviews (note e)	-	200	350	496	500	600	900
Total	5,389	6,268	8,688	9,706	14,093	38,804	39,008

[a]Applications for permits under section 10 of 1899 Rivers and Harbors Act and section 404 of Federal Water Pollution Control Act.

[b]Section 101 and 102 of Marine Protection, Research, and Sanctuaries Act (Ocean Dumping).

[c]National Pollutant Discharge Elimination System, administered by EPA or State. Estimated total number of applications and probable applications for initial permits is about 61,000 according to telephoned information from EPA. (Estimated 7,000 Public Notices issued by January 1, 1974, 20,000 to be issued by June 30, 1974, and 61,000 to be issued by December 31, 1974.)

[d]Includes the Bureau of Land Management, Forest Service, Bureau of Indian Affairs, FPC, and AEC permits and licenses. (For NMFS, includes miscellaneous studies for other agencies.)

[e]Review of environmental impact statements required by the National Environmental Policy Act of 1969.

BSF&W AND NMFS FUNDING FOR

WILDLIFE INVESTIGATION AND REPORTING

ON FEDERAL PROJECTS AND PERMITS

Fiscal year	BSF&W funds				NMFS funds			Grand Total
	Direct	Transfer (note a)	Other (note b)	Total	BSF&W Transfer (note c)	Direct	Total	
	(000 omitted)							
1970	$1,768	$2,014	$509	$4,291	$ -	$ -	$ -	$4,291
1971	2,193	2,009	495	4,697	275	433	708	5,130
1972	3,394	1,711	524	5,629	275	433	708	6,062
1973	4,614	2,253	668	7,535	275	704	969	8,239
1974 (note d)	4,343	2,425	691	7,459	-	1,452	1,452	8,911

[a]The Coordination Act authorizes Federal development agencies to transfer funds for wildlife studies.

[b]Reimbursable funds for Comprehensive River Basin and other special studies.

[c]Amounts shown are included in BSF&W total.

[d]Estimated.

BSF&W AND NMFS MANPOWER FOR WILDLIFE INVESTIGATION AND REPORTING ON FEDERAL PROJECTS AND PERMITS

Fiscal year	Personnel BSF&W	Personnel NMFS	Total
1970	233	[a]25	258
1971	271	30	301
1972	291	30	321
1973	333	59	392
1974	342	69	411

ESTIMATED PERSONNEL NEEDED FOR FISCAL YEAR 1974 WORKLOAD

	Actual	Estimated need	Additional needed
NMFS	69	267	198
BSF&W	342	750	408
Total	411	1,017	606

[a]Before fiscal year 1971, BSF&W financed a staff of about 25 people, which the Bureau of Commercial Fisheries maintained for reporting on Federal projects and permits.

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