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NATIONAL WILDLIFE REFUGE SYSTEM

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BEFORE THE
SUBCOMMITTEE ON THE ENVIRONMENT
OF THE
COMMITTEE ON COMMERCE
UNITED STATES SENATE

NINETY-FOURTH CONGRESS

FIRST SESSION

ON

S. 1268

TO ESTABLISH CONGRESSIONAL POLICY DIRECTION FOR THE ADMINISTRATION AND MANAGEMENT OF THE NATIONAL WILDLIFE REFUGE SYSTEM; TO ESTABLISH THE "NATIONAL WILDLIFE REFUGE SERVICE"; TO PROVIDE AUTHORITY FOR STUDY, REVIEW, AND ESTABLISHMENT OF ADDITIONAL UNITS OF THE NATIONAL WILDLIFE REFUGE SYSTEM, AND FOR OTHER PURPOSES

H.R. 5608

TO EXTEND UNTIL THE CLOSE OF 1983 THE PERIOD IN WHICH APPROPRIATIONS ARE AUTHORIZED TO BE APPROPRIATED FOR THE ACQUISITION OF WETLANDS, TO INCREASE THE MAXIMUM AMOUNT OF SUCH AUTHORIZATION, AND FOR OTHER PURPOSES

SEPTEMBER 22 AND OCTOBER 3, 1975

Serial No. 94-40

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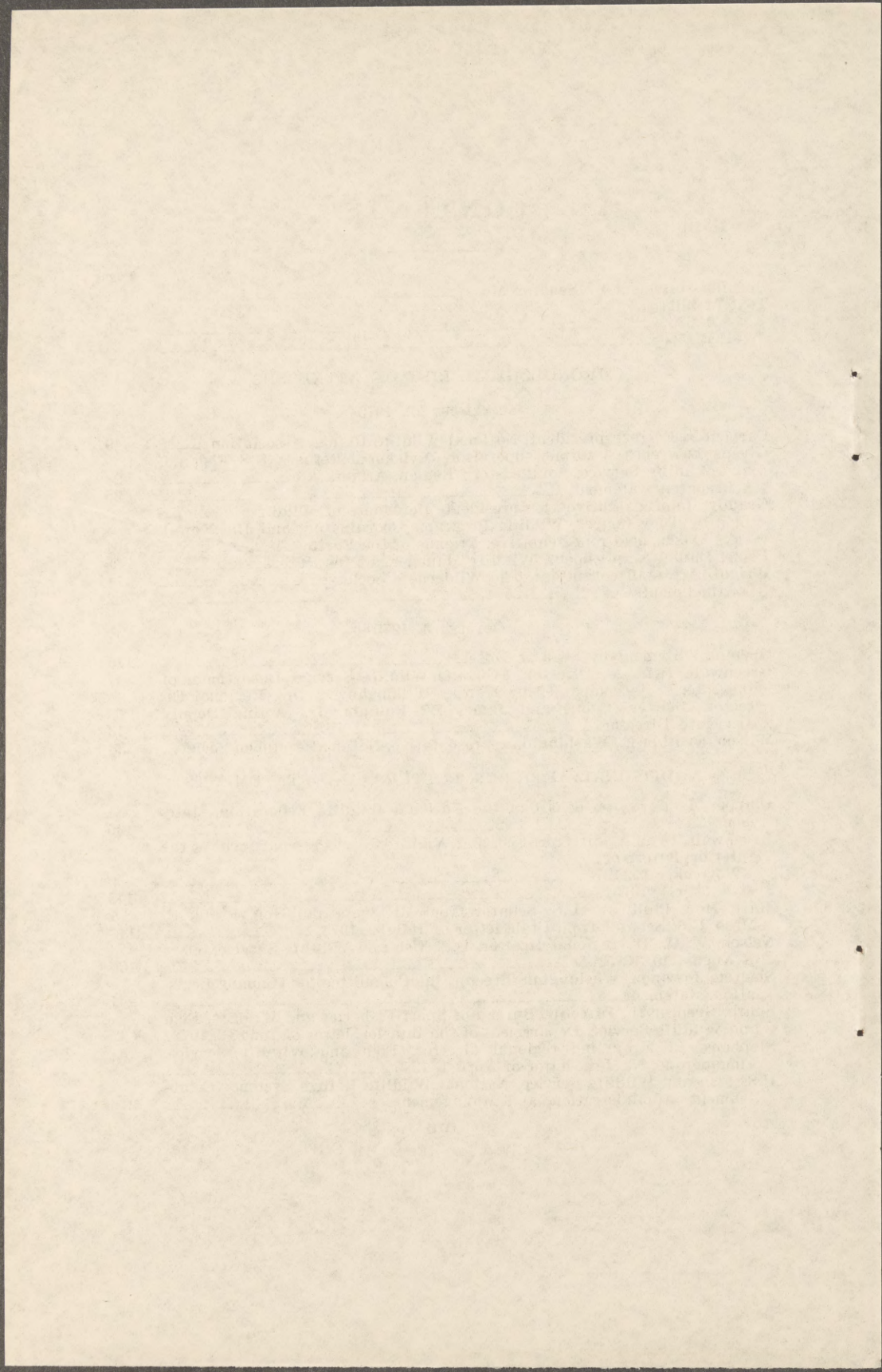
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NATIONAL WILDLIFE REFUGE SYSTEM

MONDAY, SEPTEMBER 22, 1975

U.S. SENATE,
COMMITTEE ON COMMERCE,
SUBCOMMITTEE ON THE ENVIRONMENT,
Washington, D.C.

The subcommittee met at 10 a.m. in room 5110 of the Dirksen Office Building; Hon. Frank E. Moss presiding.

OPENING STATEMENT BY SENATOR MOSS

Senator Moss. The hearing will come to order.

This morning the Subcommittee on the Environment will hold the first of 2 days of oversight hearings in the administration of the National Wildlife Refuge System by the U.S. Wildlife Service of the Department of the Interior. We will also be taking testimony on two bills, S. 1268 and H.R. 5608.

Since its inception over 70 years ago the refuge system has grown from a tiny 4-acre nesting habitat for brown pelicans on the east coast of Florida to a mammoth system of over 32 million acres which provides sanctuary for several thousand wildlife species in virtually every State.

Despite its formidable size which, by the way, exceeds that of the national park system, the National Wildlife Refuge System has not to date received the public attention befitting the Federal Government's most comprehensive wildlife conservation program.

More critically, some claim that the system has not received adequate support from the Congress and its parent agency, the Department of Interior.

As a result of this lack of attention, the refuge system is in trouble, serious trouble. Perhaps the most glaring illustration of its woes is the critical lack of funding and personnel from which the system now suffers.

It has been estimated that for the refuges to operate at a base maintenance and operation level consistent with that of 1970, \$27.1 million in operation and maintenance funds would be required. The refuge O. & M. funding level for fiscal 1974 and fiscal 1975, however, was only \$20 million a year and fiscal 1976 level is expected to be about the same.

Backlogs on facility rehabilitation is presently estimated to be \$83 million. Lack of maintenance of facilities has had a devastating effect on the operation and public perception of refuges. In the words of the Fish and Wildlife Service, Director Lynn A. Greenwalt, "Public buildings have become public eyesores. Employees are forced to work

Staff member assigned to these hearings : Michael B. Brownlee.

with outmoded, inefficient equipment. * * * Public use facilities such as roads, signs, both launch ramps and parking areas have deteriorated. These factors have generated a negative image to the general public on how well the Fish and Wildlife Service is conserving their wildlife."

In recent years the Service has been given additional legislative mandates by the Congress, including the Endangered Species Act, and the Alaska Native Claims Settlement Act. The Service has also undertaken an energetic new program known as biological services through which it is aspiring to become the biological arm of the Government.

Given the personnel and financial demands of these new programs, the more traditional missions of the Service, like the refuge system, have to some extent been preempted. The fear of many is that if it is not soon rejuvenated, the Refuge System is on the road to oblivion.

The purpose of this hearing is threefold; first, to identify the problems facing the refuge system; second, to determine how the problems have reached such critical proportions and; third, to determine how they can be corrected.

In working toward this end, the subcommittee will be taking testimony from public witnesses today and from witnesses from the Department of the Interior on October 3.

Some of the topics to be discussed include the goals and purposes of the refuge system, effects of shortages of funding and personnel, evaluation of the Services' land acquisition program, and procedures for setting waterfowl hunting regulations.

As I mentioned earlier, we will also be discussing two legislative proposals, H.R. 5608, the Wetlands Loan Act extension and S. 1268, the National Wildlife Refuge Organic Act.

During the course of this hearing no doubt many suggestions will be offered on how to improve or revitalize the administration of the National Wildlife Refuge System. In the view of the subcommittee the most basic element necessary for the continued existence of a thriving and viable refuge system is public involvement.

In the words of the prestigious Leopold committee report, "There is no way in which sanctity of refuge lands can be guaranteed other than by continuing public interest and by spirited public defense as required."

If these hearings accomplish nothing else, hopefully, they will alert the public to the need for its involvement in the refuge system and encourage the Department of the Interior to more actively elicit this involvement.

(The bills follow :)

1 ing the most widely distributed public land resource in
2 the United States and represents the most comprehen-
3 sive wildlife habitat management and preservation pro-
4 gram in the history of mankind; there are units of the
5 System in all of the major Life Zones of North Amer-
6 ica; and associated with these lands are diverse plant and
7 animal communities and renewable and nonrenewable
8 resources of national and international significance and
9 benefit to present and future generations;

10 (2) in addition to wildlife resources, the System
11 contains nationally significant multiple values including,
12 but not limited to cultural, social, natural, economic,
13 recreational, educational, wilderness, historical, interpre-
14 tive, and scenic values of enduring benefit to the Nation;

15 (3) since its inception in 1903, the System has
16 grown opportunistically and sporadically in response to
17 changing national needs to acquire and administer habitat
18 required by a wide variety of wildlife for survival and
19 there is now an urgent need to provide comprehensive
20 policy direction setting forth goals and principles by
21 which the System will be organized, administered and
22 managed;

23 (4) while the largest number of System units has
24 been established to protect and husband colonial nesting
25 and migratory birds, the bulk of the acreage of the Sys-

1 tem has been acquired by withdrawal from public domain
2 to preserve representative samples of wildlife landscapes
3 essential to sustain unique, threatened, rare or endan-
4 gered wildlife; and

5 (5) one of the unfortunate results of population
6 expansion and settlement, economic growth and develop-
7 ment, urbanization, and resource extraction and utiliza-
8 tion has been the disappearance of natural environments
9 and ecosystems required by many wildlife species for
10 survival; that habitat destruction often is the principal
11 factor causing a specific wildlife species to become rare,
12 endangered or extinct; and that there is an urgent need
13 to expand the land acquisition authorities of the Secretary
14 to enlarge the System by identifying, acquiring, with-
15 drawing and managing, in the national interest, natural
16 fish and wildlife habitats that are threatened with extinc-
17 tion including, but not limited to, environments necessary
18 to sustain in perpetuity game and nongame migratory,
19 upland, and marine species of wildlife; and

20 (b) The Congress further finds that native fish and wild-
21 life have a natural right to inhabit land, air, and water; that
22 the securing of such right by the people of the United States
23 enhances our stature as a free and civilized people; and that
24 native fish and wildlife are a renewable natural resource of

1 great benefit to the social, economic, spiritual, recreational,
2 and general well-being of our citizens.

3 STATEMENT OF POLICY

4 SEC. 3. In order to maintain and secure for the Ameri-
5 can people of this and future generations an enduring wild-
6 life heritage, it is hereby declared to be the policy of the
7 Congress that—

8 (a) the mission of the National Wildlife Refuge
9 System is to acquire, restore, preserve, manage, admin-
10 ister, and develop wildlife environments for the continued
11 enjoyment and benefit of the American people and to
12 assure that no native species of fish and wildlife shall
13 become rare, endangered, or extinct due to lack of habitat
14 in the United States and its possessions;

15 (b) the purpose of each unit of the System now and
16 in the future shall be to provide habitat requirements for
17 native fish and wildlife to thereby assure the public bene-
18 fits derived from healthy and abundant wildlife popula-
19 tions;

20 (c) the System is an incomplete national network of
21 wildlife environments providing a variety of public values
22 and, though part of a network, each unit of the System is
23 an independent entity with differing ecological features
24 which shall in combination—

25 (1) be administered to provide for public enjoy-

1 ment of wildlife and its natural environment in such
2 manner and by such means as will leave them
3 unimpaired for the enjoyment of this and future
4 generations,

5 (2) be administered, in combination with their
6 primary wildlife functions, to purposefully guard
7 and, where necessary, restore the broadest possible
8 spectrum of wildlife values and associated plant life,

9 (3) be consciously developed as showplaces for
10 all kinds of wildlife where disturbances are regulated
11 and minimized and where wildlife-oriented recrea-
12 tional, inspirational, educational and natural history
13 values are protected and public enjoyment thereof
14 encouraged,

15 (4) stand as monuments to the science and
16 practice of wildlife management by avoiding arti-
17 ficiality and by displaying native flora and fauna in
18 greatest diversity and reasonable abundance,

19 (5) be managed to retain or restore the natural
20 and primeval status of the environment, assuring
21 the survival in a natural state of each indigenous
22 plant and animal species.

23 (d) In the planning, management and administration
24 of the System and each unit thereof:

1 (4) the term "lands" includes lands, waters, and
2 interests therein;

3 (5) the terms "manage" and "management" mean
4 the rehabilitation, restoration, protection, and preserva-
5 tion of lands within the System, based on applied
6 research and sound ecological principles, for primary
7 wildlife utilization and protection purposes;

8 (6) the term "multiple value" means the operation
9 and coordinated management of the varied resources and
10 values of any system unit without impairment to, and in
11 harmony with, the primary wildlife values of that unit;

12 (7) the term "person" means any individual, part-
13 nership, corporation, or association;

14 (8) the term "Secretary" means the Secretary of
15 the Interior;

16 (9) the terms "State" and the "United States"
17 mean the several States of the United States, the Com-
18 monwealth of Puerto Rico, American Samoa, the Virgin
19 Islands, Guam, and the Trust Territory of the Pacific
20 Islands;

21 (10) the term "System" means the National Wild-
22 life Refuge System and units thereof as classified by this
23 Act;

24 (11) the term "take" means to pursue, hunt, shoot,

1 capture, collect, kill, or attempt to pursue, hunt, shoot,
2 capture, collect, or kill.

3 PLANNING AND TRAINING

4 SEC. 6. (a) The Secretary shall develop a systematic
5 planning program for the development and maintenance of
6 plans to guide administration and management of the System
7 and each unit of the System. Such plans shall be completed
8 within five years.

9 (b) In the development and maintenance of such plans,
10 the Secretary shall:

11 (1) use an interdisciplinary planning team approach
12 to achieve integrated consideration of ecological, wildlife,
13 social and economic sciences, and skills;

14 (2) develop concept plans for each unit of the Sys-
15 tem and the System as a whole designed to document
16 goals and alternative methods of achieving them and to
17 predict possible consequences in order to explicate multi-
18 ple values to society;

19 (3) identify and coordinate multiple values with an
20 objective of achieving an optimum mix of values for
21 wildlife, natural ecosystems, and public benefit;

22 (4) determine and state costs, both social and eco-
23 nomic, of achieving stated goals;

24 (5) coordinate, to the extent he deems feasible and

1 proper, with local State and other Federal agency plan-
2 ning activities;

3 (6) determine environmental impact of planning
4 and management decisions pursuant to the provisions of
5 the National Environmental Policy Act of 1969;

6 (7) provide maximum opportunities for the public
7 to participate in all stages of decisionmaking concerning
8 planning, administration and management of the System
9 and units of the System;

10 (8) from time to time revise plans to reflect chang-
11 ing candidates and public attitudes;

12 (9) distribute completed plans to the public.

13 (c) The Secretary shall establish a national planning,
14 training, and research academy to be known as the "J. Clark
15 Salyor II National Wildlife Refuge Training Academy". The
16 Academy shall—

17 (1) be centrally located in the forty-eight cotermi-
18 nous States within an existing system unit or a unit to
19 be specifically acquired and developed for such purposes,
20 which unit to contain a wide variety of ecosystems and
21 subsystems so that training experiences and planning
22 and land management methodologies will be maximized;

23 (2) function as a national and international train-
24 ing center to foster understanding, knowledge, phi-

1 sanctuary needs and perpetuation of a particular species or
2 groups of species of North American fauna.

3 (2) NATIONAL WILDLIFE AREA.—A unit of the sys-
4 tem established to manage, rehabilitate or develop wildlife
5 habitat in order to perpetuate, distribute, and provide public
6 enjoyment of native wildlife populations and to enhance
7 compatible recreational, education, social, and economic use
8 of associated lands, waters, and natural resources.

9 (3) NATIONAL WILDLAND.—An extensive unit of the
10 System withdrawn from public domain or established by Acts
11 of Congress to protect, and where necessary restore, wildlife
12 habitats and ranges in a wildland condition in order to per-
13 petuate natural ecological communities necessary to restore
14 or maintain nationally significant or unique species of wildlife
15 and public enjoyment thereof.

16 (4) NATIONAL WATERFOWL PRODUCTION AREA.—
17 A unit of the System acquired, controlled, and managed for
18 the purposes of preserving North American waterfowl pro-
19 duction habitat.

20 (5) NATIONAL MARINELAND.—A unit of the system
21 established by Act of Congress to preserve marine environ-
22 ments, including surface waters, submerged lands, and asso-
23 ciated islands, tidelands, and estuaries, in order to protect and
24 sustain marine life for public enjoyment and benefit.

25 (6) NATIONAL URBAN WILDLIFE AREA.—A unit of

1 the system which is established for the purpose of preserving
2 or creating necessary wildlife habitat in close proximity and
3 within urban areas of the Nation in order to provide health-
4 ful wildlife-oriented recreational pursuits, including, but not
5 limited to, hunting, fishing, interpretation, and wildlife
6 observation.

7 (7) NATIONAL WILDLIFE WILDERNESS.—A unit, or
8 a portion of a unit, of the System which has been designated
9 as wilderness in accordance with the provisions of the Wilder-
10 ness Act (16 U.S.C. 1131–1136) and which is administered
11 to preserve the wilderness character of the area for wildlife
12 and public benefit.

13 (c) The Secretary shall classify each of the existing
14 system units before the close of the one-year period fol-
15 lowing the effective date of this Act.

16 (d) After the effective date of this Act no national
17 wildland, national marinelands, or national urban wildlife
18 area may be established within the system other than by Act
19 of Congress, except that the Secretary may establish na-
20 tional wildlands by withdrawal of lands from the public
21 domain or by transfer from other Federal agencies.

22 DISPOSAL OF LANDS WITHIN SYSTEM

23 SEC. 8. (a) It is the policy of the Congress that all lands
24 and waters within the National Wildlife Refuge System are

1 valuable national assets which shall be retained in the public
2 interest primarily for wildlife and wildlands benefit.

3 (b) No lands within the system may be disposed of
4 (whether by sale, donation, cooperative agreement, or other-
5 wise), nor may the administration or management of any
6 unit of the system be transferred in whole or in part unless
7 the Secretary of the Interior has determined that such dis-
8 posal or transfer will have no adverse impact on wildlife
9 or human environments and has transmitted a report of his
10 findings, including environmental impact, and recommenda-
11 tions to the President. The President shall advise the Pres-
12 ident of the Senate and the Speaker of the House of Rep-
13 resentatives of his recommendations with respect to the
14 proposed relinquishment. A recommendation of the Pres-
15 ident for disposal shall become effective only if so provided
16 by an Act of Congress: *Provided, however,* That the ex-
17 change provisions of title 16, United States Code 688dd (b)
18 (3), shall continue to apply.

19 (c) The Secretary of the Interior shall, prior to sub-
20 mitting his recommendations to the President, conduct a
21 thorough public review and shall—

22 (1) give appropriate public notice of the proposed
23 action including, but not limited to, publication in the
24 Federal Register and in newspapers having general
25 circulation in the vicinity of the affected land or water;

1 issuance of news releases describing the proposed
2 tion; and distribution of descriptive materials to the
3 public;

4 (2) hold a public hearing or hearings at a loca-
5 tion or locations convenient to the area affected. The
6 public hearings shall be announced at least 60 days in
7 advance through such means as the Secretary shall
8 deem appropriate, including notices in the Federal
9 Register and in newspapers having general circulation
10 in the area, and other news media in the area affected
11 by the proposed action: *Provided*, That if the lands
12 involved are located in more than one State, at least
13 one hearing shall be held in each State in which a por-
14 tion of land lies; and,

15 (3) at least sixty days before the date of a hear-
16 ing, advise the Governor of each State, or his rep-
17 resentative, in which the lands are located, and citizens
18 having an interest in the matter, and invite such officials
19 and citizens to submit their views on the proposed ac-
20 tion at the public hearing or by no later than forty-five
21 days following the day of the hearing: *Provided, how-*
22 *ever*, That the Secretary shall furnish to officials and
23 citizens such materials as he deems appropriate to fully
24 explain and justify the proposed action, including a
25 descriptive brochure and a map.

1 (d) Any views submitted to the Secretary under the
 2 provisions of (c) of this subsection with respect to any
 3 area shall be included with any recommendations to the
 4 President and to Congress with respect to such area.

5 (e) No lands which are or become a part of the System
 6 may be disposed of unless such lands are disposed of for an
 7 amount not less than the greater of (1) the fair market value
 8 (as determined by the Secretary) of such lands as of the
 9 date of acquisition, or (2) the fair market value (as deter-
 10 mined by the Secretary) of such lands as of the date of dis-
 11 posal. The Secretary shall pay into the migratory bird
 12 conservation fund the aggregate amount of the proceeds of
 13 any disposal referred to in this subsection.

14 REVIEW OF EXISTING NATIONAL WILDLIFE REFUGE SYSTEM

15 UNITS

16 SEC. 9. (a) The Secretary is authorized and directed to
 17 review all lands and waters contiguous to and within all units
 18 of the National Wildlife Refuge System in existence on the
 19 effective date of this Act and report his findings and recom-
 20 mendations to the President within three years with re-
 21 spect to:

22 (1) lands and waters which should be acquired or
 23 withdrawn in order to fully protect the investment of the
 24 Federal Government in each unit;

25 (2) lands and waters which should be acquired or

1 withdrawn to fulfill the purposes for which the unit was
2 originally established;

3 (3) lands and waters which should be acquired or
4 withdrawn to assure a manageable ecological unit of sig-
5 nificance to wildlife;

6 (4) lands and waters which should be acquired or
7 withdrawn for proper management of the unit and its
8 associated wildlife populations;

9 (5) inholdings which should be acquired to effec-
10 tively administer surrounding lands or waters.

11 REVIEW OF PUBLIC DOMAIN

12 SEC. 10. (a) The Secretary is directed to review, within
13 three years, all lands and waters under his jurisdiction on
14 the effective date of this Act, including lands previously clas-
15 sified or withdrawn, except lands within the National Park
16 System and lands recommended for inclusion in the System
17 pursuant to section 17 (d) (2) of the Alaska Native Claims
18 Settlement Act, and withdraw from all forms of appropri-
19 ation under the public land laws, including the mining and
20 mineral leasing laws, those lands and waters that he deem
21 suitable for addition to or creation of units of the National
22 Wildlife Refuge System. Emphasis will be on lands which
23 are chiefly valuable as reservations for rare, endangered,
24 threatened, unique, or peripheral species of wildlife; non-
25 game vertebrates; all forms of migratory birds, including, but

1 not limited to, passerines and raptors; and lands which are
2 threatened by development which are chiefly suitable for
3 retention in the public interest for wildlife conservation and
4 related purposes: *Provided, however,* That the Secretary
5 shall transfer as units of the National Wildlife Refuge System
6 those areas under his jurisdiction previously identified and
7 classified as being principally of value as wildlife habitat.

8 (b) With respect to those areas that are deemed suitable
9 for inclusion in the National Wildlife Refuge System the
10 Secretary shall submit recommendations to the President. The
11 President shall advise the President of the Senate and the
12 Speaker of the House of Representatives of his recommenda-
13 tions with respect to the proposed addition. The Secretary
14 shall, prior to submitting any recommendations to the Presi-
15 dent, hold public hearings in accordance with the procedures
16 set forth in section 8 (c) of this Act.

17 NATIONAL URBAN WILDLIFE AREAS

18 SEC. 11. (a) The Secretary shall identify and from time
19 to time submit to the President and the Congress proposals
20 for the acquisition of areas of land and water in proximity
21 to urban areas which are suitable for preservation, resto-
22 ration, or enhancement of natural fish and wildlife habitat
23 and for public use in pursuit of wildlife-oriented recreational
24 activities in a natural setting including, but not limited to,
25 nature appreciation, environmental education, interpretation,

1 wildlife observation, fishing, and hunting. The Secretary
2 is authorized to acquire lands and interests in lands within
3 the authorized boundaries of any such area hereafter ap-
4 proved by Act of Congress pursuant to the Land and Water
5 Conservation Act, as amended (16 U.S.C. 460).

6 (b) Any such areas of land and water acquired by the
7 Secretary pursuant to the provisions of this section shall be
8 designated as "National Urban Wildlife Areas" and shall be
9 administered as units of the National Wildlife Refuge System.

10

NATIONAL MARINELANDS

11 SEC. 12. (a) The Secretary shall review, in coopera-
12 tion with the various States, before the close of the three-
13 year period following the effective date of this Act, all
14 coastal and marine waters within the territorial jurisdiction
15 of the United States and its possessions and determine those
16 marine environments which should be recommended to the
17 Congress for inclusion as national marinelands within the
18 National Wildlife Refuge System: *Provided, however,* That
19 the Secretary shall complete reviews and make recom-
20 mendations on the marine environments surrounding the
21 Farallon Islands in the State of California, the submerged
22 lands and tidelands encompassing Bristol Bay within and
23 without the State of Alaska, and the Ten Thousand Islands
24 area in the State of Florida within one year of the effective
25 date of this Act.

1 (b) The Secretary, prior to submitting recommenda-
2 tions to the President, shall hold public hearings in accordance
3 with the procedures set forth in section 8 (b).

4 UNITED STATES FISH AND WILDLIFE SERVICE

5 SEC. 13. Section 3 (c) of the Fish and Wildlife Act of
6 1956 (16 U.S.C. 742b) is amended to read as follows:

7 “(c) (1) The United States Fish and Wildlife Service
8 consists of the National Wildlife Refuge Service and the
9 Bureau of Biological Services. There shall be a Chief of
10 each such Bureau appointed by the Secretary.

11 “(2) The National Wildlife Refuge Service shall be
12 responsible for (A) the administration and management
13 of the National Wildlife Refuge System (including the pro-
14 vision of all supporting services and activities); (B) the
15 administration of all programs and facilities (including wild-
16 life research stations) relating to, or engaged in, research
17 regarding wildlife habitat; and (C) the administration of all
18 laws, programs, and activities relating to rare, endangered,
19 and threatened species of wildlife within the System.

20 “(3) The Bureau of Biological Services shall be re-
21 sponsible for all those functions administered by the United
22 States Fish and Wildlife Service on the day before the date
23 of the enactment of this title except those functions vested
24 in the National Wildlife Refuge Service by paragraph (2).”

SPECIAL PROVISIONS

1

2 SEC. 14. (a) Unless previously withdrawn and subject
3 to existing valid rights, all units of the System are hereby
4 withdrawn from all forms of appropriation under the public
5 land laws, including the mining and mineral leasing laws.

6 (b) Nothing in this title shall constitute an express or
7 implied claim or denial on the part of the Federal Govern-
8 ment as to exemption from State water laws.

9 (c) Nothing in this title shall be construed to authorize
10 the Secretary to control or regulate hunting or fishing of
11 resident fish and wildlife, including endangered or threatened
12 species thereof, on lands not within the System. The regu-
13 lations permitting hunting and fishing of resident fish and
14 wildlife within the System shall be, to the extent practicable,
15 consistent with State fish and wildlife laws and regulations.
16 The provisions of this title shall not be construed as affecting
17 the authority, jurisdiction, or responsibility of the several
18 States to manage, control, or regulate fish and resident wild-
19 life under State law or regulations in any unit within the
20 System.

21 (c) Nothing in this Act may be construed to affect in
22 any manner the authority to acquire lands for the System
23 pursuant to the first section of the Act of June 25, 1910
24 (43 U.S.C. 141), the Fish and Wildlife Act of 1956 (16
25 U.S.C. 742 et seq.), the Migratory Bird Conservation Act
26 (16 U.S.C. 715 et seq.), the Migratory Bird Hunting Stamp

1 Act (16 U.S.C. 718 et seq.), the Fish and Wildlife Co-
2 ordination Act (16 U.S.C. 661 et seq.), the Endangered
3 Species Act of 1973 (16 U.S.C. 1531 et seq.), the Act of
4 September 28, 1962 (16 U.S.C. 460k et seq.), or any
5 other Act in effect on the effective date of this Act which
6 otherwise authorizes the acquisition of lands for wildlife con-
7 servation purposes.

8 (d) Nothing in this Act shall be construed to amend,
9 repeal, or otherwise modify the provisions of the Act of
10 September 28, 1962 (16 U.S.C. 460k et seq.) which
11 authorize the Secretary to administer units of the System
12 for public use and enjoyment. The provisions of this Act
13 relating to recreation shall be administered in accordance
14 with the provisions of such Act.

15 OUTSTANDING REGULATIONS

16 SEC. 15. All regulations issued by the Secretary to im-
17 plement the National Wildlife Refuge Administration Act of
18 1966 and which are in effect on the day before the date of
19 the enactment of the Act shall remain in full force and effect
20 until modified, suspended, rescinded, or otherwise changed by
21 the Secretary.

22 SEC. 16. There are authorized to be appropriated such
23 sums as may be necessary to carry out the provisions of this
24 Act.

25 EFFECTIVE DATE

26 SEC. 17. This Act shall take effect _____.

94TH CONGRESS
1ST SESSION

H. R. 5608

IN THE SENATE OF THE UNITED STATES

JULY 9 (legislative day, JULY 7), 1975

Read twice and referred to the Committee on Commerce

AN ACT

To extend until the close of 1983 the period in which appropriations are authorized to be appropriated for the acquisition of wetlands, to increase the maximum amount of such authorization, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 That the first section of the Act entitled "An Act to promote
4 the conservation of migratory waterfowl by the acquisition of
5 wetlands and other essential waterfowl habitat, and for other
6 purposes", approved October 4, 1961 (Public Law 87-383,
7 16 U.S.C. 715k-3) is amended by striking out "fifteen-
8 year period" and all that follows thereafter and inserting in
9 lieu thereof the following: "period beginning on July 1,
10 1961, and ending at the close of September 30, 1983, not to
11 exceed \$200,000,000."

1 SEC. 2. Section 3 of such Act of October 4, 1961, is
2 amended—

3 (1) by striking out “with fiscal year 1977,” and
4 inserting in lieu thereof “on October 1, 1983,”; and

5 (2) by striking out “prior to the end of the afore-
6 said fifteen-year period,” and inserting in lieu thereof
7 “before October 1, 1983,”.

8 SEC. 3. The first section of the Act entitled “An Act to
9 supplement and support the Migratory Bird Conservation
10 Act by providing funds for the acquisition of areas for use
11 as migratory-bird sanctuaries, refuges, and breeding grounds,
12 for developing and administering such areas, for the protec-
13 tion of certain migratory birds, for the enforcement of the
14 Migratory Bird Treaty Act and regulations thereunder, and
15 for other purposes”, approved March 16, 1934 (48 Stat.
16 541; 16 U.S.C. 718a; commonly known as the “Migratory
17 Bird Hunting Stamp Act”) is amended by inserting after
18 “hunting” in the first sentence the words “and conservation”.

19 SEC. 4. (a) The first sentence of section 2 of such Act
20 of March 16, 1934 (16 U.S.C. 718b) is amended to read as
21 follows: “The stamps required by section 1 of this Act shall
22 be issued and sold by the Postal Service and may be sold by
23 the Department of the Interior under regulations prescribed
24 jointly by the Postal Service and the Secretary of the
25 Interior: *Provided*, That the stamps shall be sold at all post

1 offices of the first- and second-class and at such other facilities
2 or locations as the Postal Service and the Secretary of the
3 Interior shall direct: *Provided further*, That the moneys
4 received for such stamps sold by the Department of the
5 Interior shall be deposited in the migratory bird conserva-
6 tion fund in accordance with the provisions of section 4 of
7 this Act.”.

8 (b) The fifth sentence of such section 2 of such Act of
9 March 16, 1934 (16 U.S.C. 718b), is amended to read as
10 follows: “The Postal Service, pursuant to regulations to
11 be prescribed by it, shall provide for the redemption, on or
12 before the thirtieth day of June of each fiscal year, of blocks
13 composed of two or more attached unused stamps issued for
14 such year that were sold on consignment to any person,
15 including, but not limited to, retail dealers for resale to their
16 customers, and that have not been resold by such persons,
17 including such retail dealers.”.

18 SEC. 5. The first sentence of section 4 of such Act of
19 March 16, 1934 (16 U.S.C. 718d), is amended by inserting
20 immediately after “Postal Service” the following: “or the
21 Department of the Interior, whichever is appropriate,”.

22 SEC. 6. Section 2 of the Migratory Bird Conservation
23 Act (16 U.S.C. 715a) is amended by adding at the end
24 thereof the following new sentence: “For purposes of this
25 Act, the purchase or rental of any area of land, water, or

1 land and water includes the purchase or rental of any interest
2 in any such area of land, water, or land and water.”.

3 SEC. 7. The matter contained in section 4 (b) (3) of the
4 National Wildlife Refuge System Administration Act of
5 1966 (16 U.S.C. 668dd (b) (3)) which precedes the first
6 period is amended to read as follows:

7 “(3) to acquire lands or interests therein by ex-
8 change (A) for acquired lands or public lands, or for
9 interests in acquired or public lands, under his juris-
10 diction which he finds to be suitable for disposition, or
11 (B) for the right to remove, in accordance with such
12 terms and conditions as the Secretary may prescribe,
13 products from the acquired or public lands within the
14 System.”.

Passed the House of Representatives July 8, 1975.

Attest:

W. PAT JENNINGS,

Clerk.

Senator Moss. Let us turn to our witness.

Mr. Lawrence S. Givens, recently retired from the position of supervisor for the Division of Refuges of the Fish and Wildlife Service, Southeastern Region.

We are pleased to have you here today, Mr. Givens. Please come forward.

We welcome you before the committee. We look forward to your statement.

**STATEMENT OF LAWRENCE S. GIVENS, FORMER SUPERVISOR,
DIVISION OF REFUGES, U.S. FISH AND WILDLIFE SERVICE,
SOUTHEASTERN REGION, ATLANTA, GA.**

Mr. GIVENS. Thank you, Senator Moss.

I appreciate very much the opportunity to appear before this committee.

As you have already stated, I retired recently from the position of supervisor for the Division of Refuges, Region 4, in Atlanta.

The views I present here today will be my own. However, I am confident they express the thoughts and the sentiments of the majority of refuge employees throughout the system.

I have prepared a written statement and I have 50 copies available for release.

Senator Moss. Thank you. These copies will be picked up.

Mr. GIVENS. Today the national wildlife refuge system, as you have suggested, is confronted with many problems. This is nothing new. Some of these have been present for as long as I have been associated with the Fish and Wildlife Service and its first predecessor agency, the Bureau of Sports Fisheries and Wildlife.

I have identified certain problems that have been with us for a long, long time. These include the lack of strong, centralized administrative direction by the Service; a poor organizational posture within the Service hierarchy; the failure of the Service to define a mission and role for the system that is broad and imaginative enough to permit it to develop to its fullest potential; an over-protectionist philosophy and stance in its formative years; and, finally, the damaging effects of a very restrictive funding and personnel limitation imposed by the Office of Management and Budget, the Department, and Service.

Unfortunately, within the last 3 or 4 years other problems have emerged. These are of an even more serious nature, although in many respects, they are but reflections of the past.

Much has been said about the lack of funds and personnel to manage the system. While, constituting a serious problem, they are but symptomatic of the more fundamental issues.

I will discuss four major problems or issues. The solution of each is crucial if the National Wildlife Refuge System is to achieve its proper role as a continuing program of protection and husbandry for this Nation's wildlife.

Briefly these are:

1. A low program priority rating within the U.S. Fish and Wildlife Service.

2. A lack of support and commitment for the System from the Department and Service.

3. A reduced organizational identity within the Service which will come about with the new reorganization now in the process of taking place.

4. A program management system that fails to relate specifically to refuges as a management entity.

The Department and Service have, for reasons best known to officials within, determined that the refuge system is a low priority program.

I have listed here some evidence to support my first statement that the program has a low priority rating within the U.S. Fish and Wildlife Service. I will not take time to read these, but in addition, I want to read something contained in the 1976 Program Advice, Executive Direction Program Advice, for the Fish and Wildlife Service. It states:

Within this concept the Service will continue to emphasize actions which expand capabilities for environmental protection of fish and wildlife and therein habitats principally through ecological services, research, technical assistance and biological service. A primary role will be to develop, analyze, and assimilate basic biological data which can be used to guide the conservation development and management of the Nation's natural resources.

The executive level of the Service must plan future actions in accordance with that concept. Our priorities lie there. Among the priorities the refuge system is not listed.

I think the point is you are likely to give your time, your effort, your money, and your attention to where your priorities lie. I think this is a basic issue and a basic problem that faces the refuge system at this point in time.

The matter of lack of support and commitment to the system from the Department, and here again I have listed several references, is not the kind of support and commitment the System must have to thrive.

I recently found a very interesting article. This problem of lack of support is one of longstanding. I want to read something and later I will identify where it came from. It states:

The Service activity now under the closest scrutiny is the Federal Refuge System. I may have been misguided for the last 20-odd years, but I've felt that this field was the one in which the Service had attained astonishing results and attracted the greatest measure of public approval. Yet the appointment of a survey team indicated that all is not satisfactory here; that long looks should be taken at individual projects and possibly Federal control of certain areas "relinquished."

Harold Titus wrote what I read 20 years ago. Mr. Titus was conservation editor for *Field and Stream*.

This lack of support and commitment on the part of the Department for the refuge system, is another matter that is basic to the continuing well-being and welfare of the Refuge System.

Anyone who has worked within the system as I have, for 37 years, in the last 3 or 4 years, didn't need confirming evidence to know that the refuge system had a low priority rating. One was reminded constantly and from any sources, that support for Refuge System was only lukewarm on the part of the Department.

There have been and still are efforts to give units, parts of units of the Refuge System to other Federal agencies. I believe the order by former Secretary Morton speaks for itself.

I cite here a Memorandum of Understanding that is now in the process of being formulated and will be entered into with the various

States for the cooperative management of National Wildlife Refuges. The cooperative management idea seems innocent enough on the surface. There is plenty of room for cooperation between the States and the Fish and Wildlife Service. But the thing that disturbs me and I'm certain disturbs others, is the fact that once you enter into a cooperative agreement with a state for the management of a refuge, the chances of that refuge returning to the system again is very, very remote.

The second thing to remember is that the States in their management do not have the same management objectives the Service has for managing the National Wildlife Refuge System. When I say there has been a continuing effort to give refuges away. I would like to cite one other memorandum. It was a memorandum dated June 3, 1965, from the Director of the Service, Washington, D.C., to the Regional Director of the Service in Atlanta. The subject was phase-out of Carolina Sand hills and Piedmont refuges. Fortunately these areas were not disposed of.

I say fortunately because these two areas now have one of the largest populations of redcock woodpeckers in the Southeast an endangered species.

You have to question the wisdom of actions that would relieve the Service of areas like this. I think the same thing is happening today.

In more recent times, there have been all kinds of approaches taken as ways and means of disposing of units or parts of units of the refuge system. One of the more interesting ones is the overcommitment gimmick that has been used in budget presentations. It is saying the same thing, as far as I'm concerned, in a different way. But is not a matter of overcommitment. I don't see how it could be one of overcommitment when the Director, in testimony before the appropriations committee, said there is a backlog of \$83 million of rehabilitation and maintenance work that needs to be done, that refuges are falling apart. I think you have to ask the question, how could there have been much commitment to the refuge system when over the years a condition like this was permitted to develop?

I think if we are looking for help from within, our record over the years has not been too good. It is for this reason I would urge the Congress to pass legislation that would prevent these give-away efforts, from occurring in the future, as they have repeatedly in the past. And I think also if one is naive enough to believe there is any hope in the future from the reorganization plans of the Service, you are going to have to look elsewhere because the reorganization that is now proposed, as I understand it, as well as the program management system, are not designed to do anything to strengthen the System and, in fact, will weaken it. It does not provide for centralized direction and management of the System.

One of the problems I have detected, ever since I have been with the Fish and Wildlife Service, is the poor organizational posture of the Refuge System within the Service. It has never had more than a division status. Here is a system of lands, that is comparable to the National Park System managed by an agency where there is a great diversity of interest, and other programs and it is easy to see why the Service cannot give the administrative thrust, the attention and direction the System needs if it is going to survive and thrive as it should and produce the benefits that it has the capability of producing

I feel that the organization, the impact of the reorganization upon the Refuge System, is serious enough that it should be subject to the review of an environmental impact statement. Whether this is provided for in the Environmental Protection Act or not, I do not know. I do know that the Service is writing environmental impact statements on many, many things, some are of minor importance as compared to the impact and effect that the reorganization will have on the Refuge System. I think this would be in order.

In my opinion, in the absence of a mandate from Congress, I think it is apparent a solution to the problem, in favor of the wildlife resource is not forthcoming from within the Department's Air Service. I do not think the problems of recent date can be corrected other than by congressional action. Even this will not be sufficient without adequate public support.

This concludes my statement, Mr. Moss. I have many other citations to support the four principal points I have made. For the sake of time and to give other people a chance to speak also, I will defer to them.

Senator Moss. Thank you for your statement. You paraphrased it in part. The entire statement will be in the record as you have written it out.

I wonder if you don't think the creation of a Bureau of Refuges would lead to inefficiencies through creation of a parallel administrative structure at the central regional and area office level.

Mr. GIVENS. I am sure there will be some duplication of effort. There may be another way to do this, rather than create a bureau, but I think there are at least two things that have to be done. One, refuges have to be identified and managed as a system. It cannot, in my opinion, be broken down by various programs the Service is trying to administer the System under at this time. I think there is too much evidence that the program management system, the reorganization plan that the Department and Service has, is not going to be adequate to get the job done. I would like to read something here about the program management system. I think it is very revealing. I believe this expresses the viewpoint of most of the employees in the regional offices. I cannot speak for the Washington office.

This is a memorandum to the Director from the Acting Regional Director in Albuquerque, dated April 11, 1975. It is a summary memorandum on the evaluation of the program advice system. It says "Simply stated, there has to be a better and simpler way of doing business. The Director and Regional Director do not need 500 pages of printed word to agree on what should be accomplished in a region for any given year. Our organization is not that large or complex to require such precise guidance. The System is a misnomer. As it is now structured it does not and cannot manage programs because no one has time to manage. It is pure and simple a mechanical plan to manage dollars—a budgeting system. Our attempt to inject management into the System has been a failure. Talented people at all levels of organization are wholly consumed in the process and their only accomplishment is more papers in the files. We must streamline the System or be consumed by it."

The point is the Refuge System will be managed by a system that has these kinds of deficiencies in it. So I think there has to be—there must be legislation that will set the System up, as a system, and put someone

in charge of it. Under the program management system, it is not possible to identify who is in charge of the National Wildlife Refuge System.

The Director of the Service is not really in charge of the Refuge System. He has too many other programs and problems. For the System to thrive there has to be some one person in charge.

How can this best be done? I think the idea of a bureau or something similar would give it the two things we are looking for and what is needed.

Senator Moss. If those individuals in the Department of the Interior most responsible for the funding and overall management of the Refuge System considered it to be a high priority activity, do you believe the program system of management and budgeting could be made to work for the System? In other words is the program management system in itself an untenable mode of operation or is it the lack of interest in the Refuge System among policymakers which makes it untendable?

Mr. GIVENS. I think it is both. I don't believe, from what I know about the program management system, that it can be made to work for the Refuge System and give it the direction and guidance that is needed. I can only make a conjecture of what would happen, if the Refuge System became a priority program within the Department—I am confident it would do better than it is at the moment. I don't believe the system, even if the departmental people gave it a high-priority rating could be given the attention, direction, and guidance needed by using the program management system. The program management system is made up of various programs, for example, endangered species. The way the program management system is structured, this one program becomes a separate entity in itself, an endangered species program. This one program, however, is only part and parcel of what the National Wildlife Refuge System stands for. On any one refuge you may have represented endangered species, migratory birds, mammals, and nonmigratory birds and recreation programs. These are separate programs and in two instances, also. There are program managers at the Washington level responsible for each of these programs but nowhere is there a mechanism to coordinate these various programs into a centralized system that gives guidance to the Refuge System.

I do not feel it is the right vehicle for giving the Refuge System the attention it needs even if departmental and Service intentions were as they should be.

Senator Moss. Since you seem to have reservations about the practicality and workability of the area office management concept and the program management system, during the time you were with the Fish and Wildlife Service did you and others who shared your reservations about these innovations make them known to the policymakers in the central office? If so, do you feel your views were given adequate consideration?

Mr. GIVENS. In answer to your first question, "Yes, I think our views were made known." Each region made an analysis of the program management system. As to whether our views were given adequate consideration or not. I would have to say "No" because the organization pattern and the system was first outlined in 1973, as I recall. It was fiscal year 1973.

Since that time, although many of these deficiencies I have talked about have been brought to the attention of the Washington office, I haven't seen many basic changes made from what was proposed originally.

Senator Moss. In your statement you noted that while one might be led to believe that the memorandum of understanding presently being negotiated between the States and the Service is to serve as a broad basis for cooperation, it is really nothing more than an effort to establish a basic framework for turning refuges and parts of refuges over to the States. What leads you to this conclusion?

Mr. GIVENS. Well, I think the nature of the memorandum itself. If you will examine the "whereases" in the preamble of the memorandum it speaks about broad areas of cooperation. It does, of course, make reference to some extent to law enforcement and other programs. When you get down to the meat of the memorandum it deals basically and largely with the idea of turning refuges or programs or parts of refuges over to the States for their management control and administration.

My belief is this: If the intent had been otherwise that it would have treated these other areas of possible cooperation in as much detail as was given the idea of the States managing National Wildlife Refuges.

This memorandum of understanding, as I view it, is only one of a series of ways the Service has used in trying to divest itself of refuges. For instance, in the case of Carolina Sandhills and Piedmont refuges, the effort to give them away, back in 1965, was tied into a funds deficiency.

There was another effort to eliminate Piedmont, that was related to the Georgia-Pacific redwood area in California. Georgia-Pacific tried to get control of Piedmont in exchange for lands they had given up in California.

Several years ago, there were programs called Ratchet 1 and Ratchet 2. Here again, certain refuges were identified for disposal by the Service, and again the reason given was the Service didn't have the money to manage all refuges, so they would divest themselves of low priority areas.

Senator Moss. Given the fact that the Service is heavily committed to other programs like endangered species, biological services, and the like, do you think it would be better for the refuge resources if some of the units were to be managed by the States so these resources could receive full attention?

Mr. GIVENS. I don't think transferring these areas to the States is the proper approach. The States are probably as hardpressed for funds to manage their lands as the Service is to manage lands within the National Wildlife Refuge System. I don't believe we can expect the States to manage refuges under the same mandates the Service has for managing the National Wildlife Refuge System. The States will be primarily interested in these areas for the hunting opportunities they provide.

So far as any attention being given to the broad spectrum of wildlife, to environmental educational programs inherent in each of these refuges, with other educational opportunities, and so forth, I believe when a refuge is transferred to a State, for all practical purposes, you are taking it out of the National Wildlife System.

If a cooperative agreement turns a refuge over to a State for management purposes, for all basic purposes, it is lost from the System. Once this is done and the area becomes valuable to the State for hunting and fishing purposes, the chances of getting it back into the System are pretty remote. The cooperative agreement idea sounds innocent enough and I would have no hesitancy about cooperative agreements if I knew what the intent was.

I am apprehensive not about what people "say," but what they "mean." In this kind of a situation, I don't think they "mean" anything that is good for the Refuge System.

Senator Moss. Have there been serious morale problems arising from the conditions that you described in your statement?

Mr. GIVENS. Yes, sir. There are morale problems particularly in the Refuge Division. I think that based on what has happened the last 3 or 4 years, many employees are concerned about their future and their jobs. They are weary of trying to adjust their lives and careers to a bureaucracy, which it seems has gone a little mad.

I think Fish and Wildlife Service employees are one of the most dedicated groups of people I know and they are concerned about what is happening to the wildlife resource.

Recently I made an opinion survey of 21 employees, most of them refuge managers in region 4. I have a copy of this for the record. Over 90 percent of the answers to the question were negative. The questions were as an example: Is morale high, average low, extremely high, extremely low? No one said morale was good as average. I can say that morale for Refuge System employees in region 4 is extremely low. I don't know how it could be otherwise when one looks at the problems they face from day to day, in trying to operate a system with completely inadequate personnel and funds.

To make up the difference they work 10, 12, 14 hours a day—many of them 7 days a week, trying to hold the refuges together in the absence of adequate funding and personnel. I think the Director recognized this in his recent statement before the Appropriations Committee when he said he sympathized with the problems Refuge people had.

But then he went on to say that service priorities lie elsewhere. There is little reason to believe any action is forthcoming by the Service to relieve refuges of their problems.

[The following information was subsequently received for the record:]

OPINION SURVEY

1. Do you believe that within the Department and Service support for the objectives of the National Wildlife Refuge System is: Excellent; good¹ (5); poor (43); real poor (52)?

2. Based upon what you know and have heard the effects of the reorganization plan of the Service on the Refuge System will be: Beneficial; No change; Detrimental (100).

3. Based upon what you know and have heard the effects of the Program Management System on the Refuge System will be: Beneficial (10); No change; Detrimental (90).

4. Refuge Employee morale at this time is: Very high; high; average; low (20); very low (80).

¹ (5) Percentage opinion of 22 employees surveyed.

5. Communications within the Service at this time are: Excellent; good; average (7); poor (50); very poor (45).

6. Department and Service leaders in discussing issues relating to support for the Refuge System are: Candid; evasive (62); at time dishonest (30); other (8).

7. At this time you rate your dedication to the Service as compared to previous years as: Good (14); average (20); poor (60); very poor (6).

8. The future of the Refuge System in your opinion is: Very good; good; fair (5); poor (43); very poor (52).

Senator Moss. Thank you for your testimony here today. You have pointed up some of the difficulties we are concerned about. We appreciate your viewpoint. From the long service you have rendered you are perhaps in a better position than anyone else to tell us what is going on.

[The statement follows:]

STATEMENT OF LAWRENCE S. GIVENS

I appreciate the opportunity to appear today before this Committee. I am here as a private citizen after having worked 37 years for the National Wildlife Refuge System. I retired from the position of Supervisor for the Division of Refuges, Southeastern Region, Atlanta, Georgia on July 31, 1975.

The views presented in this statement are my own. I am confident, though, they also express the thoughts and sentiments of the majority of refuge employees throughout the System of Refuges.

Today, the National Wildlife System is confronted with many problems. This is nothing new. Some of them have been present for as long as I have been associated with the U.S. Fish and Wildlife Service and its predecessor agency the Bureau of Sports Fisheries and Wildlife.

In the past, as now, some of the problems that can be identified include: a funding and personnel base that has always been too low; the lack of strong, centralized administrative direction; a poor organizational posture within the Service hierarchy; the failure of the Service to define a mission and role for the System that is broad and imaginative enough to permit it to develop to its fullest potential; an over-protectionist philosophy and stance in its formative years and finally the damaging effects of very restrictive funding and personnel limitations imposed by the office of Management and Budget, the Department and Service. These major problems, and a score of lesser ones, are largely responsible for today's depressed condition of the National Wildlife Refuge System.

Unfortunately, within the last three or four years other problems have emerged. These are of an even more serious nature, although in many respects, they are but reflections of the past.

Much has been said about the lack of funds and personnel to manage the System. While constituting a serious problem, they are but symptomatic of the more fundamental issues.

I will discuss four major problems or issues. The solution of each is crucial if the National Refuge System is to achieve its proper role as a continuing program of protection and husbandry for this nation's wildlife.

Briefly these are:

1. A low program priority rating within the U.S. Fish and Wildlife Service.
2. A lack of support and commitment for the System from the Department and Service.
3. A reduced organizational identity within the service.
4. A Program Management System that fails to relate specifically to refuges as a management entity.

The Department and Service have, for reasons best known to officials within, determined that the Refuge System is a low priority program. There is much evidence to support this statement. First, I cite a memorandum dated February 2, 1973 from Assistant Secretary Lyons, Department of the Interior, Program Policy, to Assistant Secretary Reed, Fish, Wildlife and Parks, on the subject: Specific policy guidelines and planning constraints for FY 1975 Program Development. The direction for the Refuge System was, and I quote, "Deemphasize as rapidly as possible Federal involvement in hatcheries and refuges in favor of State and local operations."

Next, I refer to an administratively confidential memorandum dated January 1973 from Assistant Secretary for Program Development, John Larson, to the Secretary of the Interior on the subject: Department of Interior Plan for the mid-1970's, 1973-1977. Under the Proposed Policy section relating to Refuges it provided for the transfer of four Game Ranges to the Bureau of Land Management and the possible disposal of 90 units of the System for a projected Savings of \$1.8 million and 215 positions.

In a summary statement on the 1976 Fish and Wildlife budget submission before the Interior subcommittee and related agencies, Director Greenwalt said, and I quote: "In summary, I believe the actions outlined for accomplishment in Fiscal Year 1976 reflect priority needs of the Fish and Wildlife Service, that they will provide direct benefits to fish and wildlife and their habitats. These choices from various program areas were hard to make, because I am personally aware of the feeling of pride that motivates all our National Wildlife Refuge Managers. I am aware too, that this group of dedicated, totally committed employees is deeply disturbed, as I am, about the continuing problems they encounter in doing their jobs. I assure you as I have pledged to them that I will make every effort to bring to the National Wildlife Refuge System the support this unique national asset deserves. In the meantime, however I believe the Fish and Wildlife Service must move ahead with the work before us, as reflected in the budget proposal." In summary, Director Greenwalt said: I sympathize with the plight of refugees but—our priorities lie elsewhere.

Anyone working for the System in recent years did not need confirming evidence that the Refuge System had a low priority rating. One was reminded almost constantly and from many sources that there was only lukewarm support from within the Department and Service.

The Department and Service are continuing an organized effort to give units, parts of units and/or programs over to other Federal agencies or to the States.

The recent order, with which we are all familiar, by former Secretary Morton to transfer four game ranges to BLM speaks for itself. I would remind you, however, that this was planned in 1973.

A draft Memorandum of Understanding between the U.S. Fish and Wildlife Service and individual State Fish and Game organizations was sent to the States for review by Mr. Keith Schreiner on May 19, 1975. The preamble and "Whereases" would lead one to believe the document was to serve as a basis for a broad cooperative effort between the Service and the States in many areas of fish and wildlife administration. The fact is the document is really nothing more than an effort to establish a basic framework for turning refuges, parts of refuges or programs over to the States.

I can remember a program called "Ratchet I" of 1964. Later there was "Ratchet II" because of a mandate to reduce expenditures by elimination of so called "useless" and "unproductive" areas, the Service was directed by the Department to close or give away certain refuges.

In more recent times the "over-commitment" gimmick was developed as a reason for closing refuges or giving them away.

The Sierra Club recently won their suit against the Department and Service, and the Plaintiffs proved that the defendants had considered proposals to reduce significantly the operations of the National Wildlife Refuge System.

Efforts of this nature to give all or parts of the Refuge System away have been going on for as long as I have known anything about it. If the Department and Service are not going to give the System the support and protection it needs and deserves (and the record to date is pretty poor) then the Congress should act to stop these periodic and wasteful give away efforts.

The problem is not one of "over-commitment" when our Government, as Director Greenwalt testified before the appropriations committee, permits a backlog of 83 million dollars of deferred maintenance and rehabilitation work to accumulate on National Wildlife Refuges. I believe this estimate, based upon my own personal knowledge of Region 4 needs, is indeed conservative. How could there have been much concern or commitment to permit a condition like this to develop?

The real tragedy is that the resource and the American people are the losers. I think only appropriate action by the Congress can rectify a bad situation.

If one is naive enough to have faith that there is hope from within for the Refuge System, one had better not look to the reorganization plans of the Service to sustain this belief. The reorganization plan, or perhaps better termi-

nology might be "scheme," is designed to implement the Program Management System (PMS) which was adopted by the Service in 1973. (It seems 1973 was a critical year for Refuges.)

I can detect nothing in either the reorganization or PMS designed to strengthen the Refuge System. Instead, these two things will further destroy its identity and dissipate responsibility for its direction and management.

Historically, from an organizational standpoint, the Refuge System has operated at a disadvantage within the Service. It has had Division status, the same as other lesser activities, because the Service either failed or refused to recognize that the refuge program was of major importance. Even so, the Division Chief at both the Washington and Regional Offices had line authority to direct the program. Under the reorganization plan this authority will be eliminated. Division organizational identity will be lost in the Regions. In the Washington Office, while identifiable, it will be reduced to a staff function.

The role of the Chief of the Division will be assumed by both an Assistant Regional Director (ARD) for Wildlife Resources and an ARD for Federal Assistance. A loosely structured conglomerate of Program Coordinators, Program and Area Managers will be in charge of the Refuge System. Instead of the organization strengthening and providing a firmer base for unification to withstand the pressures to which it is being subjected, it will divide and weaken the System.

Neither can the Refuge System look to the Program Management System (PMS) for relief. Under PMS, refuges are funded and personnel ceilings allocated under four activities: (1) Habitat Preservation (minor amounts), (2) Wildlife Resources: Two programs—(Migratory birds) and (Mammals and Non-migratory birds), (3) Endangered Species and (4) Interpretation and Recreation. Category or Activity Coordinators and Program Managers will, for these activities and programs, have a role to play in allocating funds and personnel to Refuges.

Unless there have been some recent improvements and refinements, the several category coordinators and program managers develop the budget, working independently and without any real knowledge of the total needs of the Refuge System. If, for example, the Program Manager at the Regional Office fails to negotiate effectively with his Washington Office counterpart to secure funding in an amount required to meet the needs for the refuge portion of the endangered species program, refuges financed in whole or in part in a Region are cut accordingly. No other program manager, for any other program, may know of this situation and certainly would not be willing to make up the deficit from another program. As a way to direct and manage a unitized system of lands the PMS has to be one of the most inefficient systems yet devised.

In an analysis of PMS by the Acting Regional Director of Region 2, Albuquerque, New Mexico, which was contained in a memorandum to the Director of FWS, dated April 11, 1975, he says: "Simply stated, there has to be a better way of doing business."

If, at this point, you don't understand what I am saying or don't understand how the (PMS) work, then you have just joined a number of people in the Service who have been working with it for quite some time.

I regret time will not permit an indepth analysis of both the reorganization and the Program Management System. I am confident that such a study will firmly establish the fact that neither are designed to give a coordinated central direction to the Refuge System.

I believe the problem is of sufficient importance that the Service should be required to prepare an Environmental Impact Statement on the reorganization plan as it relates to the welfare of the National Wildlife Refuge System and the wildlife resources that will be affected by this change. It is an incontrovertible fact that the Service is preparing statements on many, many projects having much less impact upon the resource.

In the absence of a strong legislative mandate from the Congress, it is apparent that a solution to the Refuge problem, in favor of benefits to the wildlife resources of this nation, is not forthcoming from within the Department and Service. And I do not believe the problems and issues which have been chronic, and the more serious ones of recent date, can be corrected other than by congressional action. Even this will not be sufficient without an aroused public support.

There are good reasons to believe that if the Congress will act the National Wildlife Refuge System can become the unique, dynamic benefit-producing system it has the potential of becoming. The public has a right to expect and deserves nothing less.

Senator Moss. Our next witness is Daniel Poole, president of the Wildlife Management Institute.

**STATEMENT OF DANIEL A. POOLE, PRESIDENT, WILDLIFE
MANAGEMENT INSTITUTE**

Mr. POOLE. Thank you, Mr. Chairman.

I am Daniel Poole, president of the Wildlife Management Institute, with headquarters in Washington, D.C.

I might say at the outset that I have some direct experience with national wildlife refuges. I worked on the Bear River Bird Refuge in Utah and on various refuges in Montana. In Utah, I was a summer research employee of the U.S. Fish and Wildlife Service. In Montana, I was an employee of the State. I have worked on the Tule Lake and the Lower Klamath refuges in California. Additionally, there is my work with the Wildlife Institute and the North American Wildlife Foundation. Those organizations were instrumental in financing the Key Deer Wildlife Refuge in Florida, Great Swamp National Wildlife Refuge in New Jersey and the Cedar Point refuge in Ohio. We arranged for money and donations so these areas could be contributed to the U.S. Fish and Wildlife Service for administration as national wildlife refuges.

We commend the committee for taking time to hold these hearings on the refuge system. That program is a mainstay of Federal efforts to conserve wildlife in this country. There are serious problems within the system, and Mr. Givens has enumerated a number of them. At the moment, the public and many in Congress are not aware of the nature and extent of these problems. We hope these hearings will air the problems and cause adequate Government reaction to them.

For wildlife's sake we cannot allow our Refuge System to become ineffective and collapse because of lack of attention.

A number of us can talk in general ways and indicate where we see the difficulties in what has happened, but the hard facts and figures will have to come from downtown. The facts and figures will have to be obtained from the U.S. Fish and Wildlife Service directorate and from representatives of the Department of the Interior.

Having been in Washington since 1952, I can say that the present situation with respect to national wildlife refuges cannot be laid to any single administration. It is something that has grown over the years.

Refuges have never had broad and active support at the Federal level. Fortunately, there have been a few persons in Congress and the administration who have cared. Without them, we believe the system may have perished by now. The conservation movement and refuge system grew from the activities of a few dedicated people within and without Government, who were energetic enough to arouse public support. Even in its greatest expansion area, when 11,000 people were employed developing wildlife areas, the refuge

system was not supported because of what it could do for the wildlife resources.

Those workers were made available under the Civilian Conservation Corps, established to create jobs during the depression. Following the rapid growth of the refuges the Director of the Service warned of times ahead. He said, "The spectacular part of refuge program is past, but the harder, gruelling fight to hold what we have gained and continue to progress toward the ultimate goal is still with us in grim earnest." The system, including old and new refuges, is floundering and is not performing the wildlife habitat functions Congress intended and the public expects.

There appears to be many things awry. For years, there has been a lack of sufficient personnel and funds to manage refuges at any respectable level.

Last year Fish and Wildlife Director Lynn Greenwalt responded frankly to an inquiry from Senator Metcalf on the refuges. He said, "The National Wildlife Refuge System, as with most activities of our Service, has been unfunded for some time. The consequences are evident in facilities which are inadequate and poorly maintained. Too few people are available to do a proper job of refuge management."

I submit, Mr. Chairman, a copy of Mr. Greenwalt's letter for the committee's information. I wish also to submit for the record a copy of an earlier letter dated June 12, 1972, sent to me by the then-Director of Fish and Wildlife Service, Mr. Spencer H. Smith. The more recent Greenwalt letter actually updates the information provided in the earlier Spencer Smith letter.

Senator Moss. They will both be printed in the record.

[The letters follow:]

U.S. DEPARTMENT OF THE INTERIOR,
FISH AND WILDLIFE SERVICE,
Washington, D.C., November 15, 1974.

Hon. LEE METCALF,
U.S. Senate,
Washington, D.C.

DEAR SENATOR METCALF: This responds to your September 3 letter concerning the activities of the Migratory Bird Conservation Commission and requesting an updating of information about problems encountered relating to acquisition for and management of land within the National Wildlife Refuge System.

Fiscal Year 1974 was significant because the total obligations for land purchase were in excess of \$20 million. This amount exceeds any other ever received for such purposes and is the largest since Congress passed the Wetlands Loan Act in 1961. The net result is that an additional 92,267 acres were added to the National Wildlife Refuge System. One new refuge was started and a number of major tracts, some previously deferred due to lack of funds, were acquired.

The appropriations bill for Fiscal Year 1975 shows a \$13 million acquisition program, composed of an estimated \$12 million from the sale of duck stamps and a \$1 million advance from monies still available under the Wetlands Loan Act. Actual receipts are likely to be in the \$10 million range making for a program which will be \$2 million less than appears in the budget. In line with Service acquisition priorities, approximately \$7.5 million of the \$11 million will be spent on the Waterfowl Production Area program, and the remainder on refuge projects. Most parcels requiring price approval by the Commission must be delayed beyond Fiscal Year 1976.

In fiscal Year 1976, the Accelerated Acquisition Program terminates. Currently, \$19.1 million of the \$105 million, which was authorized for land acquisi-

tion when Congress approved the Wetlands Loan Act, have not been appropriated.

The following is a brief resume of accomplishments and estimated goals from 1962-1976:

ACCOMPLISHMENTS 1962-74

	Attained acres	15-yr goal
Refuges.....	405,000	750,000
Waterfowl production areas:		
Fee.....	348,000	600,000
Easement.....	996,000	1,150,000
Total.....	1,749,000	2,500,000
Projected accomplishments:		
Refuges.....	408,000	750,000
Waterfowl production areas:		
Fee.....	383,000	600,000
Easement.....	1,107,000	1,150,000
Total.....	1,898,000	2,500,000

Based on these figures, over 600,000 acres would remain to be acquired after 1976 to meet the 2.5 million acre goal. The current projected accomplishments through Fiscal Year 1976 are 262,000 acres less than the estimate in June 1972. The large rise in land values coupled with inadequate funding are the chief reasons for the reduced estimate.

Presently, our Service is undertaking a publicity program to increase the number of duck stamps sold, particularly to nonhunting conservationists who benefit from habitat preserved and migratory birds as much as, if not more than, the waterfowl hunter. This approach was selected in favor of increasing the price of the stamp above \$5 in the hope that total acquisition funds will be increased significantly. This action also recognizes that wetlands provide numerous benefits to the public other than the production and maintenance of waterfowl.

The original objective of the Waterfowl Production Area program was to preserve at least 75 percent of the most important waterfowl wetlands (types 3,4,5) in the prairie pothole region of the United States. The 1,750,000 acre objective was intended to reflect the 75 percent figure.

An inventory of prairie potholes—conducted in 1964—suggested that an additional 1 million acres existed in the region and that the easement portion of the Waterfowl Area objective should be adjusted accordingly. Until such time as land use legislation or other measures are taken to effectively control wetland drainage in the prairie region, particularly by private citizens, our Service's acquisition program stands as the only significant deterrent to blatant destruction of these critical resources. In addition to wetland losses, research at our Northern Prairie Wildlife Research Center has pinpointed that a severe paucity of suitable upland nesting cover is also contributing to significantly reduced production of waterfowl and other ground nesting birds. This problem, aggravated by the intensification of agricultural practices, will need to receive greater attention in future Waterfowl Production Area programs.

Our Service is currently initiating a nationwide, State-Federal cooperative effort to further identify and describe remaining natural waterfowl habitat units or zones which at present are not adequately protected. Once defined and delineated, each area will be assessed as to the current degree of protection it receives, the methods best suited for preserving the area (State or Federal fee purchase or easement, zoning laws, or purchase by private conservation organizations), and its relative priority if Federal acquisition is determined necessary. This survey will update a similar effort conducted by our Service and waterfowl flyway councils in the late 1950's and should be completed by March 1975.

Our Service is in the process of reviewing its entire migratory bird management program. As this review progresses, long-range objectives and strategies for preserving migratory bird habitat will be refined. The increasing pressure on wetlands require that objectives be continually evaluated and revised in order to better respond to the needs for the resource. We believe that most of the lands, particularly wetlands, which are acquired specifically for migratory birds sus-

tain numerous other fish and wildlife species and provide a diversity of recreational opportunities beyond those related to waterfowl. There is a need to fully recognize all the values and functions performed by these habitats and to devise mechanisms which will ensure adequate protection without placing the full cost on the waterfowl hunter. The limitation to duck stamp receipts for the major portion of our waterfowl acquisition program is not adequate to secure the many other vital national benefits from wetlands acquisition.

Besides duck stamp purchases, 40,323 acres of land have been added to the refuge system under the Land and Water Conservation Fund Act since 1967. Of this, 38,364 acres were acquired for endangered species, 1,957 acres for recreation-interpretation purposes and 2 acres for wilderness.

Including lands from all sources, the National Wildlife Refuge System—as of June 30, 1974—totals 33,903,802 acres. This figure does not include any acreage proposed to be added to the system under the Alaska Native Claims Settlement Act.

During recent years, the mission and management objectives of the National Wildlife Refuge System were reexamined, and individual refuge objectives and management plans were prepared for most refuges. Each year these objectives are reviewed and adjusted as appropriate. Under the concept that individual refuges were acquired to produce wildlife benefits at a certain level and that this level is currently specified in the individual refuge objectives, this Department does have the authority—but not the manpower or funding—to manage all national wildlife refuges as intended. The anticipated funding for the operation and maintenance of the National Wildlife Refuge System in Fiscal Year 1975 is approximately \$26 million. This estimate is based on the past funding levels plus known increases for Fiscal Year 1975.

Construction funds in Fiscal Year 1975 total \$1,049,000 of which \$325,000 is earmarked for pollution abatement work. The backlog of facility rehabilitation needs now approaches \$60 million. This is largely the result of inadequate maintenance funding in past years. The current budget contains only \$1,175,000 for facility rehabilitation work.

The National Wildlife Refuge System, as with most activities of our Service, has been underfunded for some time. The consequences are evident in facilities which are inadequate and poorly maintained. Too few people are available to do a proper job of refuge management. To develop each of the 373 refuges now in the system to its objective level (maximum production of benefits) would require approximately \$170 million in development funds. With these new facilities and assuming existing facilities were operated and maintained at maximum efficiency, it would require an additional \$34 million, and approximately 2,000 man-years of labor. More realistically, however, to develop the refuges to a point of being able to maintain facilities and produce the most essential benefits (those primary purposes for which the individual refuges were established) would require approximately \$60 million in development funds. Also, an additional \$12 million in operations and maintenance and 600 man-years of labor would be needed annually.

The above comments and funding requirements apply only to established areas. Expenses will increase considerably with the addition of the proposed Alaska refuges and the other special kinds of refuges previously discussed.

Between 1971 and 1974, public use on national wildlife refuges has increased at a rate of 3.6 percent annually. Approximately 21.3 million visits occurred on refuges during 1974. We have developed objectives and plans for wildlife-oriented public use programs as an integral part of the total system. In the past few years, we have been stressing our wildlife interpretive programs over general recreation activities.

We appreciate the opportunity to provide the information you have requested. Under such severe fiscal constraints, we are unable to carry out the acquisition and management programs needed to meet Service objectives. However, we will continue to do the best we can under such circumstances and are grateful for the support you and other concerned individuals have given us over the years. If you have additional questions, please do not hesitate to contact us.

Sincerely yours,

LYNN A. GREENWALT,
Director.

U.S. DEPARTMENT OF THE INTERIOR,
FISH AND WILDLIFE SERVICE,
BUREAU OF SPORT FISHERIES AND WILDLIFE,
Washington, D.C., June 12, 1972

Mr. DANIEL A. POOLE,
*President, Wildlife Management Institute,
Washington, D.C.*

DEAR MR. POOLE: This provides comments on your letters to Senator Warren G. Magnuson, Chairman of the Senate Committee on Commerce, and to Mr. Edward A. Garmatz, Chairman of the House Committee on Merchant Marine and Fisheries, regarding the acquisition and management of land within the National Wildlife Refuge System.

We believe your questions regarding the increase in the cost of the Duck Stamp and its influence on the refuge acquisition program are appropriate at this time. Your concern for the acquisition, development, and operation of lands within the National Wildlife Refuge System is appreciated.

Your letters raise questions in three areas dealing with (1) land acquisition goals of the Refuge System, (2) acquisition and goals under the Accelerated Wetlands Program, and (3) the adequacy of the Refuge System to meet management objectives. Our answers will respond in that general order.

As you will recall, the study of the National Wildlife Refuge System by the Advisory Committee on Wildlife Management (Leopold Committee) in 1968 concluded that, "The national wildlife refuges constitute an open-ended system, and units will doubtless be added and others deleted indefinitely into the future. But these adjustments should follow a systematic procedure aimed at satisfying firmly defined goals."

We believe this statement is still valid. The National Wildlife Refuge System now has goals and objectives which provide guidance for existing and proposed additions to the System. National goals, however, are not now sufficiently precise to define the optimum limits of the System.

For example, Refuge System goals and objectives guide us in the management of endangered species on existing refuges and refuge areas proposed for acquisition. The objectives do not yet address themselves to the optimum number of refuges or acreage need in the System for endangered species, however. The Refuge System is presently shaped by past legislation primarily directed toward preservation of the migratory bird resource and of endangered wildlife species. Current legislative proposals and the desire of the American public for wildlife-oriented recreational opportunities that can be provided on national wildlife refuges indicate that refuges for special purposes should be considered.

Examples of pending legislation include H.R. 13243 to provide for the establishment of the San Francisco Bay National Wildlife Refuge, H.R. 70888 to provide for establishment of the Tinicum National Environmental Center, and H.R. 10310 to establish the Seal Beach National Wildlife Refuge. These areas vary in size from 700 acres to almost 22,000 acres. They suggest expanded programs to assure estuarine preservation, provide wildlife areas in urban locations, and environmental and wildlife-oriented educational programs. Proposals of this type, having previously been recognized, dovetail well with the objectives of the Refuge System. More study will be necessary prior to predicting acreage and locations for such areas which should be included in this relatively new concept for refuge establishment and management.

In support of these new programs, Nathaniel P. Reed, Assistant Secretary of the Interior for Fish and Wildlife and Parks, before the House Interior and Insular Affairs Committee, Subcommittee on National Parks and Recreation, on February 17, 1972, noted that several acquisition proposals that lend themselves to management by the Bureau of Sport Fisheries and Wildlife have been found to have a high potential for satisfaction of wildlife-oriented recreation needs of urban populations.

In response to how refuges fare in the Administration's Land Excess Program, the Refuge System has been considered exempt from the review required under Executive Order No. 11508. We are currently screening properties of other agencies that are being reported excess under this Executive Order for possible inclusion in the Refuge System. Among those now being considered are islands near Culebra in Puerto Rico, which are about to be declared excess to the needs of the Navy.

Prior to answering your questions relative to the Accelerated Wetlands Program, we believe the following brief history is in order. As you will note, the program terminates at the end of fiscal year 1976 instead of fiscal year 1978.

Because hunting stamp receipts were insufficient for acquisition of land at an adequate rate, Congress approved the Wetlands Loan Act on October 4, 1961 (16 U.S.C. 715k-3-5). This Act authorized appropriation of up to 105 million dollars over a 7-year period (fiscal years 1962-68) as an advance to the Migratory Bird Conservation Fund, to be repaid with 75 percent of the annual hunting stamp receipts commencing in fiscal year 1969. Public Law 90-205 dated December 15, 1967, extended this legislation for an additional 8 years to the end of fiscal year 1976 and defers repayment of the advance until the beginning of fiscal year 1977.

At the start of the accelerated program in 1962, about 3,500,000 acres of migratory waterfowl lands were in Federal ownership. To protect the resource adequately, it was estimated that it would be necessary to acquire another 4,500,000 acres, of which 2,500,000 acres would be required for Federal acquisition under the accelerated program. These data are provided below under the 15-year goal column under the table listed as Accomplishments 1962-71.

Appropriations through the first 10 years of the Accelerated Waterfowl Land Acquisition Program (1962-1971) are as follows:

Loan fund advance.....	\$66, 800, 000
Annual sale of duck stamps.....	51, 242, 000
Total	118, 042, 000

The remainder of the loan fund authorization for fiscal years 1972-1976 is shown below. It is estimated that because of increased land costs, only about 2.2 million of the 2.5 million-acre goal will have been acquired through fiscal year 1976.

ACCOMPLISHMENTS 1962-71

	Attained acres	15-yr goal
Refuges.....		
Waterfowl production areas:	355, 000	750, 000
Fee.....	275, 000	600, 000
Easement.....	830, 000	1, 150, 000
Total	1, 460, 000	2, 500, 000

When the Wetlands Loan Act terminates at the end of fiscal year 1976, assuming full appropriation of the remaining \$38.2 million from the loan fund and projected receipts from \$5 hunting stamps, the following accomplishments are anticipated:

PROJECTED ACCOMPLISHMENTS (1962-76)

	Acres	15-yr. goal
Refuges.....		
Waterfowl production areas:	489, 000	750, 000
Fee.....	521, 000	600, 000
Easement.....	1, 150, 000	1, 150, 000
Total	2, 160, 000	2, 500, 000

As can be seen from the above figures, approximately 340,000 acres would remain to be acquired to meet the 2,500,000-acre target. There are three alternatives which are possible at the termination of the present Wetlands Loan Fund Authorization: (1) Extension of the authorization to increase the Loan amount and extend the time period, (2) nullification of the payback requirement, or (3) repayment as required beginning in fiscal year 1977. If the Loan Act is extended and a loan of \$7.5 million per year is appropriated in addition to the receipts

from the \$5 hunting stamp, the target goal should be accomplished in fiscal year 1980. Foregoing the payback requirement would allow for completion in fiscal year 1982. Under the terms of present legislation, which require the repayment to begin in 1977, the stated acreage goal could not be reached until well beyond the year 2000.

In addition to Duck Stamp purchases, 28,425 acres of land have been added to the Refuge System under the Land and Water Conservation Fund Act since 1967. Land for endangered wildlife species includes 27,002 acres and the addition of small units to existing refuges for recreation mitigation accounts for 1,397 acres. New refuges acquired since January 1, 1960, other than through the use of Duck Stamp and LWCF funds, have totaled 467,366 acres. Withdrawals from the Public Domain, transfer of Federal excess lands, and overlay refuges on Federal water resource projects account for this acreage. The National Wildlife Refuge System now includes 30,848,878 acres.

You are, of course, aware of the Alaska Native Claims Settlement Act and the probability of considerable acreage of wildlife habitat being added to the Refuge System. The enclosed map provides information about areas that are being considered. Approximately 80 million acres comprise the National Interest Study Area (indicated in gray) for consideration for refuges, national parks, national forests, or wild and scenic rivers. About 60 million acres of this land has nationally significant fish and wildlife value. The brochure entitled "To Have and to Hold" further delineates important wildlife areas in Alaska not presently included in the Refuge System.

We cannot respond directly to your question regarding comparison of wetland acquisition accomplishments to wetland losses. Fortunately, there have been some recent favorable changes to reverse this trend. Public awareness of the many values of wetlands has increased tremendously. The Water Bank Act, which is aimed specifically at wetlands preservation, will soon be implemented by the Department of Agriculture. Contracts placing wetlands in the Water Bank Program should be in effect this year. In the past few years, there have been numerous high-level reports which point out the inadvisability of wetland drainage for "reclamation" of new cropland. As an example, the National Academy of Science's report issued in 1970 and entitled "Land Use and Wildlife Resources" states, "While the drainage from properly used agricultural lands is essential, the reclamation of new crop acreage through public subsidies should be terminated." Nevertheless, private drainage continues at an alarming rate.

Your last major category of questions deals with the adequacy of the refuge program. During recent years the mission and management objectives of the National Wildlife Refuge System were reexamined and defined by publication in "Wildlife Refuges Handbook 4, Objectives." (A copy is enclosed for your reference.) More recently, individual refuge objectives and management plans were prepared for most refuges. (A few unstaffed areas remain to be completed.) This in-depth soul-searching systems approach to setting refuge objectives was completed for the first time during 1971. Each year these objectives will be reviewed and adjusted as appropriate. In addition to the existing 328 refuges, 104 formalized master plans have been prepared. Copies of these plans can be provided if you so desire.

Under the concept that individual refuges were acquired to produce benefits at a certain level of production and that this level is currently specified in the individual refuge objectives, the Department does have authority but not the manpower or funding to manage all national wildlife refuges as intended. The current annual budget for the operation and maintenance of the Refuge System is \$21 million. Current construction funds amount to \$2.4 million of which \$1.5 million is earmarked for pollution abatement work and \$125,000 for planning and water rights investigation. A backlog of facility rehabilitation needs now approaches \$50 million. This results largely from inadequate maintenance funding in past years. The current construction budget contains only \$375,000 for facility rehabilitation work.

More specifically, the Refuge System is currently operating at one percent, 53 percent, and 59 percent of the objective level for capital investment funds, annual operations and maintenance funds, and manpower, respectively. The National Wildlife Refuge System has been seriously overcommitted for some time and the consequences of this over commitment are evident in poorly maintained facilities, inadequate facilities and services for the public, and too few people available to do a proper job of refuge management.

To develop each of the 328 refuges now in the System to their objective level will require \$161 million. With developments, an additional \$16 million for operation and maintenance funding and 738 man-years of employment should be provided. There are currently about 950 employees in the Refuge System.

The above comments and funding requirements apply only to established areas. Expenses will increase considerably with the addition of the proposed Alaska refuges and the other special kinds of refuges previously discussed.

It is apparent that refuges are not being developed and maintained properly. On the contrary, the Refuge System is heavily committed and the overall condition of structures, facilities, and services are deteriorating daily.

Public use on national wildlife refuges is increasing at the rate of 11 percent annually. Approximately 19.0 million visits occurred on refuges during 1971. Objectives and plans for the wildlife-oriented public use program are an integral part of the total developments of the System. In the past few years, progress has been made in emphasizing wildlife interpretive programs over general recreation activities. Use of the refuge for environmental education purposes is on the threshold of becoming a significant part of the outstanding benefits that refuges have to offer. Policies and guidelines have been prepared to develop the kind of public use program that will represent the purpose for which the refuges were established. As funds and qualified personnel are made available, refuges will serve as model areas for wildlife appreciation and understanding.

We believe that wildlife and man can, within reason, exist harmoniously on refuges, provided controlled programs are developed and personnel are available to administer them. Where areas of incompatibility exist, our policy has been and will continue to be that of favoring the wildlife over public use.

The enclosed visual aids will assist in clarifying data we have provided.

We appreciate the opportunity to respond to your comments and trust that the information provided will prove enlightening to you as well as to both Chairmen Magnuson and Garmatz and their respective Committees.

SPENCER H. SMITH,
Director.

Mr. POOLE. During the 1975 fiscal year the service is investing only \$20 million in refuge system field operations. That equals 63 cents an acre and is \$7.1 million less than needed by the service's estimates to maintain a 1970 funding level. That amount does not include moneys needed for areas added since 1970 or for rehabilitation of facilities.

No persons outside the Fish and Wildlife Service can evaluate the current and needed investments in the refuge system. The budgeting by objective procedure imposed in recent years precludes clear understanding of fund allocation to individual programs. The refuge system is a good example of that faulty budget procedure. Portions of moneys appropriated to various objectives—such as endangered species—are combined to make up the Refuge System budget.

We cannot determine how much that amounts to without going to the agency. It is impossible to determine from budget documents. I expect that most Members of Congress must find out the same way also.

Thus, the problem is evident and has resulted in a loss of support for the system simply because outsiders cannot determine what is going on. Even though inadequate financing and personnel are major problems, they are by no means the only ones.

Mr. Givens commented earlier and you asked questions about the morale within the system. Also inappropriate wilderness designations have been proposed and applied in some refuges. Areas of the Key Deer National Wildlife Refuge were put in the national wilderness system last year in spite of the fact that research has shown that hab-

itat alterations inconsistent with the Wilderness Act were needed there to benefit the deer.

The Moosehorn refuge in Maine is another example. It was an ideal area for specific species research and management. It was designated a wilderness area and the research on woodcock has been stifled. It is not a matter of wilderness being incompatible with all refuges. Some areas should have that status. But habitat management operations which are in the best interest of wildlife should not be foreclosed.

Another problem is the lack of firm continuous policy to guide the refuge system. Guidelines change with each political migration. Refuges have been programed and reprogramed and wildlife is being smothered in words and paper. A raft of these problems began in the early 1960's. Master development plans were originated. They never amounted to much for wildlife. Millions of dollars were invested. In the mid-1960's came the maintenance and rehabilitation study. It languished for several years without adequate funding and manpower. In 1965 planning, budgeting and programing came along. In that approach all of the services of the Fish and Wildlife Service were to be consolidated.

The flyway habitat management unit project is another mid-1960's program which overlaid the others. Yet another effort called "systems" appeared. It is a nebulous thing, incomprehensible for most refuge employees. It overcomplicates refuge developments and objectives which should be a matter of commonsense.

We now hear of much dissension within the refuge division over the new organizational structure of the Fish and Wildlife Service. At the Washington level, the refuge division appears to have lost its voice in making decisions affecting the system.

Such responsibility has been assigned to two program managers, one category coordinator and three program coordinators, the office of Endangered Species, Office of Environmental Education and others. Current reorganization proposals would duplicate that structure at regional offices. If implemented, the refuge system would be identified at the lowest possible level. All identity and stature would be lost in the regions as it has been in Washington.

That is a further deemphasis of the refuge program.

Mr. Chairman, those who purchase duck stamps have paid a large part of cost of acquiring lands for the Refuge System. They are contributing more than \$10 million a year for that purpose. The general public contributes through appropriated funds. I would like to point out that the duck stamp purchaser as a taxpayer is contributing through appropriated funds in addition to his investment in the duck stamp. These people are interested and they deserve to know if their money is being invested wisely for the benefit of wildlife.

We hope the hearings will air the problem of our Refuge System. We want the hearings to improve the refuges for all wildlife and for the people.

Senator Moss. Thank you for your comments. We appreciate your appearing as a representative of the Wildlife Management Institute.

Mr. Givens objected strongly to the memorandum of understanding for the management and administration of the system that is currently being negotiated with the several States.

Do you have problems with this cooperative agreement and what role, if any, do you believe the States should have in the administration and management of the Refuge System?

Mr. POOLE. I have not seen the memorandum of understanding in any draft at all. I would find it difficult to respond generally to it. I think that some of these problems have to be faced on a case-by-case basis. There most likely are a number of areas within the National Wildlife Refuge System which might more properly be under some other management. As I say, they would have to be looked at on a case-by-case basis. We will not support anything however, that would erode the National Wildlife Refuge System, its basic objectives and purpose. We think the System is outstanding. The program is outstanding. We think it should receive the support that always has been indicated but not really been forthcoming.

Senator Moss. Mr. Givens feared that if the Refuge System was passed off to the States that the States' interest will be in enhancing fishing and hunting. Do you have worries of that sort, that the State focus would be on game sport rather than preservation?

Mr. POOLE. That would vary by State, Senator. Some states are not as far along as others. A broader viewpoint on all wildlife, as opposed to game species is necessary. In some cases, most of a State agency's money comes from the sale of hunting and fishing licenses.

They feel, therefore, an obligation to focus on game species. A number of States now have become progressive in all wildlife areas, as opposed to game species.

With the passage of the Endangered Species Act and its section 6 authority for cooperative Federal-State programs on endangered species, I think the States will become more active in a total wildlife program as opposed to a sports program only.

Senator Moss. That is what I was going to ask, whether you felt that the States possess the expertise, let's say, to do a management program, biologically and otherwise, or whether they are simply capable of policing functions with respect to game and fishing management.

Mr. POOLE. Numerically, the States have many more biological employees than the Fish and Wildlife Service. As a generalization, the approach to managing or handling or protecting or conserving, or whatever word one might want to apply, a cardinal is virtually the same as for a grouse.

The techniques are much the same. The procedures are much the same. We have taken the stance repeatedly before this committee and the House Merchant Marine and Fisheries Committee that what is needed is to develop the utmost opportunity for cooperation between the Federal and State Wildlife people. Collectively, the number of personnel the Federal and State agencies have and number of dollars they have are still too few for the job.

We can't have these schisms. These agencies must get together and work cooperatively in the interest of all wildlife.

Senator Moss. You cite the lack of attention that the System received from the Service and Department in terms of funding personnel and priority. Do you feel it is necessary to establish a separate

bureau of refuges in the Fish and Wildlife Service, so that the System may once again be properly maintained?

Mr. POOLE. What the device is or may be, I don't know. I do feel that the National Wildlife Refuge System should be enhanced and be given a greater role and more exposure within the U.S. Fish and Wildlife Service.

I am personally opposed to the idea of creating a separate agency or bureau to handle National Wildlife Refuges, because there are many other programs involved in the National Wildlife Refuge System. Examples are the migratory bird responsibilities of the Federal Government, endangered species responsibilities, law enforcement, and research. I think all these responsibilities are best handled within the Fish and Wildlife Service. I would support a move to give the National Wildlife Refuge System more visibility. I might point out, Senator, that mention was made earlier of the U.S. Forest Service. The U.S. Forest Service, while it is a single agency, it has three major parts, State and Federal forests, research, and the National Forest System. Because of their interrelationships, the three parts are one agency.

Senator Moss. Turning to H.R. 5608, the Wetlands Loan Act extension, I know you are familiar with this act. The Department of Interior has proposed that the price of the duck stamp be tied to land-acquisition costs, so that as the price of wetlands increased the funding base for acquiring these areas will increase as well.

Do you agree with that suggestion?

Mr. POOLE. I have heard it for a number of years. I find it difficult to agree with. Scaled out, the figures I have heard could raise the duck stamp within the next 2 or 3 years to somewhere in the range of \$20 to \$30. The effect of it would be to limit waterfowl hunting opportunity to those willing or able to put out that much money for a duck stamp.

Actually, I look upon waterfowl and wetlands acquisition the same way I look upon any Federal program. If the Congress and the administration think well enough of an issue to create a Federal authority for it, I think the action also carried a responsibility and obligation to fund it. This country entered into migratory bird treaties with Canada, Mexico, Japan. Congress thought well enough of it as a Federal undertaking. In my view, having taken that action, Congress also has an obligation to fund it, as well as it would in transportation, social programs, or communications. With the creation of this authority and assumption of this authority, should go also the responsibility to fund it and see it through. I do not look upon the duck stamp as a sole means of financing wetlands acquisition. I look upon it really as an additional contribution of a certain group of interested people to help accelerate this program.

Senator Moss. Do you think it would be appropriate to amend H.R. 5608 to forgive the Department of Interior the debt it has incurred thus far in connection with the advance wetland acquisition program?

Mr. POOLE. It is worthy of study. It started out as a 7-year program. It was extended for an additional 8 years. Land costs have tripled during this period of time.

Senator Moss. If it is extended, do you think future debts would come under the same kind of forgiveness later?

Mr. POOLE. I'm not opposed to the idea of forgiving the indebtedness and not having any further wetland loan exemption, providing the

Congress and the administration would request and appropriate an adequate level of funding.

I think the Wetlands Loan Act was a device at one time to help move the program a little off dead center. It hasn't accomplished its purpose by any means, although it has done some good.

Senator Moss. Some people fear too much emphasis has been placed on the use of refuges for consumptive purposes like hunting rather than for strictly conservation purposes.

Do you agree with that?

Mr. POOLE. Not the example of hunting, certainly. There is a definite limitation in law; 40 percent of an area may be opened for hunting. There have been some refuges where recreation, boating, swimming, and nature observation have created problems. These problems arise not only from the physical presence of people, but from the need to provide them with sanitation, water, safety facilities, and all the rest.

Public use of that kind has created problems.

Senator Moss. So you feel that recreational type programs help to create a problem in this?

Mr. POOLE. Very definitely.

Senator Moss. Yet wildlife refuges are not strictly for wilderness purposes. They are not only for the preservation of game species but also for giving the public an opportunity to observe our view of wildlife.

Mr. POOLE. There is a Refuge Recreation Act which sets forth that recreation will be accommodated where it is appropriate as a secondary and incidental use.

I subscribe to that thought. With these areas as unique as they are, wildlife must be put first.

Senator Moss. Thank you, Mr. Poole. We are always glad to have you before the committee.

Mr. Forrest Carpenter, president of the National Wildlife Refuge Association, from Minneapolis, Minn., is our next witness.

Mr. Carpenter, we will hear from you, sir.

STATEMENT OF FORREST CARPENTER, PRESIDENT, NATIONAL WILDLIFE REFUGE ASSOCIATION, MINNEAPOLIS, MINN.

Mr. CARPENTER. Mr. Chairman, I have submitted a rather lengthy statement for the record. I would like to comment on certain portions of that statement—to add additional thoughts on our concern for what is happening to the National Wildlife Refuge System.

Senator Moss. Your statement in full will be placed in the record. You may deal with it as you like to.

Mr. CARPENTER. My name is Forrest Carpenter. I appear before your subcommittee today as president of the National Wildlife Refuge Association, a nonprofit organization headquartered in Minneapolis, Minn., and dedicated to the preservation and perpetuation of the National Wildlife Refuge System.

I am a retired Federal employee. I served more than 36 years with the U.S. Fish and Wildlife Service and its predecessor agencies. Most of my career was devoted to working in and for the National Wildlife Refuge program.

I have visited most of the national wildlife refuges and am personally acquainted with at least 75 percent of the working group of refuge managers. A more dedicated, more conscientious, more hard-working group of professionals cannot be found anywhere.

Our organization, which has a nationwide membership, came into being last January as the outgrowth of a sincere concern by the Fish and Wildlife Service employees, former employees and friends that the Refuge System was being systematically dismembered by changing philosophies and priorities within the Department and the Fish and Wildlife Service.

In February 1973 a directive came to the Assistant Secretary for Fish and Wildlife and Parks from the Assistant Secretary for Program Policy to initiate plans to deemphasize as rapidly as possible Federal involvement in the management of fish hatcheries and wildlife refuges.

Through shifts in funding priorities, Service reorganization, and a new program management system, these plans are well underway.

As you perhaps know, the Service, about 3 years ago, restructured its organization to provide for a new region 6, headquartered in Denver, Colo.

This region was organized on an experimental basis to provide decentralized authority to area managers to supervise virtually all Service programs within one-, two-, or three-State areas.

A three-man task force of competent Service personnel was assigned to evaluate the region 6 organizational concept and to provide its recommendations to the Director.

The task force was not unanimous in its opinion as to whether the region 6 concept should be adopted but, strangely, the minority recommendation of one member who supported the concept was adopted.

The nationwide reorganization of the Service is now proceeding with 13 new area offices and a wholesale restructuring of the other regional offices.

It has never been explained to us how the expenditure of the large amount of funds required for this reorganization effort can come from funds appropriated by the Congress for other specific purposes.

The new program management system has been much heralded by the Fish and Wildlife Service as "a sophisticated and responsive planning, budgeting, accounting, and management information system."

Washington Office Service personnel seem to feel that this program management system is the ultimate solution to organizational management.

As a matter of fact, a substantial number of experienced, intelligent, and well-informed people inside and outside the Service are at a loss to recognize either the logic or the practicality of the Service's program management system.

These feelings seem to be aptly summed up in an April 11, 1975, memorandum from the acting regional director of region 2 to the Director. I would like to quote a portion of this memo.

This memorandum and its attachments . . . are a reflection of considerable work by no less than fourteen experienced and capable regional personnel at the grades of GS-12 through 14.

Now that we have made a full-scale concerted effort to implement the Program Management System, we have a few observations and comments to offer based upon our collective experience and opinion.

All of our people have approached this effort with an attitude of dedication to Service objectives and programs.

After the initial period of reservation and concern toward the new system, we have had complete cooperation and hard work from our people.

Even though we run the risk of sounding negative, we feel obligated to express our concerns. Simply stated, there has to be a better and simpler way of doing business.

In spite of this feeling by regional personnel, and some Washington office people, the new program management system is proceeding as the new way of life for the Service.

Under these new program management and organizational concepts there is no longer any advocate or coordinator for the refuge system at either the directorate or regional directorate level.

Consequently, the refuge system does not receive solid central direction, as a true system should, for its operation and development.

Instead, it receives fragmented and uncoordinated directions from several divergent sources with little or no concern for, nor appreciation of, the impact these directions have upon the interwoven management picture.

The National Wildlife Refuge System was once a strong, cohesive, viable system with commonly understood goals. Now its efficiency and effectiveness as a wildlife habitat management system have been seriously eroded.

There are today manifestations of serious neglect of the refuge system.

Except for a few individual refuges where special political interest has brought about some semblance of proper development, the refuge facilities built largely by the CCC's in the 1930's are crumbling to ruin.

Its responsibilities for wildlife management, environmental study, public recreation, and other uses have multiplied while the funding necessary to maintain and sustain these programs has diminished.

On February 2, 1975, the Service requested its regional offices to provide a breakdown of refuge funding for fiscal years 1974 and 1975.

In addition to providing the requested dollar figures, some of the regional offices also submitted written comments on the condition of refuge funding in their regions.

These comments are quite enlightening since they clearly show the adverse impact of Fish and Wildlife Service budgetary decision on the refuge system.

For example, one region's analysis revealed a \$483,000 reduction in refuge funding from fiscal year 1974 to fiscal year 1975.

Another reports that so much of its funds are now required for permanent salaries that 30 employees would have to be fired in order to free up enough funds to carry out a reduced but balanced program.

This same region reports that its refuge facilities require \$1,050,000 for routine custodial maintenance. Yet, the region can only afford to spend \$520,000 for this purpose.

No wonder refuge facilities are deteriorating.

Still another region reports a loss of 93 refuge employees between 1972 and 1975.

We believe you will find these reports of interest and offer copies for your review.

The seriousness of the situation is exemplified by a recent Service staff report which states that, "The high esprit de corps of refuge per-

sonnel as members of the NWRS and the FWS was widely recognized. Now many refuge employees do not oppose the separation of the NWRS from the FWS."

In addition to the recent attempts of the Service to divest itself of responsibility for management of three of the national game ranges through their transfer to the Bureau of Land Management, we have been greatly concerned by the recent circulation of draft cooperative agreements to every State in the Nation for review and comment.

These agreements, once signed, would pave the way for the assumption by State game and fish departments of the management of national wildlife refuges.

Although we recognize that sound and amicable Federal-State cooperation is essential to the overall natural resource conservation effort in this country, the broad mission of the National Wildlife Refuge System is national in scope and importance and cannot be fostered by the joint management of this system by a variety of governmental entities.

Specifically, we have information of the Service's desire to divest itself of the management of such superb refuges as the National Bison Range in Montana, the Wichita Mountains Refuge of Oklahoma, the Crab Orchard Refuge in Illinois, the Necedah Refuge in Wisconsin, the National Elk Refuge in Wyoming, and others.

The Service has long held the philosophy that it is more important to purchase wildlife lands or potential wildlife lands in order that they may be protected as a part of the refuge system than it is to utilize available funds for developing and maintaining lands already acquired.

Up to a point we believe this is sound, but we must realize that the time approaches when development of these lands is absolutely necessary if their potential is to be realized and public commitments are to be honored.

During my tenure in the Service I participated in many public meetings where acquisition, development and management plans were outlined in glowing terms. Landowners were convinced that it was in the public interest for them to sell.

It is shameful and embarrassing to recognize that we have major refuges acquired 20 years ago that are still undeveloped.

At the same time that the Refuge System is charged with additional responsibilities and experiencing increased pressure for public enjoyment of the natural scenes found on these refuges, the Fish and Wildlife Service itself is receiving expanded nonrefuge authorities and responsibilities for the protection of wildlife.

New functions of the Service including monitoring of new technology in energy development, reviewing impacts of stream alteration, and other geologic modifications, international responsibilities to curb the decline of endangered wildlife species, et cetera. These are taxing the financial capabilities of the Fish and Wildlife Service to meet its obligations.

The Service, in typical bureaucratic fashion, assumes that each new law passed by Congress supercedes in priority all previous laws passed by Congress and thus must be implemented regardless of whether or not funding is made available.

The result of this chronologic mentality is that funds which were going to the older programs in the organization are being diverted to pay the cost of the newer programs.

For some reason which escapes comprehension, the Fish and Wildlife Service operates on the assumption that it can do everything that anybody asks it to do.

The motto "Ours is not to question why; ours is but to do or die" is not to be found anywhere in more open and total application than in the Fish and Wildlife Service today.

And, with all due respect to Congress and the American people, there are many people who are more than happy to capitalize on this sacrificial disposition of the Service.

Actually, the Service is deceiving both Congress and the people into thinking that the broad and worthwhile objectives handed to the Fish and Wildlife Service can be done with a minimum outlay of funds.

Since the National Wildlife Refuge System is under the guiding hand of the U.S. Fish and Wildlife Service, the attitude of the Service governs the ability, or lack of ability, of the Refuge System to fully express its needs to Congress and the American people.

Mr. Chairman, we would like to have it clearly understood that the association does not fault individuals within the Fish and Wildlife Service or the Interior Department as solely responsible for the problems currently facing the Refuge System.

While we believe that some people in the Interior Department and the Service are not informed about the national importance and public support for the Refuge System and regarding the kind of money and manpower required to operate this system effectively, we honestly believe that most of the men who make the day-to-day decisions regarding the conservation and management of our natural resources are sincere in their efforts to do the best job they can.

What we believe is lacking is a clear mandate from Congress regarding the long-range overall mission of the Refuge System and a declaration that the Refuge System is and should be a viable agency, separately funded and managed.

The enactment of S. 1268 will accomplish this objective.

We believe that the strength and vitality which Congress has seen fit to insert into the Nation's forest management program through the U.S. Forest Service and its park program through the National Park Service should also be vested in this Nation's wildlife refuge heritage through a National Wildlife Refuge Service.

We have discussed the problems of the Refuge System and its relationship to other activities in the Fish and Wildlife Service for many years with a great number of people.

The idea of a separate agency of the National Wildlife Refuge System is not new and, in all honesty, is not shared with equal commitment by everyone with whom we have discussed the matter.

Our position and our feelings with regard to separating the Refuge System from the Fish and Wildlife Service are viewed by many people, principally nonrefuge people within the Fish and Wildlife Service, as a denigration of the importance of other functions of the Service.

We would like no one to misunderstand our position with regard to the functions of the Fish and Wildlife Service.

We believe, without doubt, that many of the other activities of the Fish and Wildlife Service are vital to this Nation's welfare. We do not wish to give the impression that the Refuge System is the only important program in the Service.

As a matter of fact, we are convinced that if the Refuge System were separated from the Fish and Wildlife Service and made a separate agency, both the Refuge System and the Fish and Wildlife Service would benefit.

Assistant Secretary Reed and others have expressed the desire to make the Fish and Wildlife Service the "biological arm of the Government."

As such, the Service would fulfill a vital role as a regulatory and technical service agency.

This role requires that the Service be highly mobile and flexible, able to respond to each crisis as it arises, able to quickly reshape its programs as needs for biological assistance and services change.

These changes can occur on an annual, and sometimes on a monthly basis. Thus it is critical that this "biological arm of the Government" possess an organizational structure and a management philosophy which will make it adaptable and amenable to frequent changing conditions.

On the other hand, the National Wildlife Refuge System is a long-term program. Because the System deals with the lands and its responses to management practices, objectives and goals for its operation must be expressed in 10, 20, or even 50-year terms.

By its very nature the Refuge System cannot be managed on the basis of short term, ever-changing priorities.

Wildlife responses to habitat changes take years, even decades, to reach the desired status. Facilities and structures required for refuge management are very costly and must be planned, constructed, and properly maintained for a 30- to 50-year management program.

Direct public uses of refuge lands, once they are approved and initiated, become a commitment which is expected to continue for many years.

People are not receptive to, or understanding of, rapid changes in what they can or cannot do on a national wildlife refuge.

While other functions of the Fish and Wildlife Services are geared to today's problems and the solutions to today's crisis, the National Wildlife Refuge System must plan and work for the needs of generations not yet born. It often takes many years to fulfill these needs once they are identified.

As you can see, the National Wildlife Refuge System is functionally and philosophically different from most of the Fish and Wildlife Service.

Because of this, the Refuge System today poses a burden upon the Service. The Service is required to view the Refuge System in a different frame of reference from the remainder of its activities.

We believe it impossible for any agency to effectively manage its affairs with this type of schizophrenic decisionmaking mechanism.

The present dilemma within the Fish and Wildlife Service graphically supports this belief.

Distinctiveness, professionalism, pride, dedication, vigor, foresight, and integrity are vanishing from the Refuge System. It is losing its identity, it is losing its stewardship ethic, and, we predict, it will lose its value to this Nation unless Congress acts decisively and purposefully to re-create the System in terms of Senate bill 1268.

We believe, Mr. Chairman, that without this type of reaffirmation of congressional intent, the Refuge System will in a few short years cease to play a viable role in this Nation's conservation program.

We are convinced that you and the members of your subcommittee will draw a similar conclusion as a result of these oversight hearings. [The attachments referred to follow:]

QUESTIONS FOR THE ADMINISTRATION

GENERAL

1. You have previously testified before another committee of Congress that the National Wildlife Refuge System supports other programs of the Fish and Wildlife Service. Could you tell us what these other Service programs are and in what way they are dependent upon the Refuge System?

2. Do you feel that the National Wildlife Refuge System should serve as an international model of successful, effective and professional wildlife and land management principles? If so, do you believe the National Wildlife Refuge System is now fulfilling this role?

3. Do you consider the National Wildlife Refuge System to have the same stature and national importance as the National Park Service?

4. Has there been a further reduction in the total staffing of refuge field stations during this past fiscal year? Please show the number of these types of personnel on board on July 1, 1974 and on July 1, 1975.

5. What role can and should the National Wildlife Refuge System play in environmental education nationwide? Do you expect to be able to attain this goal in the foreseeable future? If not, why not?

6. You testified before the House Interior Appropriations Subcommittee that you have only one Public Affairs Officer in each Region. Do these Public Affairs Officers have staff assistants? We understand that some of your regional Public Affairs offices have at least four employees. Are we correct? Where are the funds coming from to support this activity?

REORGANIZATION PLANS

1. How does the Fish and Wildlife Service intend to maintain the integrity of the National Wildlife Refuge System within the new organizational structure to which you are moving the Fish and Wildlife Service?

2. How many line officers above the field project leader level in the Fish and Wildlife Service make decisions affecting the National Wildlife Refuge System?

3. Who is the top man in your refuge organization? Please give his name, correct job title, background qualifications, and his relative position with respect to the Director. Does he have line authority? Does he have any responsibility for budget preparation or control over refuge expenditures? Does he have any authority over personnel ceilings or allocations thereof? What are his duties?

4. Who is the spokesman for Refuges in the new Service organizational structure? Is there any individual who is responsible solely for refuge operation?

5. In your new organization, who does the refuge manager report to? How many other Service activities is this line supervisor responsible for?

6. We understand that the operations on a single refuge are divided among several Service programs, each the responsibility of a different line official. This sounds like Refuges are being managed by committee. Do you consider this to be the most efficient means of managing the National Wildlife Refuge System?

7. How many different programs is an individual refuge employee dependent upon for his annual salary? What happens to a man's salary and expense allotment when a decision that affects program funding is made independent of other interrelated programs? Who is responsible for coordination of all of these individual program decisions.

8. In your recent testimony before the House Interior Appropriations Subcommittee, you suggested that the so-called problem of managing Canada geese on the Horicon Refuge and in east central Wisconsin would have been simplified if the region had been organized on the basis which is now proposed. Will you please explain how you arrive at this conclusion?

9. Why is morale among refuge employees at such a low level when you and your staff appear so optimistic? Will the new Fish and Wildlife Service organizational structure improve the morale of refuge employees?

10. Other Federal land management agencies such as the National Park Service, the Forest Service, and the Bureau of Land Management employ directorates who devote full time to the administration and management of lands within each agency. How can the National Wildlife Refuge System be properly administered and managed when the directorates of the Fish and Wildlife Service, who are responsible for a wide spectrum of programs, can only spend a relatively small portion of their time on affairs of the National Wildlife Refuge System?

PLANS FOR DISSOLVING REFUGE SYSTEM

1. I have before me a Plan for the Department of the Interior for the mid-1970's (Fish and Wildlife Section) which proposes that four National Game Ranges will be transferred "back" to BLM and that at least some of the 14 big-game refuges be turned over to the states—and offers as examples for disposal the National Bison Range in Montana and the National Elk Refuge in Wyoming. It further suggests the elimination of 90 of the migratory bird refuges. Recent actions suggest that the Department is proceeding with this plan, since attempts are currently being made to transfer "back" to BLM at least three of the national game ranges. Is it still in your plans to turn over to the states up to 14 big game refuges and to eliminate 90 of the migratory bird refuges? If not, what are your present intentions with respect to "eliminations", or reducing, the land management program of the Fish and Wildlife Service?

2. I also have before me a draft of a model cooperative agreement which has been distributed to the states and which the Fish and Wildlife Service is contemplating negotiating with each state game and fish department. The intent of this cooperative agreement appears to be to facilitate the transfer of management of National Wildlife Refuges from the Fish and Wildlife Service to the states. Can you tell us if this assumption is correct? If we are wrong, please tell us why this type of cooperative agreement is necessary?

3. If the present rate of de-emphasis and splintering of the National Wildlife Refuge System continues, how long do you expect it will be before the Refuge System ceases to be an effective and viable national conservation program?

FUNDING DEFICIENCIES

1. You have previously admitted reprogramming funds and manpower from the Refuge System to other Service programs and have indicated that Refuges, in your opinion, are of less importance than these other Service programs. With that in mind, how do you conclude that the National Wildlife Refuge System will be helped by remaining within the Fish and Wildlife Service?

2. How many Refuge System funding and manpower was reprogrammed to other Fish and Wildlife Service programs in FY 1974 and FY 1975?

3. Please compare the NWRS budget for FY 1975 with that of FY 1968 in terms of the value of the dollar in 1968. Compare these figures with the number of Refuge units and total acreages being administered during those years.

4. What is your procedure for initial funding and staffing of new refuges which are acquired? Has this procedure been successful? If not, why has it failed?

5. Under your current budgeting system how can a private citizen, a member of Congress, or anyone for that matter, identify within the Fish and Wildlife Service budget the funding being requested for the National Wildlife Refuge System?

6. How much of your FY 1975 funding for biological services was spent in the last two months of the fiscal year? Is this sound financial management? Should it not have been used earlier in the year to offset some of your Refuge needs? What are your current needs in the Refuge System for operations and maintenance, rehabilitation, and new development?

7. Are funding and personnel ceilings for the Refuge System adequate in your FY 1976 budget? If not, what is the deficit in funds and manpower in the areas of operation and maintenance, rehabilitation, and new development?

8. Do you expect specific Congressional authorized funding for your reorganization planned for FY 1976. If not, where do you propose to get these funds?

Senator Moss. Thank you, Mr. Carpenter.

You endorse the approach of S. 1268. Some, however, criticize the reorganization as being duplicative. Some people think that the

establishment of a separate Bureau of Refuges is unnecessary and wasteful.

Would you give us your reaction to that argument?

Mr. CARPENTER. The establishment of a separate system looks to be the only way to overcome the problems that exist at the present time.

We don't necessarily say this is the only solution. I can conceive of a reorganization within the Service that once again recognizes the refuge system as an important, very vital function of the Service.

The restructuring of the program management system to provide the refuge system with the emphasis and the allocation of the funds and recognition that it should have is possibly one solution to this.

But if the Service internally doesn't feel it should reorganize to give the refuge system strong recognition in its organization, I feel that the only alternative is to go the congressional route through S. 1268.

Senator Moss. As a former refuge employee, what are the factors you believe have been most significant in the recent decline of the refuge system's importance relative to other Fish and Wildlife Service programs?

Mr. CARPENTER. I think the nucleus of the problem lies in the matter of a determination of priorities.

As I mentioned in my statement, the Service has been saddled with many new and additional responsibilities, without new and increased funding to cope with them.

At one time, possibly 10 years ago, the refuge system accounted for 50 percent of the total Service budget; about that percentage of its total personnel.

With the initiation of these new programs and the need for finding funds which were not appropriated, it naturally follows that the Service went to the place where a good share of the existing money was.

They have taken this money over the years to help finance these new programs.

I think this is presently the basis for our concern. It is a shift in priorities which has been brought about by the lack of adequate funding to carry out all of the programs of the Fish and Wildlife Service.

Senator Moss. I mentioned the Leopold committee report citing the need for public interest and involvement in the refuge system. How would you characterize the degree of that involvement and interest at the present time?

Mr. CARPENTER. Well, it has sadly declined at the present time, as the testimony has shown up to this point.

The Service has assigned higher priorities to these other important programs they are involved in. As a consequence, they have given lower priorities to the refuge program, taken manpower and funds to put into the newer programs.

There is no question in my mind that their attention and dedication to the problems of the refuges have deteriorated greatly from what they were a few years ago.

Senator Moss. What steps do you believe that Congress, the Department of Interior, and private organizations such as the National Wild-

life Refuge Association should take to alert the public for its needed involvement in the refuge system?

MR. CARPENTER. That is a good question.

One purpose of the association is to acquaint the public with the problems facing the Refuge System.

I think all of the conservation agencies should also be getting behind this.

I certainly appreciate the testimony from Mr. Poole. I think this is excellent. It is needed from all of the conservation agencies.

Incidentally, one approach that we are very encouraged by is that the Outdoor Writers' Association of America has accepted as their conservation theme for this coming year the national wildlife refuge system and its problems.

I think through the Outdoor Writers and the word that can be spread by that splendid organization that much of this can be brought to the attention of the public.

Congress can do a great deal through active consideration of S. 1268 or some alternative to it. I think they can do a great deal by helping to increase the funding level for the Fish and Wildlife service and particularly the funding level for the national wildlife refuge system.

I think it might be appropriate for Congress in their appropriation actions to be more forceful in indicating that funds appropriated for the Refuge System will be used for the Refuge System and not utilized for other activities.

Senator Moss. Can you give me specific examples of refuge facilities which have been lost through inadequate rehabilitation or maintenance funding?

MR. CARPENTER. It has been 2 years since I have been actively involved in the field inspection of refuge areas.

I know, however, that Crab Orchard Refuge in Illinois has facilities that have deteriorated to the point where they need \$1 million immediately to maintain some important dams, water control structures, and other facilities in that area.

I cite as a particular refuge with which I am intimately familiar in this matter of lack of development and rehabilitation funding; that is, the Sherburne Refuge in Minnesota, north of Twin Cities. I actively participated here in the public meetings which I mentioned where we were successful in convincing the landowners they should sell and make their land a national wildlife refuge. There have been no development or rehabilitation funds available to the Sherburne Refuge.

Senator Moss. Thank you, Mr. Carpenter. We appreciate your testimony. You have been most helpful in our making a record on this problem.

[The material referred to earlier follows:]

U.S. FISH AND WILDLIFE SERVICE,
Albuquerque, N. Mex., April 1, 1975.

U.S. GOVERNMENT MEMORANDUM

To: Director, FWS—Washington, D.C. (AP).

From: Acting Regional Director, Region 2—Albuquerque, N. Mex.

Subject: Summary Memorandum—Program Advices FY 1976—Region 2.

This memorandum and its attachments represent our response to FY 1976 Program Advices. They are a reflection of considerable work by no less than 14 experienced and capable regional personnel at the grades of GS-12 through 14.

Now that we have made a full scale concerted effort to implement the Program Management System, we have a few observations and comments to offer based upon our collective experience and opinions. All of our people have approached this effort with an attitude of dedication to Service objectives and programs. After the initial period of reservation and concern toward the new system, we have had complete cooperation and hard work from our people. Even though we run the risk of sounding negative, we feel obligated to express our concerns.

Simply stated, there has to be a better and simpler way of doing business. The Director and Regional Director do not need 500 pages of the printed word to agree on what should be accomplished in a region for any given year. Our organization is not that large or complex to require such precise guidance. The system is a misnomer. As it is now structured, it does not, and cannot, manage programs because no one has time to manage. It is pure and simple a mechanism to plan and manage dollars—a budgeting system. Our attempt to inject management (direction, decisionmaking) into the system has been a dismal failure. Talented people at all levels of organization are wholly consumed in the process and their only accomplishment is more paper for the files. We must streamline the system or be consumed by it.

We feel the Service is at a cross-road on our total effort of reorganization, but particularly as it relates to the Program Management System. Accordingly, it seems wise to review our involvement to date and appraise the results, and make any necessary adjustments. Therefore, we recommend that a review team, consisting of at least the Associate Regional Directors (representing regional experience) and key Central Office program management and program planning personnel meet for at least one week to review and appraise the program management system. This group should have the delegated authority to adopt consensus changes to the system. If they conclude that the system requires major adjustment or abandonment, a detailed report with appropriate recommendations should be provided for the Director's consideration.

Now that we have expressed our concerns, let us speak of the Program Advices. It is unfortunate that they were late in leaving the Central Office. For the record, we have not yet received an official copy of the one for migratory birds. Because of the short time allowed for regional response, our comments may not have been the quality desired. The independent exercise followed for review of the Endangered Species Program Advice created a considerable amount of extra effort during a period when time was a most critical factor.

The primary factor considered in evaluating FY 1976 Program Advices was program costs associated with the new regional organization, including Area Offices. All operating costs next year must be tied to and assessed to programs. This includes the entire superstructure in the regional and Area Offices. We have assumed that traditional operating Divisions will disappear June 30 and be replaced July 1 with Assistant Regional Directors (3) and Program staffs. Additionally, we have assumed that area offices (2) will not be fully functional until October 1, 1975. Our over-riding assumption is that we have little difficulty negotiating "words" with C.O. program managers and coordinators, but experience has taught us that it is almost impossible to negotiate money and manpower with them after the fiscal year is underway. Therefore, we want a realistic assessment of our funds status known to you in April rather than November.

In order to arrive at this point, we followed a five-step procedure to: (1) Develop realistic cost estimates for operation of the regional and area offices; and (2) determine the amount of funds available for program purposes below the area office level (field operations). Our procedure was as follows:

1. Develop a staffing pattern for the Regional Office and Area Offices for FY 1976 based upon reorganization plans.
2. Determine the total operating costs for these offices.
3. Develop an equitable procedure for assessing programs for costs involved in operating these offices.
4. Estimate FY 1976 Regional Office distributive costs and pro-rate these costs against programs.
5. Develop a funds balance, by program, available for allotment to field stations. This is the basic figure given to the regional program coordinator to "stretch" across all field operations in his evaluation of the Program Advice.

Exhibit "A" is a spread sheet which summarizes the actions taken in Steps 1 through 5 above. It became the basic planning document for distributing program funds for FY 1976 and for assessing our ability to accomplish objectives

as specified in the individual Program Advices. You will note that we plan to have only three Assistant Regional Directors in Fiscal Year 1976. One for Environment, 1 for Wildlife Resources and I&R, and 1 for Federal Assistance and Fisheries. The total costs listed for each of these functions represents the amount of money required to finance the Assistant Regional Director and his program staffs in the Regional Office for the entire fiscal year. Individual entries represent assessed costs against that program to finance that segment of the Regional Office operations.

There are a number of Regional Office functions which do not fit logically into programs. These are included in Columns 2-6. The costs assessed against individual programs to finance the law enforcement effort represents only Regional Office costs for District 6 for the Division of Law Enforcement. The "field stations" total column represents the total amount of funds available for operations below the Area Office level.

Habitat

Environmental Contaminant Evaluation and Land and Water Resource Development Planning present no major problems. We can accomplish all objectives within funds allocation with some internal juggling at the regional level.

Biological Services is underfunded by \$38,000. We need a total of \$143,000 to support the activity leaders and meet the objectives as specified in the program advice.

Federal Aid

Underfunding amounts to \$43,650 (\$5,200 PR and \$38,450 DJ) primarily to cover regional assessment for Federal Aid share of support to new Assistant Regional Director-Federal Assistance and distributive cost.

Fish Resources

FY 1976 reflects a no increase, austere budget for Inland Fisheries for both Fish Hatcheries and Technical Assistance. This translates into a lower level of accomplishment because of inflationary pressures. Principally, we cannot finance any increases in assistance to Indians, the Military or other cooperators next year. It is a less than status-quo program effort. We will not request additional funds for these activities until we receive adequate guidance as to the policy of the Service in providing these types of services.

Administration and Related Support

Initial allotment information indicates we will be \$146,000 short of meeting expenses for next fiscal year. This breaks down as follows:

1. Reimbursable financing (JCC, etc.) was not considered-----	\$30,000
2. Part-time secretarial support for finance and chief, support services--	10,000
3. One-time closeout costs in finance was not considered-----	35,000
	<hr/>
90-day cleanup salaries-----	11,000
Terminal leave -----	3,500
Severance pay -----	20,500
	<hr/>
4. Safety officer and part-time clerical services-----	36,000

If these funds are not provided, we must assess programs to cover the necessary expenses. In the case of reimbursable financing, and others, program funds will be used to subsidize non-Service type activities; i.e., Job Corps. This situation should be reversed.

Wildlife Resources

This is an extremely difficult picture to present. The three programs, plus I&R and Endangered Species, interact and impact in such a complex manner in so many activity areas that one meets himself "coming and going" in attempting to analyze any individual action. We are seriously short of funding to cover essential services in all programs. Realizing that this is a Service-wide problem, we have attempted to determine whether we can use the inadequate funds to sustain a "holding action" program for FY 1976—hoping for better days in 1977. A minimum "holding action" program would pay salaries of personnel presently on board, occupy and protect all field stations, and perform only the highest priority essential services.

Our gross analysis is that we may stretch the funds to barely "get by" in Wildlife Refuges. Most of the money will be expended in the base cost area with very

little left for managing the resource. This is not the type of program we can point to with pride.

We really have no reason to anticipate that the funds picture will be any brighter in FY 1977 or beyond. Therefore, I recommend that the Service adopt, and implement as soon as possible, one of the options contained in Exhibit "B," "Recommendations to Partially Correct Funding Deficiency in Wildlife Refuges—Region 2." Additional data can be supplied to provide you with our rationale for selecting these field stations for closure. Our recommendation is based upon the assumption that funds saved would be reprogrammed to other wildlife refuges in Region 2. If this is not possible, ignore our recommendations—we don't want to be penalized for practicing good management.

In our Annual Work Planning exercise we have not allotted any funds for the Kofa Game Range for FY 1976 on the assumption that BLM will assume full responsibility July 1. Funds provided for Kofa in the various Program Advices have been shifted to Cabeza Prieta. There funds must remain intact at Cabeza Prieta and not withdrawn from the Region. Full jurisdiction, plus additional land area, will require increased manpower and operating funds. We must do more here than we have in the past. We will be in public view with BLM attempting to "show up" the Service in FY 1976.

The Migratory Bird program sustained a cut of \$54,600. Add to this the annualized pay act costs means we face an actual deficit of \$79,100 for FY 1976. It will be necessary to reduce the level of habitat management, censuses and surveys, protection, and banding which will have a direct bearing on meeting national objectives. We will continue to analyze these problems over the next several months and will submit program advice amendments to modify or delete objectives as the picture becomes clear.

The \$27,000 indicated in the Program Advice for Technical Assistance was apparently determined from the amount that was included in the 1975 Technical Assistance base. However, in FY 1975, \$11,000 of Technical Assistance was used for coordination of and conducting cooperative aspects of winter waterfowl and eagle surveys, and migratory bird banding under sub-program definitions which are not applicable to Technical Assistance in FY 1976 under the new system. The Regional Office reorganization will require \$19,100 for Technical Assistance in Federal Assistance and Fishery Resources; therefore, we request that only \$7,900 be transferred out of Technical Assistance which will not leave any funds for field work. An additional \$15,000 will be required to carry out the technical assistance to Indians, other Federal agencies and the States, and to continue raptor work with utility companies. These are in accordance with National Operating Objective No. 11 and Regional Office Objective No. 3.

Reprogramming of the \$7,900 mentioned above to surveys and banding tasks will still not get the job done without additional funding. At least \$3,100 more will be needed for these tasks and for proper execution of National Operating Objectives 4 (Surveys), 8 (Service Field Programs) and 9 (Banding).

The Mammals and Non-migratory Bird Program presents us with similar problems. We are still having to fund the Sevilleta Refuge with money drawn off other refuges, \$32,000 in 1975, which will remain the same in 1976. Rehabilitation allocation for Sevilleta Refuge in 1976 (\$26,000) represents only about 5 percent of the fencing needed. San Andres will be held at standby level of operation with only one man and no facility maintenance to help supply Sevilleta funding.

Reorganization and overhead will drain off \$49,000 more in FY 1976 as compared to FY 1975. Spread over the project offices, this allows less money for basic operations and results in reduced capacity and outputs.

There was \$24,000 allocated in the PA for Technical Assistance. Nineteen thousand one-hundred Dollars of this will be allocated for R.O. reorganization, leaving \$4,900 for field work. In FY 1975, \$21,000 was programmed for field work and \$4,400 for R.O. supervisory staff. It will be necessary to greatly curtail on-going Indian programs in FY 1976. An additional \$20,000 would be required to sustain present on-going activities.

Funding from all sources for Fiscal Year 1976 is \$87,000 short of needs to conduct Law Enforcement activities at the 1975 level. The sum of \$4,186 of this is attributable to the Mammals and Non-migratory Bird Program. This lack of total funding, in which the Mammals and Non-migratory Birds Program participates, will result in failure to be able to follow through with training, medical examinations and full field background investigations, as well as deferral of vehicle replacements as held for.

Based upon the table of comparison submitted with the response to the PA for Animal Damage Control, there appears to be some inequities in the distribution of funds among Regions 1, 2 and 6. It is strongly recommended that the comparison data be given study and consideration.

It is anticipated that the \$16,000 from Habitat Preservation will be made available to the ADC, MB and M&NB Programs. Correspondence on this subject was attached to the response to the PA.

A lack of sufficient Migratory Bird funding for ADC for banding and census work has resulted in some of these functions being assumed by Refuges in FY 1976. The waterfowl damage abatement work unfunded in 1974 and 1975 in sufficient amount to do the job, cannot be covered in FY 1976 unless \$60,000 in additional funds and four positions are made available.

The inter-facing with the programs is very much in need of study and decision making in FY 1976 to insure that ADC is either funded properly to carry out tasks for other programs or relieved of those responsibilities. It appears that some assignments such as migratory bird depredations control are slipping through the cracks and not being given sufficient attention.

No specific objectives in the Interpretation and Recreation Program Advice are singled out as problem areas, but there is a shortage to the field of \$84,000 brought about mostly by the establishment of a program staff for I&R in the Regional Office, and a portion of the cost of two Area Managers' offices. The regional staff, of necessity, includes the YCC Coordinator and the Program Coordinator, with one assistant and part-time clerical help. This is the minimum considered necessary. It is hoped that YCC will be able to pick up the salary and expenses of the regional leader of YCC as that function grows and funding generally is increased.

All field projects utilizing I&R monies will be forced to reduce the level of outputs to accommodate the reduction in field funding. Refuges and Hatcheries will be cut back by \$82,200 and \$7,500, respectively.

Law Enforcement, as a Division, will be seriously underfunded in FY 1976. No new Agents can be added. The principal shortage \$69,000 is in the Endangered Species Program. This amount is needed to accomplish the reduced level of effort agreed upon by the negotiating team during the week of March 31 to April 4. If the funds are not allotted, we will fall short of meeting the LE objectives. We will continue to evaluate the situation and submit amendments when we can determine precisely what we can and cannot do. There is also a shortage of \$4,200 in the Mammals and Non-migratory Bird Program. Funds are needed to cover base operating costs. We can continue a "holding action" program in Law Enforcement with available funds, but it will be at a severely reduced level of effort.

The increased funding for Endangered Species will permit us to establish a regional office capability to manage and direct the program. This is three years too late but, nevertheless, very much needed and appreciated. We are looking forward to making great strides in this area in FY 1976. Funding for Law Enforcement is still a critical problem, as it is Servicewide. This is a problem which must be approached and solved at the national level.

In summary, our major problem is insufficient funds in the areas of Wildlife Refuges, Law Enforcement and Technical Assistance. If additional funds are not forthcoming, we will have to reassess our position and advise you accordingly.

R. F. STEPHENS.

Attachments.

EXHIBIT A
ASSISTANT REGIONAL, DIRECTORS

Activity title	Adminis- trative and executive director	Distri- bution costs	Public affairs	Realty	Law enforce- ment	Engr.	Envir.	W/L and I/R	E/A and fish	Regional office totals	Area office totals	Field station totals	Grand totals	Fiscal year 1976 program totals
Env. cont. eval.	2.8						33.2			30.0	1.4	37.0	70.0	75.0
Land and water res. dev. and P.	17.9					7.0	170.2			195.1	12.7	372.2	580.0	580.0
Biological services.	8.7					7.0	89.3			105.0			105.0	105.0
Migratory birds.	38.2					25.0				299.0		1,629.0	1,970.0	1,970.0
Mammals and NWB	11.8			10.2	100.4	5.0		106.1	19.1	90.3	41.4	399.1	501.1	501.1
Animal damage cont.	19.2			4.4	3.3			46.7	19.1	118.2	31.9	914.2	1,064.3	1,064.3
Inland fisheries and res.	27.5			5.5		12.0		99.0	104.1	149.1	49.1	1,406.7	1,604.9	1,604.9
Endangered and threatened species	22.0			17.2	44.7	5.0			80.4	169.3	21.2	842.6	1,033.1	1,033.1
Interpretation and rec.	19.2			46.8	.3	6.0		111.0		183.3	20.6	567.1	791.0	791.0
Administration and ex. dir.	682.0									682.0		187.2	869.2	869.2
Anticipated reimb.	25.0					158.0				185.0		64.0	370.2	370.2
Anticipated reimb. ADC.													64.0	64.0
Res. mgmt. subtotal	707.0	167.3	46.8	37.3	148.7	225.0	292.7	362.8	222.7	2,210.3	190.0	6,440.3	8,840.6	8,470.4
Construction and AF													242.9	242.9
MBCA—Administration	14.4			212.4				16.1		242.9			118.4	118.4
Fed. aid fish.—Adm.	4.0			11.9		9.6			85.3	118.4			191.2	176.0
Fed. aid W/L—Adm.	6.0			15.4		15.4			132.6	181.2			14.0	14.0
NWLR—Mig. birds													23.0	23.0
NWLR—M and NWB													33.7	33.7
Gen. inv. BR RBS	3.7						47.4			51.1	1.2	23.0	86.0	86.0
Gen. inv. COE RBS	3.5						30.4			33.9	3.8	106.3	143.0	143.0
Const. inv. COE RES.	4.4						46.1			50.5	3.2	289.3	145.0	145.0
Land and Water—I. & R.													295.0	295.0
Land and Water—end. and TS.				30.5						30.5			30.5	30.5
Land and Water—rec. areas				4.0						4.0			4.0	4.0
Region 6.	10.0									10.0			10.0	10.0
Other sources.	47.5									47.5			47.5	47.5
From distributive costs.	107.3	(170.3)				117.0				164.5			164.5	164.5
Grand total	881.8	111.1	46.8	311.5	148.7	367.0	416.6	378.9	440.6	3,103.0	198.2	6,996.9	10,298.1	9,432.4

EXHIBIT B

RECOMMENDATION TO PARTIALLY CORRECT FUNDING DEFICIENCY IN WILDLIFE
REFUGE—REGION 2

The Cost Distribution sheets, currently complete indicate a total cut in Refuges, in all programs, of \$134,800 to field stations. Add to this the 40-50 percent increased inflationary costs over the past four years, and it is believed impossible to continue to try to keep all of the present refuges in Region 2 functioning. It is imperative that drastic action, such as abandoning areas of lesser importance, be taken. Consequently, we recommend one of the following two options be considered:

Option No. 1

Wichita Mountains.—Negotiate a concession contract to manage swimming at Elmer Thomas Lake. Savings about \$15,000.

*Buffalo Lake.**—Declare excess to GSA. RIF Refuge Manager, GS-11, Clerk GS-5 and part-time Maintenance man WG-6. Savings—\$57,500; less \$15,000 severance, equals \$42,500.

*Optima.**—Back out of Cooperative Agreement with Corps of Engineers and abolish this refuge from the NWRs. Move GS-9 Refuge Manager to another position. Savings—\$17,500.

*Hagerman.**—Back out of Cooperative Agreement with Corps of Engineers and abolish this refuge from the NWRs. RIF Refuge Manager GS-9, Clerk GS-4 and Maintenance man WG-7. Move GS-7 Refuge Manager to another position. Savings—\$71,500 less \$5,000 severance and \$11,000 for GS-7 equals \$55,500.

*Imperial.**—Rescind Executive Order and abolish this refuge from the NWRs. RIF Refuge Manager GS-11, Clerk GS-3 and Maintenance man WG-8. Move GS-7 Refuge Manager. Savings—\$76,000 less \$10,500 severance equals \$66,000.

*Washita.**—Back out of Cooperative Agreement with Bureau of Reclamation and abolish this refuge from the NWRs. RIF Clerk GS-4, Biological Aid GS-4, farmer WG-8 and automotive worker WG-8. Move GS-9 Refuge Manager to another position. Savings—\$77,500 less \$24,000 severance equals \$53,500.

These actions would release \$250,000 for distribution to other refuges and at least in FY 1976 they would be adequately funded to maintain operations at their FY 1974 level.

Option No. 2

*Wichita Mountains.**—Close completely and declare excess to GSA. RIF 22 people and retain and move six men. Savings—\$340,000.

BRIEFING MATERIAL, AUGUST 1, 1976—PROBLEMS WITH THE MANAGEMENT BY
PROGRAMS APPLICABLE TO ALL PROGRAMS

The following problems have come to light in our experience in trying to operate under Management by Programs.

1. Since Fiscal Year 1974, there have been several changes in program definition with little or no consideration given by the Central Office to the impact on funding alignment between programs involved. When this happens, one program may benefit while another suffers money-wise. In most cases the work itself is not questionable but does create problems unless program funds are shifted accordingly to accommodate changes in definitions.

2. Closely associated with 1, above is another problem wherein the Region has requested shifts in funding between programs which are outside the Regional Director's budgetary latitude. Our record in getting timely action from the Central Office is very poor in spite of Mike Spears' encouragement during verbal contacts to "let them know and they will make the shifts for us". There have been some instances where funds were deleted from one program but never added to the other programs as requested by the Region.

3. The current personnel ceiling control by Program/Category appears to be leading into unnecessary problems. Managing the number of positions by Program/Category is highly impractical since most employees work in two to four different programs and one to three categories.

4. Program management is operating without the benefit of field station input into the budget and objective setting cycles. Essentially, what we are now doing

*Approved of Congressional Appropriations Committee required.

is telling someone what is to be done and guessing at how much money it really takes to do the job. It is more sound to tell our field people what is to be done and then let them tell us what the cost is. More importantly, long range objectives are not being translated into accurate budgetary terms.

5. In relation to 4. above, Refuge field stations find themselves with budgets determined by several different Program Managers and obviously there is presently very little coordination to see that overall the stations receive adequate funding. Programs on refuges are not really in isolation in view of overhead and general cost such as a headquarters maintenance, office expense, multi-use facilities and protection of the entire area. In the Refuge Manager's calculations he pro-rates funding needs of each program according to the benefits produced by program. If one program is not properly funded, this causes the remaining programs to pick up the cost.

6. The Refuge PPBE System should either be used by *all* Program Managers or else we should drop it.

BRIEFING MATERIAL, AUGUST 1, 1975—REFUGE FUNDING FISCAL YEAR 1976

The Regional response (April 11, 1975 memo) to the Director summarized financial problems in regard to Program Advices for FY 76. In respect to Refuges, it was pointed out that there was a total cut of \$134,800 for operations in all programs. This figure is now \$148,800 due to the subsequent withdrawal of \$55,000 from Kofa. The recommendations to solve the Refuge funding problem included two options, one of which involved a combination of actions at 6 stations ranging from second party management of recreation to complete abolishment of some refuges with related personnel RIFS. The second option involved disposal of Wichita Mountains.

In order to salvage funds for FY 76, actions would have had to been initiated almost immediately starting in FY 75. We are now at the point time-wise where these recommendations could not achieve the desired savings and in some situations would add to the costs due to severance pay. Also, our original recommendations were based upon the assumption that FY 77 would be another lean year for Refuges.

In view of the Refuge Initiative Paper and Sec. Issue Paper for FY 77 which will give Refuges substantial funds increases we believe that the best approach for FY 76 is to not dispose of any refuge area, but to reduce operations temporarily at a few in order to get by Region-wide. In order to do this we will have to delay filling some vacancies, place some employees on furlough without pay for 6 months, and not work some intermittent employees. In looking at get-by situations the additional funds needs are as follows:

1. Laguna Atascosa-----	Plus \$15,000 to pay salaries and conduct minimum operations.
2. Santa Ana-----	Plus \$11,000 to pay salaries and conduct minimum operations.
3. Brazoria/San Bernard-----	Plus \$7,000 to conduct minimum operations.
4. Kofa/Cabeza -----	Plus \$9,400 to conduct minimum operations (assume \$55,000 restored to M&NB Program by C.O.).
5. Yuma Zone Office ¹ -----	Plus \$4,000 to pay salaries and conduct minimum operations to September 30, 1975.
6. Victoria Zone Office ¹ -----	Plus \$1,000 to pay salaries and conduct minimum operations to September 30, 1975.
7. Anahuac -----	Plus \$5,000 to conduct minimum operations.
8. Las Vegas-----	Plus \$5,000 to conduct minimum operations.
9. Salt Plains-----	Plus \$5,000 to conduct minimum operations.
10. Tishomingo -----	Plus \$5,000 to conduct minimum operations.
Total -----	Plus \$67,400 to conduct minimum operations.

¹ Assumes operations through first quarter only. If Zone Offices remain in operation after Sept. 30, 1975, and area offices are not activated, assume AO funds can be diverted to finance Zone Officers.

Recommended solution :

1. Optima—save \$20,000—don't fill Refuge Manager vacancy. Place on standby under Buffalo Lake until January 7, 1976.

2. Muleshoe/Grulla—save \$19,900—assume Refuge Manager retires (disability by January 1, 1976 and leave vacant, don't fill clerk vacancy, leave intermittent maintenance and place refuge under Buffalo Lake until January 1, 1976.

3. Buffalo Lake—save \$7,000—Don't fill Assistant Manager position. Leave Refuge Manager, clerk and maintenanceman to administer Buffalo Lake, Optima, Muleshoe and Grulla on minimum basis until July 1, 1976.

4. Hagerman—save \$19,700—Transfer Assistant Refuge Manager to Imperial January 1, 1976. Place maintenanceman on furlough without pay from January 1, 1976—July 1, 1976. Don't work intermittent maintenance worker from January 1, 1976—July 1, 1976. Leave Refuge Manager and clerk to run refuge on standby basis until July 1, 1976.

Total savings, \$67,400.

U.S. FISH AND WILDLIFE SERVICE,
Region 2, Albuquerque, N. Mex., August 19, 1975.

To: Director, USFWS, Washington, D.C. (AFW).
From: Regional Director.
Subject: Fiscal year 76 Funding for Refuge Field Stations.

In our April 11, 1975 summary memorandum on the Program Advices for fiscal year 1976 we emphasized that funds to operate our refuge field stations were grossly inadequate. We pointed out that there was a total cut in all programs of \$134,800 in base operating funds. This is now \$189,800 due to the subsequent withdrawal from Kofa. However, it was my understanding during our meeting in Washington, August 14 and 15, that \$55,000 will be restored to the Kofa.

In Exhibit B of this memorandum two options were proposed to partially correct this funding deficiency. We are now at the point time-wise where these options could not achieve the desired savings and in some situations would add to the costs due to severance pay. Also, these options were based upon the assumption that fiscal year 1977 would be another lean year for refuges.

In view of the Refuge Initiative and the Secretarial Issue Paper for fiscal year 1977, which promise hope for substantial funds increases, we believe that the best approach for fiscal year 1976 is to not dispose of any refuge area. We have considered a number of options to solve our inadequate refuge funding problem for fiscal year 1976 and believe the most logical one is a redistribution of funds available for refuge operations. Reductions are being made at specific refuges which will have the least impact on Service programs. Our strategy is to reduce operations temporarily at a few refuges in order to get by this year.

To solve a part of our problem we are taking the following actions on five low priority refuges that will yield a savings of \$67,400 for redistribution to higher priority uses at other refuges. Most of the funds involved are in the MB Program and the funds transfers are well within the Regional Director's authority.

Optima—\$20,800 savings

We will postpone filling the vacant Refuge Manager position until July 1, 1976. This refuge, a one-man station, will be managed by Buffalo Lake personnel commencing August 18, 1975 when the current Refuge Manager leaves for his new assignment at Laguna Atascosa. The refuge office in Guymon, Oklahoma will be closed and all property temporarily transferred to Buffalo Lake.

Except for occasional visits by Buffalo Lake personnel, this refuge will be mothballed for the next 10½ months.

Little adverse impact on Service programs will probably result from these actions. This new refuge is undeveloped except for boundary fencing. Some illegal hunting and grazing may occur. Development of management plans will be delayed.

Muleshoe/Grulla—\$19,900 savings

The Refuge Manager of these two refuges recently had open heart surgery. There is some indication that he may request disability retirement on or before January 1, 1976, and if so, this position will not be filled until July 1, 1976. Also, the vacant clerk position will not be filled in fiscal year 1976. The intermittent maintenance helper at this station will be employed half-time under the supervision of Buffalo Lake to protect Government property and do essential maintenance chores.

Public use of the refuge will be greatly curtailed by these actions. Only during hours when an employee is present can the refuge be open for public use. The impact on facilities (buildings, dikes, water control structures, etc.) and habitat hopefully will not be significant. But you don't leave an area unattended without

taking the risk of suffering damage by fire, flood and other natural forces or destruction by vandals.

Buffalo Lake—\$7,000 savings

The recently vacated Assistant Refuge Manager position will not be filled in fiscal year 1976. Operations will be reduced to the bare essentials for the remainder of fiscal year 1976. The current staff of three permanent employees (Refuge Manager, clerk and maintenance worker) will be responsible for the management of four "mothballed" refuges the rest of fiscal year 1976: Buffalo Lake, Optima, Muleshoe and Grulla.

Minimal maintenance of public use areas will be the major impact of these actions. The refuge will also forego needed maintenance of some buildings, roads, fences and other facilities.

Hagerman—\$19,700 savings

The Assistant Refuge Manager will be transferred before January 1, 1976 to a vacancy at Imperial and the Hagerman position left vacant until July 1, 1976. The maintenanceman will be placed on furlough without pay from January 1, 1976 to July 1, 1976. An intermittent maintenance worker will not be worked the last six months of FY 76. Operations will be cut to essentials the remainder of FY 76. This refuge will be operated on a standby basis for the last half of FY 76 by the Refuge Manager and clerk.

These actions will cause continued deterioration of buildings, roads, dikes, fences and other facilities. High public use, particularly for fishing, will continue but with inadequate enforcement patrol, violations will escalate. The four cooperative farmers and 24 grazing permittees will not be supervised as needed to insure compliance with permit conditions—this has been a problem even with existing staffing. Fertilizer will not be applied to refuge's share (116 acres) of cooperative farming land. No crops (150 acres) for wintering waterfowl will be planted by contract and waterfowl use the fall of 1976 will drop accordingly. Plans for a YCC camp will have to be dropped. The mallard banding operation will go down the tube. Needed signs will not be order from the National Sign Shop.

These actions will significantly reduce the funding level for these five refuges as compared to what was indicated in the Fiscal Year 76 Budget Justifications. Therefore, to comply with the House Subcommittee mandate, the appropriate congressional delegations and committees should be notified these refuges will be funded in FY 76 at the following reduced levels:

Optima -----	\$11, 800
Muleshoe/Grulla -----	16, 500
Buffalo Lake -----	50, 600
Hagerman -----	51, 900

The above is presented for your information in the event that inquiries are made to your office regarding the low level of operations at the five affected refuges.

W. O. NELSON, JR.

U.S. FISH & WILDLIFE SERVICE, INTER-OFFICE TRANSMITTAL

SEPTEMBER 4, 1975.

To: Director, FWS (AFW) Att: I&R Program Coordinator.
 From: Acting I&R Program Coordinator, Region 2, Albuquerque, N. Mex.
 Subject: Fiscal year 1975 versus fiscal year 1976 funds.

Attached is info you requested in S/2 telecon re our plans to temporarily curtail operations in FY 76 on certain low priority refuges so funds can be redistributed to other refuges to maintain essential operations. These curtailment actions we fully anticipate will be necessary for refuge field stations to survive in FY 76. Other actions may be necessary later in the FY pending the Appropriations Act, Pay Act, activation of reorganization with ARDs and AOs, etc. We know more funds will eventually be available for refuges, but we would much rather be lean and hungry the first half of FY than be broke in April. We know, for example, the RO funds shown on the attached contain some "fat." How much we don't know at this time. In summary, we are optimistic that the current revolving funds advances to our RF stations will be increased to the survival level. No way do we expect sufficient funds to do more than keep our head above water this year.

SUMMARY FUNDS 1—REGION 2

	Regional office	Area offices	Field stations	Total
Fiscal year 1975:				
MB	331.3		1,692.2	2,023.5
M. & N.M.B	51.3		451.1	502.4
ADC	104.3		1,215.7	1,320.0
I. & R	100.56		684.34	784.9
Total	587.46		4,043.34	4,630.8
Fiscal year 1976:				
MB	302.4	41.4	1,626.2	1,970.0
M. & N.M.B	87.3	11.7	352.6	451.6
ADC	118.2	31.9	1,122.3	1,272.4
I. & R	183.6	20.6	587.1	791.0
Total	691.2	105.6	3,688.2	4,485.0

¹ SE funds not included.

Total decrease in field station funding, \$355.14	
Fiscal year 1976 allotment cuts	\$145.8
Increase in RO funds	103.74
New AO's	105.6
	<u>355.14</u>
RF—O. & M	-266.64
RF—Rehab	+31.0
FH	-8.6
WS	-128.5
FS	+9
ES	+1.5
SE	+3
SRA—SA	+14.9
	<u>-355.14</u>

REGION 2

	Fiscal year—		Change
	1975	1976	
MB FUNDS			
Regional office:			
ARD—WL/I & R	154.1	106.1	-48.0
ARD—FA		12.1	+12.1
Realty	24.0	10.2	-13.8
Engineering	16.0	25.0	+9.0
SAC—District 6	94.7	100.4	+5.7
Budgetary reserve		110.4	+10.4
Distributive costs	42.5	38.2	-4.3
Subtotal	331.3	302.4	-28.9
Area offices:			
Area 1—Oklahoma and Texas		22.9	+22.9
Area 2—Arizona and New Mexico		18.5	+18.5
Subtotal		41.4	+41.4
Field stations:			
RF—O. & M	1,253.5	1,173.9	-79.6
RF—Rehab	150.0	186.0	+36.0
FH	1.1		-1.1
WS	39.0	24.9	-14.1
SRA—SA	248.6	241.4	-7.2
Subtotal	1,692.2	1,626.2	-66.0
Total	2,023.5	1,970.0	-53.5

See footnote at end of table.

REGION 2—Continued

	Fiscal year—		Change
	1975	1976	
M & N.M.B. FUNDS			
Regional office:			
ARD—WL/I. & R.....	15.3	46.7	+31.4
ARD—FA.....		16.1	+16.1
Realty.....		4.4	+4.4
Engineering.....		5.0	+5.0
SAC—District 6.....	24.4	3.3	-21.1
Distributive costs.....	11.6	11.8	+ .2
Subtotal.....	51.3	87.3	+36.0
Area offices:			
Area 1—Oklahoma & Texas.....		6.5	+6.5
Area 2—Arizona and New Mexico.....		5.2	+5.2
Subtotal.....		11.7	+11.7
Field stations:			
RF—Oklahoma & Mexico.....	354.0	² 247.5	-106.5
RF—Rehab.....	31.0	26.0	-5.0
WS.....	21.0	13.4	-7.6
SRA—SA.....	45.1	65.7	+20.6
Subtotal.....	451.1	352.6	-98.5
Total.....	502.4	² 451.6	-50.8
ADC FUNDS			
Regional office:			
ADR—WL/I. & R.....	84.4	99.0	+14.6
Distributive costs.....	19.9	19.2	-.7
Subtotal.....	104.3	118.2	+13.9
Area offices:			
Area 1—Oklahoma and Texas.....		17.6	+17.6
Area 2—Arizona and New Mexico.....		14.3	+14.3
Subtotal.....		31.9	31.9
Field stations:			
RF.....		6.0	+6.0
WS.....	1,215.7	³ 1,116.3	-99.4
Subtotal.....	1,215.7	1,122.3	-93.4
Total.....	1,320.0	³ 1,272.4	-47.6
I. & R. FUNDS			
Regional office:			
ARD—WL/I. & R.....	44.7	111.0	+66.3
Public affairs.....	47.0	46.8	-.2
Engineering.....		6.0	+6.0
SAC—District 6.....		.3	+.3
Distributive costs.....	8.86	19.2	+10.34
Subtotal.....	100.56	183.3	+82.74
Area offices:			
Area 1—Oklahoma and Texas.....		11.4	+11.4
Area 2—Arizona and New Mexico.....		9.2	+9.2
Subtotal.....		20.6	+20.6
Field stations:			
RF.....	643.34	556.8	-86.54
FH.....	28.0	20.5	-7.5
WS.....	13.0	5.6	-7.4
FS.....		.9	+.9
ES.....		1.5	+1.5
SE.....		.3	+.3
SRA—SA.....		1.5	+1.5
Subtotal.....	684.34	587.1	-97.24
Total.....	784.9	791.0	+6.1

¹ To be distributed to field stations for migratory bird surveys when work assignments are made.² Does not include 55.0 Kofa funds which were withdrawn from program advice per amendment May 27, 1975.³ Includes 196.0 Spears Aug. 7, 1975 faxform and 12.1 Pulliam June 6, 1975 memo.

FIELD STATIONS

	Fiscal year—		
	1975	1976	Change
Area 1—Oklahoma and Texas:			
Fort Worth, NFH	0.5		-0.5
Inks Dam, NFH	6.5	5.5	-1.0
San Marcos, NFH	1.0	.1	-.9
San Marcos, FCDC		.4	+.4
Tishomingo, NFH	8.5	5.5	-3.0
Tishomingo, Biol			
Uvalde, NFH	1.0	.5	-.5
ES:			
Corpus Christi		.3	+.3
Fort Worth		.3	+.3
Galveston		.3	+.3
Tulsa		.3	+.3
Zone supervisor	14.0	2.8	-11.2
Anahuac, NWR	13.0	11.0	-2.0
Aransas, NWR	51.4	45.0	-6.4
Brazoria, NWR	7.5	5.0	-2.5
San Bernard, NWR	5.5	3.0	-2.5
Laguna Atascosa, NWR	34.0	31.0	-3.0
Santa Ana, NWR	16.2	10.0	-6.2
Attwater P.C., NWR	6.5	4.0	-2.5
Buffalo Lake, NWR	11.0	9.0	-2.0
Hagerman, NWR	7.3	5.0	-2.3
Muleshoe, NWR	5.0	3.0	-2.0
Optima, NWR	2.0	2.0	
Salt Plains, NWR	17.0	11.0	-6.0
Sequoyah, NWR	15.0	15.0	
Tishomingo, NWR	29.0	24.0	-5.0
Washita NWR	10.0	8.0	-2.0
Wichita Mountains, WR	263.0	252.0	-11.0
ADC:			
Oklahoma City	3.0	1.2	-1.8
San Antonio	5.5	2.4	-3.1
SE—Beaumont			
		3	+.3
SRA:			
Corpus Christi		.3	+.3
Fort Worth		.3	+.3
Houston		.3	+.3
Oklahoma City		.3	+.3
Total	533.4	459.1	-74.3
Area 2—Arizona and New Mexico:			
Alchesay, NFH	2.0	1.5	-.5
Dexter, NFH	5.0	5.0	
Mescalero, NFH	1.0	.5	-.5
Willow Beach, NFH	2.5	1.5	-1.0
FS:			
Gallup		.5	+.5
Mesa			
Mescalero			
Parker		.2	+.2
Pineton		.2	+.2
ES—Phoenix			
Bitter Lake, NWR	20.0	19.0	-1.0
Bosque d. Ap., NWR	21.5	20.0	-1.5
San Andres, NWR	2.5	2.0	-.5
Sevilleta, NWR	1.5	.5	-1.0
Zone supervisor	5.44	1.5	-3.94
Cibola, NWR	5.0	4.0	-1.0
Havasü, NWR	47.0	45.0	-2.0
Imperial, NWR	8.0	7.0	-1.0
Kofa, NWR	7.0		-7.0
Ccabeza P., NWR	5.0	6.0	+1.0
Las Vegas, NWR	9.0	8.0	-1.0
Maxwell, NWR	4.0	3.7	-.3
ADC:			
Albuquerque	1.5	1.2	-.3
Phoenix	3.0	.8	-2.2
SRA—Phoenix			
		.3	+.3
Total	150.94	128.0	-22.94

EXHIBIT No. 2 FROM FORREST CARPENTER

BUREAU OF SPORT FISHERIES AND WILDLIFE,
February 6, 1975.

To: Director (AP).
From: Acting Regional Director, Region 3.
Subject: Refuge Initiative.

In response to your February 3, 1975, FAXFORM on this subject we are attaching the following items:

BACK-UP FOR REFUGE INITIATIVE FAXFORM DATED FEBRUARY 6, 1975

Region 3 programs which share common Resource Management funding with refuges increased from \$4,208,000 in F.Y. 74 to \$4,404,000 in F.Y. 75. This is an increase of \$196,000. This is reflected in Exhibit 1 by totalling all programs in the Resource Management appropriation for each year.

The Regional Land Management Division's share of the above totals was \$3,250,000 in F.Y. 74 and is \$3,321,000 in F.Y. 75. This is an increase of \$71,000.

As shown in the table below, the total of the refuge (RF) line items on Exhibit 1 for the Resource Management appropriation in F.Y. 74 is \$3,096,000. The totals for F.Y. 75 are \$2,952,000. This is a decrease of \$144,000.

These (RF) line item finds are refuge operating funds after general Regional Office assessments, Engineering support assessment, MARS, National Sign Shop, and Realty support services have been deducted from the Land Management Division allotment. It should be pointed out that these funds are received in our Regional Program Advices but are not at the disposal of Land Management for refuge operations.

Refuge operations funding	Resource management appropriation (thousands)		Change
	Fiscal year 1974	Fiscal year 1975	
Comprehensive natural reserve planning (130).....	79	15	-64
Migratory birds (210).....	1,764	1,861	+97
Mammals and nonmigratory birds (220).....	546	330	-216
Endangered species (410).....	5	4	-1
Interpretation and recreation (510).....	702	742	+40
Total refuge operations ¹	3,096	2,952	-144
Other costs:			
Engineering general.....	25	25	0
Other engineering job orders.....	4	219	+15
OCB realty services.....	20	33	+13
R. O. assessments.....	35	60	+25
National sign center.....	70	85	+15
Total other costs.....	154	222	+68
Grand total land management base allotment.....	3,250	3,174	-76
Minus unanticipated fiscal year 1975 obligations reprogrammed from fiscal year 1974 because of Washington office cost overruns.....		-124	
Total net allotment.....	3,250	3,050	-200

¹ Includes regional office LM staff support funding.

² Excludes \$147,000 nonbase MARS.

The levels of funding shown for Refuge Operations above should not be construed as adequate to continue the current level of refuge activities in Region 3. The total region 3 refuge allocation for F.Y. 75 is \$3,089,300 (excluding National Sign Shop and MARS). Permanent full-time refuge salaries (including the F.Y. 75 Pay Act Increase) is \$2,289,000. This is 74% of the total refuge allocation. Our F.Y. 76 permanent full-time salaries will be about \$2,320,000.

In a properly funded and balanced regional refuge program, a maximum of 60% of the total allocation should be used for permanent full-time salaries. The remaining 40% should be discretionary funds and used for temporary salaries, utilities, vehicle repairs, facility maintenance supplies, etc., etc.

Looking ahead at F.Y. 76, we find that permanent full-time salaries will comprise 75% of our allotment (if this allotment is the same as F.Y. 75). To restore balance to our Regional Refuge program in F.Y. 76 we will either have to:

1. Reduce our permanent full-time salaries by about \$460,000 and terminate about 30 permanent full-time employees, or
2. Increase our total allocation by about \$778,000 to bring our discretionary funding to a more acceptable level, or
3. A combination of the above two.

Naturally, Alternative 1, above, would require a substantial reduction in refuge activities including the probable closure of entire refuge installations. Alternative 2 would permit us to continue approximately the same level of basic operation as now but with no new starts and with limited capacity to accept additional responsibilities or assignments.

One area in which Alternative 2 would not provide adequate funding is in the maintenance of supporting facilities. Based upon historic cost records and operations planning, we conclude that about 20% of our total refuge allotment must go to annual custodial facilities maintenance. Thus, of the \$3,867,300 which would be allotted under Alternative 2, above, 20%, or \$773,000 would be devoted to facilities maintenance.

Recent analysis of our present requirements to perform routine custodial maintenance to the facilities which support our current program shows that we should be allocating \$1,050,000 and 51 man-years in this area. This is \$277,000 more than would be available under Alternative 2 above. Our F.Y. 75 Annual Work Plans show that in this fiscal year, we are devoting only \$520,000 and 31 man-years to the maintenance of our supporting facilities. This is all we can spare from our total allotment.

In addition, our most recent planning shows that our present supporting facilities require \$8,370,000 of major restoration, rehabilitation, and repairs in order to bring them up to minimum FWS maintenance standards and to restore their capacities to adequately support our refuge activities. Of this \$8,370,000, \$7,300,000 should be done by formal contract and \$1,070,000 by force account involving 15 man-years of labor.

In F.Y. 75, we received \$147,000 for MARS. This amount is less than 2% of our requirements. At that rate of annual MARS allotment, it will take about 57 years to fulfill our present need. By that time, the facilities will be gone, the refuge program will be decimated, and we won't need the money.

MEMORANDUM

U.S. DEPARTMENT OF THE INTERIOR,
FISH AND WILDLIFE SERVICE,
February 6, 1975.

To: Director, FWS, Washington, D.C. (AP).
From: Acting Regional Director, Region 6.
Subject: Refuge Initiative.

Attached you will find information as requested in your Faxform received February 4, 1975.

The most critical data was telephoned to Dale Coggeshall on February 6, 1975, in order to be sure we would meet the time constraints.

HARVEY WILLOUGHBY.

Attachment.

HISTORY OF DECLINE OF REFUGE PERSONNEL

In the spring of 1972, it was announced that the new Region 6 would be established by transferring all Service operations within the 10 north central States that were administered by Region 1, 2 and 3. At that time, there were 252 permanent full-time positions within the refuges being transferred into Region 6.

In February 1973, when the new region was firmly established and operating, refuges had lost 56 positions in the transfer process and through Washington Office actions. Region 6 Refuges were then operating with 196 full-time permanents. Eleven positions from field stations were pulled into the Regional Office (4) and Area Offices (7) as supervisory staff.

By spring of 1974, field stations had lost 6 more permanent positions, five of which were transferred into the Area Offices as staff specialists.

In 1975 already another large reduction has occurred in refuge positions with the loss of 21 more positions. In all probability, refuges will be reduced by 10 more permanent positions so the Region can reach its personal ceiling. If this occurs as planned, in four years the new Region will have seen its field staff on 46 manned refuges and wetland management districts drop from 252 to 159 permanent full-time employees. This loss of 93 employees has been the key factor in providing additional funds (salary savings) to offset inflation and the reduced operation and maintenance funds. Less personnel has necessitated the cutback in refuge programs and especially personnel services to the still increasing number of refuge visitors.

PERSONNEL TOTALS FOR REGION 6

	Refuges and NMD's	Area offices (LM)	Regional office (LM)	Refuges regionwide	Regionwide all divisions
1972	252	0	0	252	59
1973	196	7	4	207	53
1974	190	12	4	183	50
1975	169	11	4	174	51
June 30, 1975, regional ceiling					49

Although not directly related to the reduction in refuge personnel, the addition of wildlife surveys and banding quotas, formerly handled by Federal Game Agents, to the responsibilities of refuges needs to be pointed out. This new workload was placed on a decreasing number of refuge personnel without additional funds. To properly carry out these surveys and banding programs, refuges would need approximately \$80,000 and 60 man-months annually.

ROLE OF REFUGES IN THE FUTURE

Dwindling habitat and more intensive land uses will continue to make our Service lands more valuable as islands of prime habitat managed primarily for the perpetuation of wildlife.

Use of refuges as outdoor labs will increase, and efforts should be directed towards reaching the higher levels of environmental education, such as use of refuges for research and training grounds for teachers.

There is still a growing need to secure "unique" habitat near urban areas of high population centers. Such lands established as National Wildlife Refuges could serve as non-consumptive ecological green belts.

Consumptive uses like hunting and fishing may eventually give way to increasing demands for wildlife and wildlands appreciation, study areas, and similar environmental uses.

The refuge system, along with State Wildlife Management Areas, could conceivably provide the key or major reservoir for many of the migratory wildlife species and most of the endangered species in 50 years.

Any way you look at the future, the refuge system plays an increasingly important role as preservers of the Nation's wildlife heritage.

MEMORANDUM

FEBRUARY 7, 1975.

To : Director, FWS, Washington, D.C. (AP).
From : Regional Directors, FWS, Atlanta, Ga.
Subject : Refuge Initiative.

This is in response to Mr. Spear's Faxform dated February 3, 1975, subject as above.

Attached are the requested matrices for FY '74 and '75 and the Description of Change Affecting Refuges for FY '75. Since we were not funded by program in FY '73, it is not possible to compare FY '74 with that year. The Refuge Division just about broke even in FY '74 (compared to FY '73). Their real troubles began in FY '75.

We attach Table 1 to complement the other data you requested. It clearly shows what happened to Refuges in Region 4 in FY '75. In response to the invitation to comment on "Refuge Futures" we cite the following excerpts from a preliminary

draft by R. F. Scott in 1969 entitled, "What the National Wildlife Refuge System Should Be."

"The Refuge System represents the Federal Government's tangible investment in and evidence of concern with wildlife as part of the American scene and a quality human environment. As refuges come to serve human values more directly, their unique wildlife emphasis will strike the same responsive chord in Americans that Walt Disney has so effectively exploited in his wildlife programs. . . . This innate public concern with wildlife, when coupled with the unique applied ecological nature of manipulative refuge management operations, presents an unequalled opportunity to serve another broad National goal. Refuges can serve as the outstandingly effective educational vehicle for enhancing, in the general public, ecological understanding of problems of environmental quality—one of the most important issues now facing the Nation.

"The Refuge System stands ready to serve National purposes in new and important ways. As it gains in strength and operating precision it will be recognized as a national and international prototype of enlightened wildlife-oriented land and resource management for broad human benefits. It should become an outstanding model, and source of information for similar activities carried on by all the States and private land owners."

The Leopold Report, which sparked the Systems Approach to managing wildlife refuges, properly addresses the question of what the National Wildlife Refuge System should be. Much has been said, written, and planned in response to the recommendations of the Leopold Committee. With some modifications, aimed at more practicality, the Systems Approach, offers a means of managing the entire network of national wildlife refuges according to priorities. It provides for comparisons of costs and benefits—a sound basis for decisions. There is no comparable system in operation at the present time.

We hope the above information proves to be helpful in responding to Assistant Secretary Reed's inquiry.

TABLE 1.—COMPARISON OF FISCAL YEARS 1974 AND 1975 FUNDING, DIVISION OF WILDLIFE REFUGES, REGION

Program	Fiscal year—		Difference (+ or -)
	1974	1975	
Habitat preservation (130).....	83.2	23.5	-59.7
Migratory birds (210).....	3,113.3	2,872.0	-241.3
Mammals and nonmigratory birds (220).....	332.0	325.0	-7.0
Endangered species (410).....	299.0	206.0	-93.0
Interpretation and recreation (510).....	676.0	670.0	-6.0
Subtotal.....	4,503.5	4,096.5	-407.0
Expense of sales (0830).....	320.0	392.0	+72.0
Total.....	4,823.5	4,488.5	-335.0
Reobligation.....			-148.0
Total.....			-483.0

Senator Moss. We will now ask Mr. Art Wright, of the Wilderness Society, to come forward, followed by Charles Cluson.

STATEMENT OF ART WRIGHT, STAFF CONSULTANT, THE WILDERNESS SOCIETY, WASHINGTON, D.C.

Mr. WRIGHT. I am A. T. Wright, staff consultant of the Wilderness Society of Washington, D.C.

The Wilderness Society is a 40-year-old national membership conservation organization dedicated to the preservation of wilderness and wildlife habitat and to the expansion and protection of the national parks, forests, and wildlife refuge systems.

I very much appreciate your invitation to appear here today and wish to commend the subcommittee for the growing concerns which motivate these hearings about the national wildlife refuge system.

One of our concerns is that there are 53 refuge wilderness proposals now in legislative form in the Congress for consideration, including proposals for the Kofa, Sheldon, and Russell Wildlife Ranges about which more will later be said. A number of these are proposals in which there is a difference of opinion between the Department of the Interior and conservation groups as to the size of the wilderness designation.

Such acreage differences stem, in part, from differing views as to how the Wilderness Act affects the management of a wilderness area. If you believe, as the Department apparently does, that virtually no management can be undertaken in a wilderness area, then you seek to limit the size of the wilderness proposal in order to maintain a full range of management options. Our concern is for the stance the Department may take in hearings on wilderness proposals before the appropriate subcommittees of the House and Senate Interior and Insular Affairs Committee. The Department's wilderness management position should be well grounded in the Wilderness Act, but we fear that it may not.

Therefore, we suggest that the committee look carefully at the manner in which the Department performs under the Wilderness Act with respect to the national wildlife refuge system.

As to the specifics of this situation, the problem is that the Interior Department regards section 2(c) of the Wilderness Act, entitled, "Definition of Wilderness," as prohibiting all wildlife management of the wilderness lands and waters in the refuge system. Mr. Chairman, we regard section 2(c) as congressional criteria for the entry of an area into the national wilderness preservation system, having little, if any, bearing on how an area is managed after entry. Here, section 4 of the act is controlling and it should be noted that certain provisions clearly cannot be construed to deny all forms of management for the following reasons:

1. Section 4(a) states that wilderness designations are "within and supplemental to the purposes for which national forests and units of the national park and wildlife refuge systems are established and administered * * *." If wilderness is supplemental to the wildlife purpose, it follows that such purpose does not have to be disregarded in wilderness areas, as the Department contends.

2. Secondly, section 4(a) of the act, entitled, "Prohibition of Certain Uses," provides flexibility in the management of wilderness areas. It lists prohibited uses but qualifies such prohibitions with the words "except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act * * *." The real constraint here is not management per se but meeting the test of being necessary management in a wilderness area. Thus, it is clear that if a specified activity is necessary to the wildlife resource, it can then be undertaken. This undertaking is constrained only by section 4(b) of the act which states that the Department is "responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character."

Thus, it is that the act does not deny the Department all wildlife management prerogatives. Yet, the Department unnecessarily limits many of its wilderness proposals even when very little management is

contemplated. It also seeks on occasion to have the Congress include special management provisions in wilderness legislation to accommodate a limited management objective which can otherwise be accommodated by the above cited flexible provisions of section 4(c) of the act. Such piecemeal special provisions can make a shambles of the flexible, realistic provisions of the Wilderness Act. It is clear that special provisions could "lock in" for all time a practice which could well be modified or eliminated in time. Special provisions can thus stifle future innovative management measures that the Wilderness Act encourages if the Department will but accept the challenge.

Let it be said in the context of the size of wilderness areas, that the frequent efforts of conservation groups to secure greater acreages for wilderness designations than those offered by Federal agencies does not rest upon the simple theory that if some wilderness is good, then more is better. We are more responsible than that. We seek maximum qualified acreage in wildlife refuges knowing three things:

1. That the Wilderness Act permits more management than Federal agencies admit is the case as discussed above;

2. That wilderness designations by acts of Congress are presently the best possible protection refuges can have against damaging developments such as highways, bridges, pipelines, power transmission lines, and other construction harmful to fish and wildlife habitat; and

3. That wilderness designations would preclude refuges from being administratively abolished or transferred to state jurisdictions and even inhibit their transfer to another Federal agency not qualified for such duty.

Refuges have been invaded by construction in the past and some are presently threatened. Wildlife refuges otherwise suffer the ignominy of administrative efforts to remove them from qualified hands and place them in much less qualified hands of other Federal agencies or State game commissions, for reasons having nothing to do with benefits to the wildlife resource.

It comes as a shock to some people to learn that the National Wildlife Refuge System is not adequately endowed with legislative strength compared with the National Park Service and the U.S. Forest Service. Absent an organic act which gives strength and stature to the refuge system, the best means of protecting the refuges is by application of the Wilderness Act.

The National Environmental Policy Act may also be brought to bear in protecting refuges from harmful construction and expedient administrative actions but it is much less sure than the Wilderness Act. Highways, pipelines and the like aren't going to be proposed for wilderness areas, so NEPA does not even have to be involved.

For a viable future as wildlife refuges and as a continuing asset to the American people, the National Wildlife Refuge System clearly needs both an organic act and generous size wilderness areas.

At this point in my testimony, Mr. Chairman, I would like to call attention to our booklet entitled, "The Wilderness System," as of December 31, 1974, which lists all existing wilderness areas and those proposed for passage by the Congress. The listings of existing areas show the name of the area, the agency, the location, the public law number, and the acreage. The proposed areas are listed by agency, place, name, and location including those of the National Wildlife Refuge System.

It includes statistical information, comments on the wilderness purity debate and wilderness management policies and practices as well as other data probably helpful to this committee, including wilderness in Alaska and the creation of new parks, forests, and wildlife refuges in that great State.

A copy is attached for the record.

Mr. Chairman, your committee already has held hearings on the attempted administrative transfer of specified units of the National Wildlife Refuge System. I'm sure the committee also knows that most refuges were established by the executive branch of the Government and can be disestablished the same way and otherwise transferred or reassigned. To us this means the refuge system does not have adequate congressional backing in legislative form.

In February of this year, the then Secretary of the Interior, responsive to a land grab by the Bureau of Land Management, issued a public land order, the effect of which was to oust the Fish and Wildlife Service from the Kofa Game Range in Arizona, the Charles Sheldon Antelope Range in Nevada and Oregon, and the Charles M. Russell National Wildlife Range in Montana, and reassign the ranges exclusively to the Bureau of Land Management. Involved is more than 2 million acres of wildlife habitat. Wilderness proposals for these three ranges are here in the Congress and BLM is not even a participating agency in the National Wilderness Preservation System.

These ranges have been jointly administered by the FWS for wildlife values and BLM for mining and grazing. The track record of the BLM clearly suggests that it has little wildlife management competence and very little wildlife motivation. By its own admission, BLM can't even manage the grass on public lands, much less wildlife; 83 percent of its grasslands in recent years were in fair, poor, or bad condition. This is an agency having 450 million acres of public land to manage and which is heavily oriented to grazing, to mining, to timber cutting, to the leasing of public lands for oil shale, for the stripmining of coal and other minerals, and which also manages the Nation's offshore oil leasing program. We have no objection to BLM handling these activities—someone has to. We simply believe that fish and wildlife and their habitats would be seriously neglected by BLM. We have no confidence in its ability to shape up to wildlife needs. Conflicts between resource extraction and wildlife habitat are sure to be resolved in favor of extraction. This is not to say that resource conflicts would never occur under FWS management, but they are likely to be infrequent and minor by comparison.

In issuing his order, the Secretary prepared no environmental impact statement on the BLM transfer as required by the National Environmental Policy Act. His action also ignored existing statutes, such as the National Wildlife Refuge Administration Act of 1966, which in combination with other statutes, clearly provides that the FWS shall administer all areas in the National Wildlife Refuge System including the Kofa, Sheldon, and Russell Ranges.

Greatly disturbed by this action and fearful of continued dismantling of the Wildlife Refuge System, a solid coalition of about 25 national conservation organizations sought the President's reversal of the Secretary's order without success. Whereupon the Wilderness Society with seven plaintiffs sought the protection of the courts for

the National Wildlife Refuge System. On July 29, 1975, after an earlier temporary restraining order, Judge William B. Bryant of the U.S. district court issued a preliminary injunction, still in effect, blocking the transfer of the ranges to BLM on the grounds of failure to complete an environmental impact statement as required by NEPA. The decision also cites BLM's preoccupation with and emphasis on commercial uses of lands under its management and compared it with the Fish and Wildlife Service's primary responsibility in law and in fact to wildlife values. As I understand it, Judge Bryant will later rule on the question of the Secretary's compliance with the various statutes pertaining to the administration of the National Wildlife Refuge System. A copy of the current decision is attached hereto for the hearing record. We commend it to your attention.

It is clear from all of this that the Department of the Interior cannot be relied upon to maintain the integrity of the refuge system or to otherwise properly supervise and manage it without further direction and control by the Congress. This subcommittee held hearings this past May on S. 1293, passage of which would reverse the BLM transfer and preclude future raids of this kind without affecting existing joint management arrangements.

As you also know, H.R. 5512, a bill similar to S. 1293, may come up for a vote in the House, hopefully in the near future. H.R. 5512 was reported favorably by the House Committee on Merchant Marine and Fisheries and is scheduled for consideration by the House Rules Committee tomorrow. It is also interesting to note that the House Subcommittee on Interior Department Appropriations acted to bar the use of funds to effectuate the transfer. For the present, at least, the refuge system is safe from dismantling, and we are optimistic about congressional and judicial results of the effort to forestall BLM takeover of the three wildlife ranges.

But what about the future? It is here that the Congress needs to catch up with the existing hodge-podge of laws passed over the past 40 years which gave bits and pieces of congressional direction to the conduct of the refuge system. This is not said in derogation of those laws, each of them no doubtful useful and beneficial. It does show a lack of cohesion and stature for the conduct and management of the system.

At this point, Mr. Chairman, I would like to refer the subcommittee to a very able history of the refuge system and a thorough summation of its problems placed in the Congressional Record of July 11, 1974, pages 1 through 6, by Representative John Dingell. A copy is attached.

To continue, the National Wildlife Refuge System is today merely a division of the FWS and apparently not a high-ranking one at that. Yet it manages almost 34 million acres of land which is more than that managed by the National Park Service. Its refuge managers must make frequent crucial decisions affecting the well-being of the fish and wildlife which occupy the habitat under their supervision.

Yet, the refuges appear to be unnecessarily denied funds to maintain refuge objectives. A mere division of the Service is charged with the responsibility of fish and wildlife of inestimable value to the American people.

Mr. Chairman and members of the committee, we submit that the major faults to be found today with the system stem from the fact that

he system is a stepchild, that it has no firm foundation in law or administration, and that it otherwise escapes the close attention of the Congress. The questions the subcommittee now has and the information it now seeks might not be necessary if the system operated under appropriate congressional scrutiny. We cite the success of the National Wilderness Preservation System as established by the Congress with the passage of the Wilderness Act of 1964. We think it is in point with this situation. There are 12.6 million acres in the wilderness system thus far, and we are sure it will continue to grow under the careful eye of the Congress. All 125 units in the system were placed there by the Congress; all are appropriately protected by the strong provisions inserted in the act by the Congress. The wilderness system is a system within systems—the forest, park, and wildlife refuge systems.

Not content with that alone, Congress endowed it with special protection against development. It can hardly be questioned but that the National Wilderness Preservation System is a healthy, viable adjunct to life in these United States. To be sure, there are problems, but the wilderness system, unlike the refuge system, is largely immune to administrative raiding and tampering.

It can also be said that the wilderness system is something of a johnny-come-lately to the national scene, whereas the wildlife refuge system has been with us since 1903, with major growth beginning 40 to 50 years ago. It is high time for the Congress to demonstrate the same high-level concern that it evidenced in creating the national forest, national park, and national wilderness systems. The idea of an Organic Act for the refuge system is perhaps an idea whose time has come.

We don't suggest it as a cure-all—nothing is. We do represent it to be, if adopted, a major advance in the management of fish and wildlife and their habitats, a critical resource as time and events are proving, almost daily.

We believe that such an act must be appropriately provisioned to clearly set forth the following: (1) Goals and purposes, (2) a definition of terms, (3) guidelines for achievement, (4) the classification of units according to purpose, (5) a prohibition against disposal of lands without congressional approval and to otherwise establish a process for disposition of lands if that be in the public interest, (6) a requirement for studies looking to expansion of the system in specified ways, (7) a requirement to establish an interdisciplinary planning system, (8) the establishment of a training academy for persons who administer and manage the system, (9) the establishment of new units and the expansion of existing units of the refuge system in Alaska, and (10) provide for wilderness reviews of refuges established after the passage of the Wilderness Act and those in Alaska established by this bill, and otherwise.

Another matter requiring recognition in an Organic Act is that fish and wildlife have a natural right to inhabit the land, air, and water of the United States. This is altogether for human benefit. By protecting wildlife habitat, we make sure that we do not befoul the total environment. Their well-being is crucial to ours.

We believe, Mr. Chairman, that a strong Organic Act is needed to protect the integrity of the wildlife refuge system and that it would

resolve in reasonable measure many of the problems besetting the system today, as evidenced by the subcommittee's concerns.

Also in the context of the BLM wildlife range takeover and the need for an Organic Act for the refuge system, we would like to express our concern for the State of Alaska. The same potentially disastrous situation is in the making. BLM now manages by far most of the public lands in Alaska and is heavily engaged in fighting new national parks and wildlife refuge proposals made pursuant to the terms of the Alaska Native Claims Settlement Act.

Former Secretary Morton proposed the Noatak River and Lake Iliamna regions for joint FWS-BLM administration, already discredited as an unworkable management technique. It seems clear that the attempted BLM takeover in the West would establish adequate precedent for a similar result in Alaska. Who is to say that BLM with its subtle growth in power and influence will not someday be haphazardly managing national parks and wildlife refuges in Alaska, always subject, of course, to the priorities of commodity extraction?

The subcommittee is no doubt aware of the fact that while Alaska has abundant wildlife, such abundance is due, in large part, to the vastness of Alaska and not to high productivity of its lands and waters on a per acre basis, for example. Thus, the subcommittee may wish to show specific concern for the needs of the wildlife refuge system in Alaska.

Mr. Chairman, I know the subcommittee has many concerns I have not touched on directly, and one of these is the recent reorganization of the FWS according to the area office concept and a new funding structure to match.

As we understand the new area program management structure in the FWS, the refuge system will have no advocacy as a system nor any funding as a system. Yet there are 33.9 million acres in 367 refuge units in the system and desperate fish and wildlife needs. Very clearly, the refuge system is held in low esteem. Therefore, we think the Congress ought to give the national wildlife refuge system a life of its own which is surely what it deserves, if the American people and the wildlife dependent upon them are to be adequately served.

The subcommittee may also wish to explore with the Fish and Wildlife Service the extent to which private inholdings within some wildlife refuges adversely affect management capabilities in behalf of fish and wildlife and their habitat. We can name three where there may be or may have been problems in recent times—the Piedmont National Wildlife Refuge in Georgia, Columbia National Wildlife Refuge in Washington, and the National Elk Refuge in Wyoming.

As we understand it, the Service has the authority to purchase private lands but not the money. It does have the power of condemnation. It is a subject worthy of the subcommittee's attention.

Another item that ought to be among the subcommittee's concerns is the extent to which wildlife habitat in the refuges is being damaged by heavy use of offroad recreational vehicles—ORV's. A case in point is the Back Bay National Wildlife Refuge in Virginia where heated controversy arose as a result of attempts by the FWS to regulate beach traffic through the refuge to points elsewhere in Virginia and the Outer Banks of North Carolina.

In June, July, and August of 1972, the FWS counted 19,817 vehicles churning the sand of the refuge beach which is a mere 4½ miles long.

The issue was eventually resolved strongly in favor of the Department of the Interior by U.S. District Judge John MacKenzie who was sustained on appeal. It is accurate to say that the Back Bay Refuge has been and still is in a fight for its life. Efforts are being made to circumvent the court decision.

We have no idea as to the total extent of this or similar access problems in the refuge system, but believe it to be of such magnitude as to warrant the subcommittee's further investigation. Mr. Chairman, attached to my statement is a copy of our September 1975 Wilderness Report containing a fairly detailed account of the Back Bay access situation for the subcommittee's information.

Thank you for the opportunity to appear here today.

Senator Moss. Thank you very much for your testimony, Mr. Wright, and for the documents that you have submitted to the committee for reference.

You mentioned the restrictiveness of the Department's interpretation of its management authority on wildlife refuges that have been classified as wilderness.

Can you name for us some specific areas where this narrow interpretation has been detrimental to wildlife resources?

Mr. WRIGHT. Yes, Mr. Chairman. There are about a dozen or more wildlife refuge wilderness proposals that can readily be named which were limited by the Department primarily because of management considerations or intended management considerations. I am sure further checking would reveal others.

Refuge	Location	Department proposal	Citizen proposal
Blackwater.....	Maryland.....	None	8,500
Bombay Hook.....	Delaware.....	2,000	9,109
Cedar Island.....	North Carolina.....	180	5,680
Charles Russell.....	Montana.....	155,288	260,000
Charles Sheldon.....	Nevada-Oregon.....	341,500	538,000
Chassahowitzka.....	Florida.....	16,900	23,360
Havasu.....	Arizona-California.....	2,510	22,416
Imperial.....	California.....	12,010	57,200
Lacassine.....	Louisiana.....	2,854	5,300
Lake Woodruff.....	Florida.....	1,106	8,606
Martin.....	Maryland.....	None	4,173
Mingo.....	Montana.....	1,700	8,000
Missisquoi.....	Vermont.....	620	2,514
Noxubee.....	Mississippi.....	1,200	5,400
White River.....	Arizona.....	975	5,000

Further to the point, Mr. Chairman, so far as we can determine with respect to all wildlife refuge wilderness proposals now in the Congress, the Department's proposals total 7,402,596 acres, 173,447 acres of which are known as potential wilderness additions to be accomplished administratively under congressional authority. This total figure is to be contrasted with 12,157,012 acres of wilderness proposed by citizen groups. While there may be some other considerations at work here, most of this rather substantial difference can be attributed to differences in interpretations of the Wilderness Act. We believe that ours is consistent with the Wilderness Act and the manner in which the Congress applies the act.

Senator Moss. Thank you very much. We appreciate your appearance and your testimony here.

[The material referred to earlier follows:]



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SEPTEMBER 1975

Public Hearings Set on Alaska Gas Pipeline Proposals

The Department of the Interior has scheduled public hearings in 11 cities in late September and early October on its environmental impact statement on the Alaska gas pipeline project. The 17-volume, 9,000-word statement, released on July 27, is on inspection in the 11 cities and also may be requested from the department in Washington.

The pipeline project is intended to bring natural gas from Alaska's north slope to the lower 48 states. The department has identified six alternative routes for the crucial Alaska segment. Of these, two would cross the great Arctic National Wildlife Range or its proposed additions, then cross Canada to the midwestern states. Others are an offshore route paralleling the shoreline north of the wildlife range, an overland route via Fort Yukon, a route via Fairbanks and southeast along the Alaska highway and a route following the Alaska oil pipeline now under construction.

Two rival companies have made proposals to the Federal Power Commission for transportation of the gas—Alaskan Arctic Gas Pipeline Company, using a route directly crossing the wildlife range, and El Paso Natural Gas Company, following generally the route of the oil pipeline, which does not encroach on the wildlife range.

State Backs El Paso

The draft environmental statement predicts serious impacts on the wildlife range if the pipeline crosses it, including "possibly catastrophic effects" on one of the continent's major remaining caribou herds, numbering over 100,000 animals.

The State of Alaska has endorsed the El Paso proposal in the belief that it would provide greater economic benefits within the state. Under the El Paso plan, the gas would be shipped in liquefied form in tankers to west coast ports, then restored to gaseous form for distribution throughout the country by existing pipeline systems.

The Wilderness Society has intervened in

the FPC proceedings in concert with the Alaska Conservation Society, National Audubon Society and Sierra Club to ensure that conservationists will have full access to data on the issue and be in a position to submit recommendations on alternative routes. The Society's position has been to recommend that no invasion of the Arctic National

The draft environmental statement predicts... "possibly catastrophic effects" on one of the continent's major remaining caribou herds, numbering over 100,000 animals.

Wildlife Range or the planned additions be allowed. The Society is now analyzing the information presented in the impact statement as to the relative advantages and feasibility of the six alternative routes.

Hearing Schedule

The hearings are to be conducted for two days in each of the 11 cities, beginning at 9 a.m. Speakers will be limited to 10 minutes but may submit added written testimony for the record. The hearing schedule:

September 25-26: Northern Hotel, Broadway and 1st Avenue North, Billings, Mont.; Performing Arts Center, Building K, University of Alaska, Anchorage, Alaska; Ceremonial Courtroom, Room 2525, 219 S. Dearborn St., Chicago, Ill.; Bonneville Power Auditorium, 1002 NE Holladay St., Portland, Ore.

September 29-30: Traveller's Inn, 813 Noble St., Fairbanks, Alaska; Yuba Room, Sacramento Community Center, 14th and K Sts., Sacramento, Calif.; Highway Department Auditorium, Capitol Hill, Bismarck, N.D.; Washington Water Power Company Auditorium, 1411 E. Mission St., Spokane, Wash.

October 2-3: Baranof Hotel, 127 North Franklin St., Juneau, Alaska; Pioneer Inn, 221 S. Virginia St., Reno, Nev.; Department of the Interior Auditorium, 18th and C Sts., N.W., Washington, D.C.

Review copies of the impact statement are avail-

able at Bureau of Land Management offices in the above cities except the following: North Dakota State Planning Agency, State Capitol, Bismarck; Office of Special Assistant to Secretary of the Interior, 32nd floor, 230 S. Dearborn St., Chicago; Juneau Memorial Library, Juneau; Orchard Avenue Branch, Spokane Public Library, N. 2906 Park Road, Spokane. Request copies by mail from: EIS Task Force, Room 1538, Bureau of Land Management (302), Department of the Interior, Washington, D.C. 20240. Sections for specific geographic areas may be requested in lieu of the full statement.

How To Testify

Persons wishing to testify should notify the following Interior Department offices at least eight days before the hearing: Alaska—Art Kennedy, BLM, 555 Cordova St., Anchorage 99501; Washington and Oregon—Robert Hostetter, BLM, P.O. Box 2965, Portland, Ore. 97208; Montana and North Dakota—Bryan Robinson, BLM, Federal Building and Courthouse, 316 N. 26th St., Billings, Mont. 29101; Nevada—Stu Gearhart, BLM, 3008 Federal Building, 300 Booth St., Reno 89502; California—Robert Metzger, BLM, E-2841 Federal Office Building, 2800 Cottage Way, Sacramento 95825; Chicago—Ms. Madonna McGrath, Special Assistant to Secretary of the Interior, 32nd Floor, 230 S. Dearborn St., Chicago 60604; Washington, D.C.—Thomas DeRocco, EIS Task Force, Room 1538, Department of the Interior, Washington, D.C. 20240.

Comments Invited On Wetlands Rules

Conservationists have an important opportunity between now and October to help protect America's wetlands. The way to help: submit comments in person or in writing at Army Corps of Engineers public meetings on the Corps' July 25 regulations under section 404 of the 1972 Federal Water Pollution Control Act Amendments.

In section 404 Congress directed the Corps to institute a permit program to regulate the disposal of dredge spoil and fill material. Section 404 also changed the responsibilities of the Corps from the traditionally narrow restrictions of the term "navigable waters," which the 1899 Rivers and Harbors

Act defined as waters deep and wide enough to be navigated for commercial purposes, to the broad responsibilities of a new term, "all the waters of the United States," which extends the Corps regulatory permit authority to small streams and inland and coastal wetlands.

The Corps ignored this congressional directive until a public interest law firm, the Natural Resources Defense Council, sued. Last March NRDC won an order from the U.S. District Court in Washington, D.C. directing the Corps to promulgate new regulations expanding the permit program as required by the 1972 law. When the Corps issued new regulations on May 6, it also issued a press release saying erroneously that farmers and ranchers would need permits to enlarge stock ponds or to plow fields. Not only did this scare farmers; it also aroused strong protests from the Environmental Protection Agency and environmentalists throughout the nation.

Assistant Secretary of the Army Victor V. Veysey finally interceded and persuaded the Corps to work with EPA to produce the July 25 regulations. Though these are greatly improved over the May 6 regulations, they need strong citizen support for (1) interpretations that will be most effective for wetlands protection and (2) immediate implementation.

For copies of the July 25 regulations and dates of the nearest Corps meetings, write to:

Hon. Victor V. Veysey
Assistant Secretary of the Army
Department of Defense
Washington, D.C. 20310

Challenge Is Met

The Wilderness Society Legal Fund has reached the \$12,500 level needed to match the Rockefeller Family Fund challenge grant. Purpose of the grant is establishment of an environmental litigation office. The grant was conditioned on an equal amount being donated by members of the Society and others. The Society is grateful for the prompt and generous response of many members to this appeal.

Frank J. Barry, professor of law at the University of Oregon and former solicitor of the Department of the Interior, has assumed direction of the office and is exploring potential areas of litigation and administrative appeals. Work also continues on the wildlife ranges suit.

Additional contributions and grants to the Legal Fund are welcome to supplement the \$25,000 contributed toward the first year's budget for the litigation program.

Foes of Clearcutting Win Major Court Decisions in Monongahela and BWCA

Two court cases have brought major victories to conservationists fighting to curb clearcutting of timber in forests owned by the federal government.

- The Fourth U.S. Circuit Court of Appeals on August 21 unanimously upheld a lower court ruling that trees must be fully mature, dead or of large growth to be sold to private interests and must be so marked by the U.S. Forest Service before they are cut. The decision grew out of a suit filed by several conservation groups against clearcutting in the Monongahela National Forest in the Allegheny highlands of West Virginia.

- A U.S. district court judge in Minnesota on August 13 permanently banned practically all logging in the Boundary Waters Canoe Area (BWCA) in that state. Federal Judge Miles Lord in his lengthy formal opinion said logging in BWCA virgin-forest and adjoining areas is prohibited by the 1964 Wilderness Act.

Frank J. Barry, vice president of The Wilderness Society and chief of The Society's new environmental litigation office (see accompanying box), called the decisions gratifying.

"Conservationists through the years have had so many occasions for losing faith in their government," said Barry, "it is encouraging to find the integrity of the courts has again come to the rescue of the ideals of constitutional government. The Wilderness Society hopes the Forest Service will be converted by the two decisions."

The appeals court ruling in the Monongahela National Forest establishes a binding precedent only in the Fourth Circuit.

Review Favored

"If the government chooses to appeal, as it has already announced in the BWCA case, I hope the decision is reviewed by the Supreme Court for the appeals court ruling appears clearly correct," said Barry. "It would be of advantage to conservationists everywhere to have a Supreme Court ruling forbidding clearcutting in all national forests."

The court cited the Alaska oil pipeline case (*Wilderness Society et al. v. Morton*) as a "not dissimilar" example of administrative agencies' claiming they "are entitled to violate the law if they do it often enough."

A Forest Service official said the government might ask Congress for a change in the law about timber cutting, rather than appeal the Monongahela ruling to the high court.

The appeals court in its decision strictly interpreted the Organic Act of 1897 which

provides that only "dead, mature or large growth" trees may be cut in national forests. The act provides that the trees must be individually marked before they are cut.

Forest Service practice in recent years has been to cut down younger trees when they have reached their prime stage of marketability.

Writing the three-judge appeals panel's decision, Judge John A. Field noted that "the heart of this controversy is the change in the role of the Forest Service over the past 30 years."

In the half-century since its founding in 1905, the Forest Service considered itself the "custodian and protector of the forest... and... safely carried out the provisions of the Organic Act," wrote Judge Field.

With the demand for lumber for home-building after World War II, said Field, "the posture of the Forest Service quickly changed from custodian to a production agency."

The original Monongahela suit was brought by the West Virginia division of the Izaak Walton League of America, the Sierra Club and the Natural Resources Defense Council.

BWCA Appeal Due

The Boundary Waters Canoe Area case resulted from a suit brought in 1972 against the Forest Service and several logging companies by the Minnesota Public Interest Research Group (MPIRG). A preliminary injunction banning logging in the million-acre BWCA was issued in 1973, and it was upheld the next year by the Eighth U.S. Circuit Court of Appeals. But in August, 1974, after the Forest Service announced sales of six timber parcels in BWCA's Portal Zone, MPIRG filed a new complaint. A temporary injunction issued by the district court in that suit now becomes permanent.

However, the Forest Service has announced it will appeal the court-imposed ban. Observers anticipate a hearing on the appeal as early as this month or next, with a quick decision following by the appeals court. Readers are urged to write the Chief Forester protesting the service's unwillingness to accept the court order and urging that the service formulate policies and practices which would respect the BWCA's wilderness integrity and its place in the National Wilderness Preservation System. Letters should be directed to:

Mr. John R. McGuire, Chief
U. S. Forest Service
Department of Agriculture
Washington, D.C. 20250

Proposed power plants would make
the Grand Canyon region . . .

A National Sacrifice Area



The majestic cliffs of Kaiparowits photographed by Philip Hyde. Will the vista be spoiled?

The Department of the Interior is considering a proposal entailing major environmental impact on what may be the nation's wildest, most scenic region outside Alaska—the "color country" of southern Utah and adjoining states. Grand Canyon National Park, Bryce Canyon, Zion, Canyonlands—the list is long, and all would be impaired if the project is approved. These are among the impacts documented in the Interior Department's draft environmental impact statement on the proposed Kaiparowits Power Project, the first and largest of five new power plants proposed in southern Utah.

Someone once half-jokingly said that all of southern Utah should have been made a national park. Instead it is about to become a national sacrifice area. The Wilderness Society considers the degradation of the region unacceptable and believes the Interior Department should reject the Kaiparowits Power Project. The needed alternative is a national energy plan that will stress energy conservation and locate power developments where they will not destroy the irreplaceables of our national wildland heritage.

Hundred-Mile Vistas

The Kaiparowits Plateau, sometimes called Fifty-Mile Mountain, stretches above the high desert and canyon country of southern Utah, standing out as an identifying landmark in a land where vistas of a hundred miles are commonplace. It is part of the public domain administered by the Bureau of Land Management.

The Power Project, a joint venture of three utility companies in southern California and Arizona, involves construction of a 3,000-megawatt coal-fired power plant on 9,000 acres of public land at Fourmile Bench on the Kaiparowits Plateau; a high-voltage transmission system; development of four underground coal mines; paved roads; limestone and aggregate quarries; and a new town.

"By far the most severe impact to the entire region is the visual pollution created by smoke and other airborne particulates emitted from the plant," stated an Interior Department draft impact statement on Kaiparowits last year. The new draft, released late in July, confirms that the impact will adversely affect the clean air and vast

open spaces over a large area of Utah, New Mexico, Arizona, Colorado, Nevada, California and the Indian Nations.

A Grim Prospect

According to the impact statement, visibility will be reduced by fog plumes, particulate emissions, mining activities, travel and dust from exposed and unstabilized soils. The topography will be affected by all phases of construction activities. In short, the impact statement details a grim picture for a fragile and beautiful region of our country.

Kaiparowits is not the only plant being planned for the Southwest. With the much smaller ones already operating and those still proposed, the region could end up with 14 power plants, with Kaiparowits the largest. Within a 200-mile radius of Kaiparowits are eight national parks, 26 national monuments, three national recreation areas, two national historic sites and one national memorial—together equal to one-fifth the acreage of the entire national park system. Wilderness proposals for 13 of these areas are already pending.

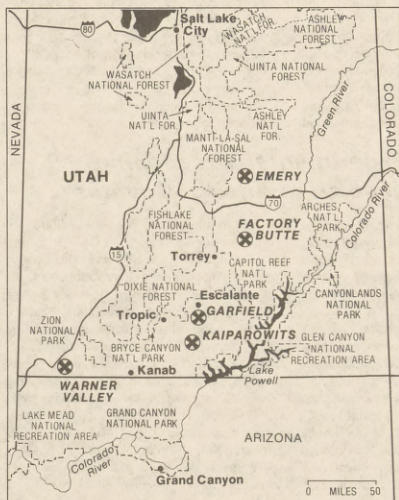
On the Kaiparowits Plateau itself the Bureau of Land Management is considering establishing a primitive area. Also within the region are three existing BLM primitive areas and numerous other tracts currently under study for primitive designation.

In the national forests of southern Utah five roadless areas have been designated by the Forest Service for study as potential wilderness, and 60 other roadless areas have been identified.

Redrock Canyons Menaced

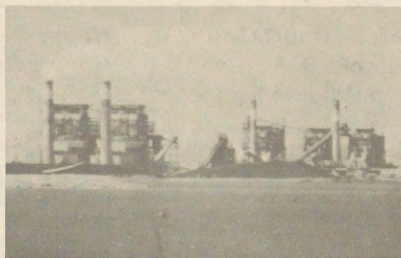
The proposed wilderness in Glen Canyon National Recreation Area, including the intimate redrock canyons of the Escalante River, stands to suffer worst from the Kaiparowits Project because

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Crosses mark sites of proposed Utah power plants.

EPA-DOCUMERICA—Terry Eiler



Utah's Four Corners power plant—a grim warning.

of its close proximity. Earlier this year wilderness hearings in Utah and Arizona elicited comments from more than 2,000 people, of whom 86 percent supported some form of wilderness in the recreation area. Nearly 900 people urged enlargement of the National Park Service wilderness proposal to include 1,032,000 acres, as recommended by conservation organizations.

In a memorandum to higher-up Interior Department officials the National Park Service stressed that the region is "of critical national interest and concern." The service warned that the Kaiparowits Project could cause "severe impairment or loss of the prime esthetic qualities and resources unique to this region," would "threaten cultural, archeological and historic resources" and would "impose an insidious pollution load" on Lake Powell. The Park Service urged relocation of the power plants farther from the parks.

Other western states have rejected massive power projects. Utah alone has welcomed them. In Utah, the *New York Times* observed, "there is no organized opposition to the proposed Utah plants, and almost universal approval among state officials of Kaiparowits."

"With southern California consuming most of this new power," said the *Los Angeles Times*, "it's figuratively as if Utah is willing to sacrifice herself on the altar to keep Los Angeles lighted." The need for the project, according to proponents, lies in the projected doubling in electricity demand in the next decade.

How to Help

If you agree that the Grand Canyon region should not be made a national sacrifice area, this is how you can help:

1. Write to President Gerald R. Ford (The White House, Washington, D.C. 20500) and ask him to order that the Kaiparowits Power Project be rejected. Ask him to order preparation of a national energy plan that will emphasize energy conservation and ensure protection of the nation's irreplaceable parks and wildlands. Also urge him to extend the public comment period until January 31 to allow thorough national consideration of the project.
2. Write to Paul L. Howard, State Director, Bureau of Land Management (125 South State St., Salt Lake City, Utah 84111) before September 30 to submit your views on Kaiparowits for inclusion in the official record on the draft environmental impact statement.

You may wish to send copies of the above letters to your Senators and your Representative; such expressions are often helpful to their consideration of conservation matters. Get your friends and local civic and social organizations to write, too!

September 1, 1975

Fresh Court Order Blocks BLM Move On Wildlife Ranges

On July 29 the U.S. District Court in Washington, D.C., issued a preliminary injunction further delaying the takeover of three national wildlife ranges by the Bureau of Land Management.

Judge William B. Bryant ruled that the Interior Department's decision to oust the U.S. Fish and Wildlife Service and transfer the wildlife ranges to BLM without completing an environmental impact statement was "arbitrary, capricious, an abuse of discretion, and not in accordance with law." The areas affected are the Kofa Game Range (Arizona), Charles Sheldon Antelope Range (Nevada and Oregon) and C.M. Russell National Wildlife Range (Montana).

The decision does not permanently block the transfer, because the Interior Department can satisfy the court order by writing an environmental impact statement. Later this fall Judge Bryant will consider the other contention in *The Wilderness Society's* lawsuit, namely that the Interior Department has no authority to transfer wildlife refuges or ranges to exclusive BLM jurisdiction.

Delay in the transfer was also directed by the House Appropriations Committee on the initiative of its Subcommittee on Interior and Related Agencies, headed by Rep. Sidney R. Yates (D-Ill.).

Bill Bars Transfers

A permanent bar to the BLM takeover would be provided by enactment of H.R. 5512, now awaiting final action on the floor of the House after being favorably reported by the Committee on Merchant Marine and Fisheries. The bill prohibits the transfer of any unit of the national wildlife refuge system out of the hands of the Fish and Wildlife Service.

On the House floor Rep. Sam Steiger (R-Ariz.) is expected to offer an amendment allowing Kofa Game Range to be turned over to BLM. In a House speech on July 23, Mr. Steiger charged that H.R. 5512 "is done out of pique. It is done in defiance of public opinion, and it is done in the face of those who are directly involved."

Nationwide opposition to the BLM takeover was cited in House speeches on the same day by Reps. John D. Dingell (D-Mich.), William S. Moorhead (D-Pa.), Don Edwards (D-Calif.) and Richard L. Ottinger (D-N.Y.) praising the Appropriations Committee's action and supporting H.R. 5512.

House Passage of Assateague Repealer Cheers Escalante Highway Opponents

The Senate has struck a blow for the wilderness of Assateague Island National Seashore by approving legislation to repeal a statutory mandate for construction of a highway the length of the island. If built, the highway would destroy the wilderness potential of the island, which is 33 miles long but less than two miles across. The repeal bill, S. 82, is now awaiting action by the House Interior Committee.

The highway mandate was part of the law establishing the national seashore in Maryland and Virginia 10 years ago. During the intervening decade conservationists in the two states persuaded the National Park Service that the road should never be built. By gradually gaining the support of state legislators and governors, conservationists were able to overcome the remaining pro-highway sentiment among local business interests.

The Assateague case gives hope for resolution of a similar highway issue in the Escalante Canyon country of Utah's Glen Canyon National Recreation Area. The 1972 law establishing the recreation area authorized the National Park Service to build a "scenic road" linking two marinas on Lake Powell reservoir and bisecting the proposed Escalante wilderness. This highway plan, originated by the Utah Highway Department, is being promoted by a handful of influential businessmen in southeastern Utah and has been controversial in the state for almost a decade. The mandate provision was inserted in the Glen Canyon law by former Rep. Sherman P. Lloyd (R-Utah) in an ad-

mitted attempt to thwart conservationists' efforts once and for all. Only weeks after enactment of the law Mr. Lloyd was defeated at the polls, but his highway mandate lives on.

The issue came up again in May at hearings on wilderness proposals for Glen Canyon National Recreation Area. Utah conservationists urged rejection of the trans-Escalante highway and recommended wilderness designation for the entire Escalante canyon area as part of a million-acre wilderness plan for the recreation area. However, Gov. Calvin L. Rampton (D) and other Utah politicians once again backed the destructive highway plan, disregarding predominantly anti-highway testimony from citizens at the hearings. The highway mania evidently dies hard in Utah, but Utah conservationists are working hard to turn the tables.

One of the classic victories against national park highway proposals was the defeat of the trans-mountain road proposed for Great Smoky Mountains National Park in 1965. George B. Hartzog, Jr., then director of the National Park Service, proposed the highway, which would have bisected the magnificent wilderness of the western Smokies. It took a national effort and a well-organized campaign in North Carolina and Tennessee to stop the project. Victory came after six years of struggle.

The Escalante and Assateague cases reflect anew the growing public resistance to building more highways through the nation's surviving wild country.

Ford Allows 'Experimental' Broadening Of Sodium Cyanide Use Against Coyotes

President Ford on July 18 responded to pressure from the western sheep-raising industry by broadening the permissible uses of sodium cyanide poison against coyotes and other predatory animals and birds on the public lands. The President's action came in a revision of President Nixon's widely praised 1972 Executive Order banning all predator poisoning on public lands except in emergencies.

The Ford order allows use of any sodium cyanide devices "on an experimental basis," at the discretion of the heads of the Bureau of Land Management, Forest Service and other agencies. However, "experimental" is not defined in the order. It could be con-

strued to allow entire states to be blanketed with cyanide devices.

The Wilderness Society and other conservation organizations were critical of the broad-brush approach of the new policy, pointing out that it would allow "experimental" use of the indiscriminate M-44 "coyote getter," a cyanide device that not only is ineffective in stopping sheep predation by coyotes but is unselective, killing many other animals that have nothing to do with sheep. Data on the Interior Department's emergency use of M-44s during October, 1974, showed a kill of 573 coyotes, 119 foxes, 6 wild dogs, 10 raccoons, 10 skunks and 14 opossums.

MEMORIAL/HONORARY GIFTS—The Wilderness Society welcomes memorial and honorary gifts from members and friends. An attractive card is sent on your behalf to the family of the deceased or the person honored. The amount of your gift is not indicated. Please designate honorary or memorial and send your name and address as well as the name and address to which the card should be sent.

Back Bay National Wildlife Refuge Is in Fight for Its Life

Surprising as it may seem, a unit of the nation's wildlife refuge system is located within the city limits of bustling Virginia Beach, Virginia.

Back Bay National Wildlife Refuge was created in 1938 to protect ducks and other waterfowl that twice a year travel along the Atlantic flyway to and from nesting grounds in the north. Back Bay's 9,208 acres of bay, barrier beach, marsh and wooded upland not only provide a resting place and winter habitat for many Canada and snow geese, whistling swans, canvasbacks, other ducks and shore and wading birds but are notable as wintering territory for the endangered peregrine falcon.

Back Bay's beach has a history of vehicular use, but until lately this was not a serious problem. Then came the outdoor recreation explosion. The beach lay supine before the recreational onslaught. Some wildlife populations fell precipitately, especially those dependent on the delicate biology of an undisturbed beach.

Beach Lots Sold

Simultaneously came intensive promotion of the sale of beach lots on the Outer Banks of North Carolina, just over the Virginia line. To reach their Outer Banks lots, Virginia owners found the easiest route was along the refuge beach, then along the beach of False Cape State Park immediately south.

Beginning in 1970, the U.S. Fish and Wildlife Service (FWS), alarmed by flagrant

disregard of beach regulations and fearing destruction of the refuge, tried to limit beach traffic. Even so, in June, July and August of 1972 nearly 20,000 vehicles churned the sand along the beach.

Public hearings were held. Controversy reached white heat. Unlucky purchasers of beach lots apparently bought without realizing they had no guaranteed access to their property.

FWS Sets Controls

FWS announced regulations to become effective March 30, 1973, requiring access permits—to be issued to property owners in the False Cape State Park acquisition area, permanent full-time residents of the Outer Banks, verified visitors, commercial fishermen, school buses and service, emergency and utility vehicles.

By any reasonable standard FWS made an adequate effort to accommodate everyone while still fulfilling its obligation to protect the refuge and its wildlife communities. But commercial interests and some recreationists and lot owners cared little about the integrity of a wildlife refuge. So they took the Department of the Interior to court, seeking an injunction against access restrictions. The Wilderness Society, along with 15 other environmental groups, intervened on the side of the department. (A 2,100-acre portion of the refuge has been recommended to Congress by the President for addition to the National Wilderness Preservation System.)

In April, 1973, U.S. District Judge John MacKenzie issued an order allowing beach passage by special permit to homeowners and one trip monthly to all lot owners. The

order remained in force until last February 28, when the judge ordered that FWS restrictions be made fully effective at once.

Again unwilling to accept a worthy land and wildlife ethic, the plaintiffs appealed. But the Fourth Circuit Court of Appeals upheld the Interior Department's right to restrict public access to national wildlife refuges. (Some observers consider the ruling the most significant to date on the question of the government's right to bar access across public lands when intrusion may cause environmental and ecological degradation.)

Congress Approached

Determined to force their motorized way through the refuge, the plaintiffs have now instigated introduction in Congress of legislation designed to overturn the court decision, by granting all North Carolina Outer Banks property owners the right to vehicular access through the refuge. H.R. 8644, introduced by Rep. Robert W. Daniel (D-Va.), is co-sponsored by all but two members of the Virginia House delegation and by the entire North Carolina delegation.

To assure the future of Back Bay Refuge, it is vital (1) to uphold the restrictions on vehicular beach use, (2) to prevent the building of a behind-the-dunes road through the refuge and False Cape State Park, and (3) to obtain Wilderness Act protection for the proposed 2,100-acre wilderness unit. HOW TO HELP: Write immediately to Hon. Nathaniel P. Reed, Assistant Secretary of the Interior, Department of the Interior, Washington, D.C. 20240. Urge that the department stand firm on the Back Bay Refuge access regulations.

The Wilderness Society publishes *The Living Wilderness* magazine, sponsors "A Way to the Wilderness" trips and welcomes new members.

The Wilderness System

A report covering every existing or proposed wilderness

"YOU easterners just want to set up wilderness playgrounds at the expense of westerners." Twenty years ago this argument was heard in the battle for passage of what was to become the 1964 Wilderness Act.

That argument was laid to rest when Congress passed the eastern wilderness areas act on December 19, 1974, adding 16 eastern national forest wilderness areas, encompassing 206,988 acres in 13 states, to the National Wilderness Preservation System. One of the most significant citizen conservation achievements in recent years, this law also directs the U.S. Forest Service to study 17 additional areas, totaling 125,000 acres, within the next five years and to report back to Congress on their suitability for addition to the Wilderness System.

For 10 years the question of eastern wilderness brewed and stewed. On one side citizen conservationists argued that eastern national forest lands should be reviewed as wilderness. On the other side the Forest Service insisted that no such areas existed, that man's past activities there forever disqualified them. As a compromise, the Forest Service was willing to set aside some eastern areas as "wild" or "backcountry." Citizen conservationists would not bite, however.

The citizens' key argument was the Wilderness Act itself, which required only that the works of man be "substantially unnoticeable." Forty to 50 years of natural land-renewing processes had restored many areas to near-pristine conditions, citizens argued, and Congress had already designated eastern wilderness areas on similar eastern lands in the national wildlife refuge system.

Exasperated with the Forest Service, citizens finally turned to Congress, which, after extensive

*Chart 1—The National Wilderness Preservation System
As of December 31, 1974*

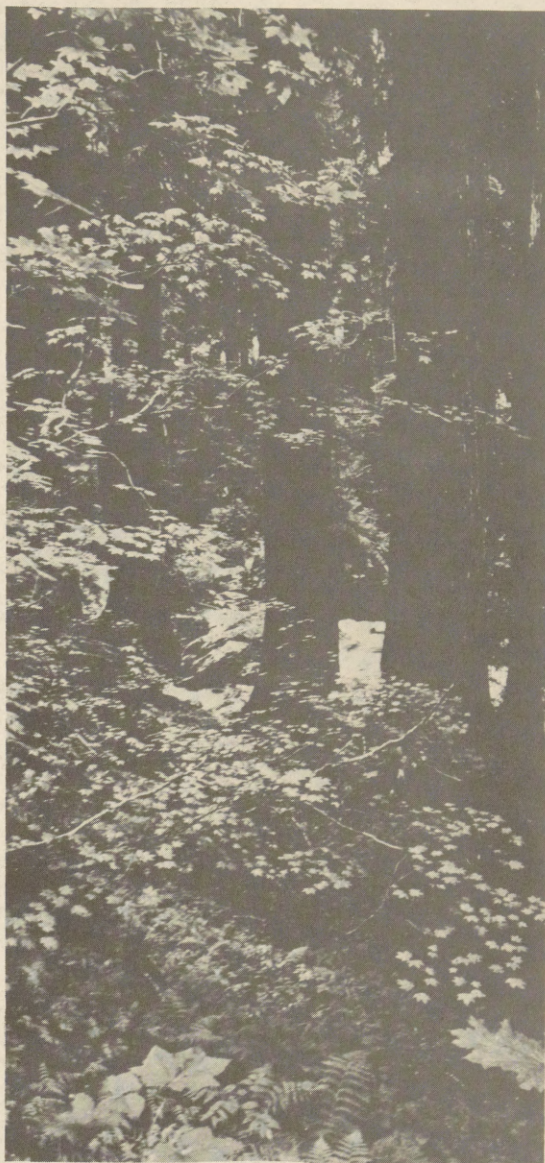
No.	Wilderness	Agency ¹	State	Year Entered	Public Law	Acreage
1	Gila	USFS	New Mexico	1964	88-577	438,626
2	Boundary Waters Canoe Area	USFS	Minnesota	1964	88-577	1,034,852
3	Mountain Lakes	USFS	Oregon	1964	88-577	23,071
4	Eagle Cap ²	USFS	Oregon	1964	88-577	292,700
5	Bridger	USFS	Wyoming	1964	88-577	383,300
6	Mount Hood	USFS	Oregon	1964	88-577	14,160
7	Goat Rocks	USFS	Washington	1964	88-577	82,680
8	Marble Mountain	USFS	California	1964	88-577	214,543
9	Yolla Bolly-Middle Eel	USFS	California	1964	88-577	111,091
10	South Warner	USFS	California	1964	88-577	69,547
11	Thousand Lakes	USFS	California	1964	88-577	16,335
12	Cucamonga	USFS	California	1964	88-577	9,022
13	San Geronio	USFS	California	1964	88-577	34,718
14	Hoover	USFS	California	1964	88-577	42,800
15	San Jacinto	USFS	California	1964	88-577	21,955
16	Caribou	USFS	California	1964	88-577	19,080
17	Minarets	USFS	California	1964	88-577	109,559
18	John Muir	USFS	California	1964	88-577	504,263
19	San Pedro Parks	USFS	New Mexico	1964	88-577	41,132
20	Bob Marshall	USFS	Montana	1964	88-577	950,000
21	Mount Zirkel	USFS	Colorado	1964	88-577	72,180
22	West Elk	USFS	Colorado	1964	88-577	62,000
23	Rawah	USFS	Colorado	1964	88-577	26,797
24	Galiuro	USFS	Arizona	1964	88-577	55,000
25	North Absaroka	USFS	Wyoming	1964	88-577	359,700
26	Washakie ³	USFS	Wyoming	1964	88-577	714,300
27	La Garita	USFS	Colorado	1964	88-577	49,000
28	Chiricahua	USFS	Arizona	1964	88-577	18,000
29	Sierra Ancha	USFS	Arizona	1964	88-577	20,850
30	Maroon Bells- Snowmass	USFS	Colorado	1964	88-577	66,280
31	White Mountain	USFS	New Mexico	1964	88-577	28,230

¹ USFS = U.S. Forest Service
FWS = Fish and Wildlife Service
NPS = National Park Service

² An addition was made to the Eagle Cap Wilderness by PL 92-521, in 1972.

³ The South Absaroka Wilderness Area was incorporated into the wilderness system in 1964. In 1972, the Stratified Primitive Area was added to it and the name of the wilderness area was changed to Washakie (PL 92-476).

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Philip Hyde

Glacier Peak Wilderness, Washington, augmented in 1968

hearings in eastern states and in Washington, D.C., accepted the citizens' arguments.

(Eastern wilderness areas will be found in chart 1, numbers 94-109; eastern wilderness study areas are listed in chart 4.)

How It Works

Relief for such citizen exasperation with a federal land management agency such as the Forest Service was not always possible—not until passage of the 1964 Wilderness Act, the first major public land law giving citizens access to decision-making processes affecting those lands. It was, as the last 10 years in the American wilderness movement amply testify, a considerable enfranchising.

The Act gives citizens a three-phased access to public lands policy regarding wilderness. The successful implementation of this procedure has been a major affirmation of participatory democracy. Here, in outline, is how it works:

1. *Field Review Phase*

Agency field studies terminating in local public hearings on a preliminary wilderness proposal.

2. *Executive Review Phase*

Records of public hearings reviewed by the agencies culminating in recommendations by the Secretary of the Interior or Secretary of Agriculture to the President and terminating with Presidential recommendations to the Congress.

3. *Congressional Review Phase*

Only the Congress, by taking affirmative legislative action, can incorporate an area into the National Wilderness Preservation System.

The Wilderness Act gave wilderness review agencies—Forest Service, Park Service and Fish and Wildlife Service—10 years to review lands meeting certain criteria and to make recommendations to the President on their suitability or non-suitability as wilderness. No such statutory deadline was imposed on either the President or the Congress.

The 10-year agency review period ended September 4, 1974.

Wilderness suitability recommendations were transmitted to the President by that date on all remaining areas reviewed by the agencies. The last phase, congressional reviews, now becomes the principal center of activity seeking to achieve the promise of the Wilderness Act "to secure for the American people of present and future generations the benefits of an enduring resource of wilderness."

This special section of *The Living Wilderness* presents a status report, as of December 31, 1974, on every national park, wildlife refuge and forest area awaiting entry into the National Wilderness Preservation System. As a convenient reference we also list all current units of the National Wilderness Preservation System. Finally, we examine the short-range future for wilderness dedication and discuss problems citizens will confront as they seek formal designation of over 150 remaining units of the national park, national forest and national wildlife refuge systems as wilderness.

Other Additions To the System

On December 19, 1974 the Congress enacted another wilderness measure which added four primitive areas (604,500 acres), 12 new national wildlife refuge units (111,337 acres), and a 4,719-acre addition to the existing Moosehorn Wilderness (Maine) to the National Wilderness Preservation System.

This action further documented the intent of Congress that the Wilderness System be national in scope, since 10 wildlife refuge wilderness areas and the addition to Moosehorn are situated east of the 100th meridian. Earlier in 1974, Farallon (California) and Okefenokee (Georgia), both national wildlife refuge wilderness areas, were added, bringing the total 93rd Congress designations under Wilderness Act processes to 1,064,547 acres in 18 new wilderness units. (These new wilderness units are listed in chart 1, pages 41-42.)

No.	Wilderness	Agency ¹	State	Year Entered	Public Law	Acres
32	Pecos	USFS	New Mexico	1964	88-577	165,000
33	Teton	USFS	Wyoming	1964	88-577	563,500
34	Cabinet Mountains	USFS	Montana	1964	88-577	94,272
35	Selway-Bitterroot	USFS	Idaho, Montana	1964	88-577	1,243,659
36	Three Sisters	USFS	Oregon	1964	88-577	196,708
37	Anaconda-Pintlar	USFS	Montana	1964	88-577	159,086
38	Mazatzal	USFS	Arizona	1964	88-577	205,346
39	Superstition	USFS	Arizona	1964	88-577	124,140
40	Strawberry Mountain	USFS	Oregon	1964	88-577	33,653
41	Mount Adams	USFS	Washington	1964	88-577	42,411
42	Gearhart Mountain	USFS	Oregon	1964	88-577	18,709
43	Kalmiopsis	USFS	Oregon	1964	88-577	78,850
44	Gates of the Mountains	USFS	Montana	1964	88-577	28,562
45	Linville Gorge	USFS	North Carolina	1964	88-577	7,655
46	Diamond Peak	USFS	Oregon	1964	88-577	35,440
47	Mount Washington	USFS	Oregon	1964	88-577	46,655
48	Jarbidge	USFS	Nevada	1964	88-577	64,827
49	Great Gulf	USFS	New Hampshire	1964	88-577	5,400
50	Wheeler Peak	USFS	New Mexico	1964	88-577	6,051
51	Glacier Peak ⁴	USFS	Washington	1964	88-577	468,505
52	Dome Land	USFS	California	1964	88-577	62,561
53	Mokelumne	USFS	California	1964	88-577	50,400
54	Shining Rock	USFS	North Carolina	1964	88-577	13,400
55	San Rafael	USFS	California	1968	90-271	143,000
56	San Gabriel	USFS	California	1968	90-318	36,000
57	Great Swamp	FWS	New Jersey	1968	90-632	3,750
58	Pasayten	USFS	Washington	1968	90-544	500,000
59	Mount Jefferson	USFS	Oregon	1968	90-548	100,000
60	Ventana	USFS	California	1969	91-58	98,000
61	Desolation	USFS	California	1969	91-82	63,500
62	Bering Sea	FWS	Alaska	1970	91-504	41,113
63	Bogoslof	FWS	Alaska	1970	91-504	390
64	Tuxedni	FWS	Alaska	1970	91-504	6,402
65	St. Lazaria	FWS	Alaska	1970	91-504	62
66	Hazy Islands	FWS	Alaska	1970	91-504	42
67	Forrester Island	FWS	Alaska	1970	91-504	2,630
68	Three Arch Rocks	FWS	Oregon	1970	91-504	17
69	Oregon Islands	FWS	Oregon	1970	91-504	21
70	Washington Islands	FWS	Washington	1970	91-504	179
71	Salt Creek	FWS	New Mexico	1970	91-504	8,500
72	Island Bay	FWS	Florida	1970	91-504	20
73	Passage Key	FWS	Florida	1970	91-504	20
74	Wichita Mountains	FWS	Oklahoma	1970	91-504	8,900
75	Seney	FWS	Michigan	1970	91-504	25,150
76	Huron Islands	FWS	Michigan	1970	91-504	147
77	Michigan Islands	FWS	Michigan	1970	91-504	12
78	Wisconsin Islands	FWS	Wisconsin	1970	91-504	29

No.	Wilderness	Agency ¹	State	Year Entered	Public Law	Acres
79	Moosehorn ⁵	FWS	Maine	1970	91-504	7,501
80	Pelican Island	FWS	Florida	1970	91-504	3
81	Monomoy	FWS	Massachusetts	1970	91-504	2,340
82	Craters of the Moon	NPS	Idaho	1970	91-504	43,243
83	Petrified Forest	NPS	Arizona	1970	91-504	50,260
84	Mount Baldy	USFS	Arizona	1970	91-504	7,000
85	Pine Mountain	USFS	Arizona	1972	92-230	19,500
86	Sycamore Canyon	USFS	Arizona	1972	92-241	48,500
87	Cedar Keys	FWS	Florida	1972	92-364	375
88	Scapagoat	USFS	Montana	1972	92-395	240,000
89	Sawtooth	USFS	Idaho	1972	92-400	216,383
90	Lava Beds	NPS	California	1972	92-493	28,460
91	Lassen Volcanic	NPS	California	1972	92-510	78,982
92	Okefenokee	FWS	Georgia	1974	93-429	343,850
93	Farallon	FWS	California	1974	93-550	141
94	Sipsey	USFS	Alabama	1974	93-622	12,000
95	Caney Creek	USFS	Arkansas	1974	93-622	14,433
96	Upper Buffalo	USFS	Arkansas	1974	93-622	10,590
97	Bradwell Bay	USFS	Florida	1974	93-622	22,000
98	Beaver Creek	USFS	Kentucky	1974	93-622	5,500
99	Presidential Range-Dry River	USFS	New Hampshire	1974	93-622	20,380
100	Joyce Kilmer-Slickrock	USFS	North Carolina, Tennessee	1974	93-622	15,000
101	Ellicott Rock	USFS	Georgia, North Carolina, South Carolina	1974	93-622	3,600
102	Gee Creek	USFS	Tennessee	1974	93-622	2,570
103	Bristol Cliffs	USFS	Vermont	1974	93-622	6,500
104	Lye Brook	USFS	Vermont	1974	93-622	14,300
105	James River Face	USFS	Virginia	1974	93-622	8,800
106	Dolly Sods	USFS	West Virginia	1974	93-622	10,215
107	Otter Creek	USFS	West Virginia	1974	93-622	20,000
108	Rainbow Lake	USFS	Wisconsin	1974	93-622	6,600
109	Cohutta	USFS	Georgia, Tennessee	1974	93-622	34,500
110	Chamisso	FWS	Alaska	1974	93-632	455
111	Florida Keys	FWS	Florida	1974	93-632	4,740
112	St. Marks	FWS	Florida	1974	93-632	17,746
113	Blackbeard Island	FWS	Georgia	1974	93-632	3,000
114	Wolf Island	FWS	Georgia	1974	93-632	5,126
115	Breton	FWS	Louisiana	1974	93-632	5,000
116	Brigantine	FWS	New Jersey	1974	93-632	6,603
117	Bosque del Apache	FWS	New Mexico	1974	93-632	30,850
118	Chase Lake	FWS	North Dakota	1974	93-632	4,155
119	Lostwood	FWS	North Dakota	1974	93-632	5,577
120	West Sister Island	FWS	Ohio	1974	93-632	85

⁴An addition was made to the Glacier Peak Wilderness by PL 90-544, in 1968.

⁵The Baring unit was added to the existing Moosehorn Wilderness by PL 93-632, in 1974.

Agency Totals

The 1964 Wilderness Act designated 54 areas totaling 9.3 million acres in the national forest system as units of the National Wilderness Preservation System. Congress has since enacted legislation adding 71 areas totaling more than 3 million acres in the national forest, national park and national wildlife refuge systems, and adding nearly 300,000 acres to four existing wilderness areas in two systems (see footnotes, chart 1). To date, there are 85 wilderness units (nearly 11.9 million acres) in the national forests, four wilderness units (201,000 acres) in the national parks, and 36 units (563,000 acres) in the national wildlife refuges. These 125 wilderness areas comprise the 12.6 million acres now in the National Wilderness Preservation System.

In chart 1 the 54 areas incorporated in the National Wilderness Preservation System in 1964 are numbered according to the date that the Forest Service originally, by administrative action, set them aside for preservation as primitive, wilderness, wild or canoe areas. Areas designated after 1964 are numbered according to the dates of the public laws providing for their establishment. Where more than one wilderness appears in a single law, the numbering is according to the listing in that law.

Wilderness In Congress

Potential wilderness areas now in the final, congressional review phase of the wilderness review process are grouped by agency in charts 2 through 9.

The President transmitted 37 new wilderness areas to Congress on December 4, 1974, three months after agency recommendations were made. These areas are listed under the appropriate recommending agencies.

National Forest System

Sixteen primitive areas have been incorporated in the National Wilderness Preservation System since 1964. Eighteen must still be acted upon by Congress (shown in chart 2). The Forest Service has recommended approximately 3.6 million acres in these remaining 18 areas, while citizens are proposing additions of more than 2.4 million acres overall, for an approximate total of 6 million acres.

In addition to the 18 candidate areas, Congress has enacted legislation requiring that five other areas also be studied for wilderness by the Forest Service. The deadlines for completing such studies and reporting to Congress appear in chart 3.

Chart 4 lists study areas in the eastern wilderness act, again with deadlines for completion of studies.

The 'Purity' Debate

Although Congress has consistently overruled it, the Forest Service has been slow to change its position on wilderness "purity." Forest Service wilderness recommendations still exclude large blocks of land ostensibly because of the appearance of man's activities. (See the discussion on Eastern Wilderness above.) This argument—based, as conservationists see it, on a misinterpretation of the Wilderness Act—holds that a provision of the Act reading "generally appearing to have been affected primarily by the forces of nature, with the imprint of man's work *substantially* unnoticeable" (emphasis added), requires a pristine appearance with no evidence of man's activities whatsoever. Furthermore, Forest Service recommendations consistently view wilderness as principally a recreation resource, often ignoring the many other values of wilderness, such as watershed preservation or irreplaceable wildlife habitat conservation, to name just two. While recreation is a valuable and important use of wilderness, conservationists maintain that this should not be the primary criterion for

No.	Wilderness	Agency ¹	State	Year Entered	Public Law	Acreage
121	Cape Romain	FWS	South Carolina	1974	93-632	28,000
122	Agua Tibia	USFS	California	1974	93-632	16,971
123	Emigrant	USFS	California	1974	93-632	106,910
124	Weminuche	USFS	Colorado	1974	93-632	405,031
125	Mission Mountains	USFS	Montana	1974	93-632	75,588
TOTAL ACREAGE						12,647,808

Chart 2—Forest Service Wilderness Proposals Awaiting Enactment

Primitive Area	Proposed Wilderness	State
Blue Range	Blue Range	Arizona, (part also in New Mexico)
High Sierra	Monarch	California
Salmon-Trinity Alps	Trinity Alps	California
Flat Tops	Flat Tops	Colorado
Gore Range-Eagles Nest	Eagles Nest	Colorado
Uncompahgre	Courthouse Mountain, Big Blue, Mt. Sneffels	Colorado
Wilson Mountains	Mt. Wilson, Dolores Peak	Colorado
Idaho	Idaho	Idaho
Salmon River Breaks	Salmon River	Idaho
Absaroka-Beartooth	Beartooth	Montana
Spanish Peaks	Spanish Peaks	Montana
Gila	Gila (addition)	New Mexico
Black Range	Aldo Leopold	New Mexico
High Uintas	High Uintas	Utah
Cloud Peak	Cloud Peak	Wyoming
Glacier	Glacier	Wyoming
Popo Agie	Popo Agie	Wyoming

Chart 3—Forest Service Wilderness Study Areas Mandated for Review

Primitive Area	Date	State
Hoover Wilderness* (Cherry Creek addition)	No deadline	California
Indian Peaks	No deadline	Colorado
Oregon Dunes	1975	Oregon
Lower Minam River	1977	Oregon
DuNoir Basin	1977	Wyoming

* Added in 1974 in PL 93-632 establishing Emigrant Wilderness.

Chart 4—Study Areas in the Eastern Wilderness Act

Study Area	Date	State
Belle Starr Cave	1980	Arkansas
Dry Creek	1980	Arkansas
Richland Creek	1980	Arkansas
Sopchoppy River	1980	Florida
Rock River Canyon	1980	Michigan
Sturgeon River	1980	Michigan

Study Area	Date	State
Craggy Mountain	1980	North Carolina
Wambaw Swamp	1980	South Carolina
Big Frog	1980	Tennessee
Citico Creek	1980	Tennessee
Mill Creek	1980	Virginia
Mountain Lake	1980	Virginia
Peters Mountain	1980	Virginia
Ramsey's Draft	1980	Virginia
Cranberry	1980	West Virginia
Flynn Lake	1980	Wisconsin
Round Lake	1980	Wisconsin

Chart 5—Alaska Units Where Reviews Were Postponed

Units	Agency	Acreage
Arctic	FWS	8,900,000
Clarence Rhode	FWS	2,887,000
Hazen Bay	FWS	6,800
Kodiak	FWS	1,815,000
Nunivak	FWS	3,656,400
Mt. McKinley	NPS	1,939,500
TOTAL ACREAGE		19,204,700

Chart 6—Park Service Wilderness Proposals Awaiting Enactment

National Park System Unit	State
Glacier Bay	Alaska
Katmai	Alaska
Chiricahua	Arizona
Grand Canyon ¹	Arizona
Lake Mead ²	Arizona, Nevada
Organ Pipe Cactus	Arizona
Saguaro	Arizona
Wupatki †	Arizona
Death Valley	California, Nevada
Joshua Tree	California
Kings Canyon	California
Pinnacles	California
Point Reyes	California
Sequoia	California
Yosemite	California
Black Canyon of the Gunnison	Colorado
Colorado	Colorado
Dinosaur	Colorado, Utah
Great Sand Dunes	Colorado
Mesa Verde	Colorado
Rocky Mountain	Colorado
Everglades	Florida
Haleakala	Hawaii
Hawaii Volcanoes	Hawaii
Cumberland Gap	Kentucky, Tennessee, Virginia
Mammoth Cave † ³	Kentucky
Assateague Island (part in Chincoteague NWR)	Maryland

¹ A new review, required by PL 93-620, is to be completed by 1977.

² The President has recommended that action be deferred for 3 years.

³ A reevaluation will be made at a later date.

drawing wilderness boundaries. Wilderness in itself is a resource of great value to mankind. Furthermore, each wilderness contains multiple values which should be protected for future generations.

Tremendous pressure from mining and timber companies often is brought to bear on the Forest Service to minimize its wilderness boundaries. Such pressure groups exercise "clout" beyond their local areas of operation. The most glaring example is the case of the Idaho and Salmon River Breaks Primitive Areas; at field hearings there the Forest Service presented a combined proposal of approximately 1.5 million acres, while citizens countered with their own "River of No Return" wilderness proposal approaching 2.3 million acres. The Office of Management and Budget, which reviews agency wilderness proposals for the President, trimmed nearly 400,000 acres from the Forest Service's modest recommendations, ignoring the Governor of Idaho and numerous citizen groups supporting a larger wilderness. Idaho newspapers credited this move to a private meeting of timber industry representatives and lobbyists with the Secretary of Agriculture.

Interior Department Policy

Wilderness policy conflicts between citizens and the National Park Service and Fish and Wildlife Service are identical. Wilderness proposals of these Interior Department agencies are therefore presented together in this section.

Management Language

Fearful that wilderness designation might interfere with its "management prerogatives," the Interior Department has developed "special management" provisions in its recent wilderness legislation.

The problem is that Interior Department officials tend to confuse the strict management guidelines in one part of the Act [Sec. 4]

with the flexible entrance criteria in another part [Sec. 2(c)]. Interior officials have held that the Sec. 4 guidelines must be viewed as *entry* criteria, and that unless specific management programs are enacted, agency administrators' hands will be tied by wilderness designation. Conservationists believe that Sec. 4 is intended to guide management of wilderness areas *after they have been designated under Sec. 2(c) criteria*.

Citizens interpret Sec. 4 as clearly intending to provide administrators the flexibility necessary for proper management of wilderness areas. That section includes such specific clarifications as "subject to existing private rights," and "... except as necessary to meet minimum requirements for the administration of the area for the purposes of this Act (including measures required in emergencies involving the health and safety of persons within the area)..." Interior's interpretation holds that, in effect, no management can be carried out in wilderness and that administrative activities must cease unless Congress specifically authorizes them by law.

Interior's position—while it may be ideal in the abstract—is seen by wilderness advocates as unrealistic. The law clearly provides that an activity need only meet a "minimum necessary" test. Section 4(c) places the burden on agency administrators to predetermine that, for example, a temporary road, use of motor vehicles, motorized equipment, etc., is the minimum necessary for proper administration of the area both for the purposes for which it was established and as wilderness. Furthermore, advocates assert, Sec. 4(b), which must be viewed in concert with 4(c), contains an important management direction to wilderness agencies, in that a proposed activity meeting the "minimum necessary" test must be carried out in such a manner as to preserve the area's wilderness character.

Citizens believe that such "special management language," if enacted into law, would not only di-

National Park System Unit	State
Isle Royale	Michigan
Glacier	Montana
Bandelier	New Mexico
Carlsbad Caverns	New Mexico
White Sands †	New Mexico
Theodore Roosevelt	North Dakota
Crater Lake	Oregon
Badlands	South Dakota
Great Smoky Mountains	Tennessee, North Carolina
Big Bend	Texas
Guadalupe Mountains	Texas
Bryce Canyon	Utah
Cedar Breaks	Utah
Zion	Utah
Shenandoah	Virginia
Olympic	Washington
Mount Rainier	Washington
North Cascades	Washington
Grand Teton	Wyoming
Yellowstone	Wyoming, Idaho, Montana

Chart 7—Park Service Wilderness Study Areas Mandated for Review

National Park System Unit	Date	State
Glen Canyon	1975	Arizona, Utah
Buffalo River	1975	Arkansas
Big Cypress *	1979	Florida
Canaveral *	1978	Florida
Gulf Islands	1975	Florida, Mississippi
Cumberland Island	1975	Georgia
Sleeping Bear Dunes	1974	Michigan
Voyageurs	4-years after establishment	Minnesota
Cape Lookout *	1978	North Carolina
Big Thicket *	1979	Texas
Arches	1974	Utah
Canyonlands	1974	Utah
Capitol Reef	1974	Utah

* Added in 1974.

Chart 8—Wildlife Refuge Wilderness Proposals Awaiting Enactment

National Wildlife Refuge System Unit	State
Aleutian Islands	Alaska
Kenai	Alaska
Izembek	Alaska
Semidi	Alaska
Simeonof	Alaska
Unimak	Alaska
Cabeza Prieta	Arizona
Havasu	Arizona, California
Imperial	Arizona, California
Kofa	Arizona
Big Lake	Arkansas
White River	Arkansas
Bombay Hook	Delaware

National Wildlife Refuge System Unit	State
Chassahowitzka	Florida
J. N. "Ding" Darling	Florida
Lake Woodruff	Florida
Hawaiian Islands	Hawaii
Snake River Islands (Deer Flat) †	Idaho, Oregon
Crab Orchard	Illinois
Upper Mississippi ¹	Illinois, Iowa, Minnesota, & Wisconsin
Lacassine	Louisiana
Blackwater †	Maryland
Parker River	Massachusetts
Agassiz	Minnesota
Mille Lacs	Minnesota
Rice Lake	Minnesota
Tamarac	Minnesota
Noxubee	Mississippi
Mingo	Missouri
Charles M. Russell	Montana
Medicine Lake	Montana
Red Rock Lakes	Montana
U L Bend	Montana
Crescent Lake	Nebraska
Fort Niobrara	Nebraska
Valentine	Nebraska
Anaho Island	Nevada
Charles Sheldon Antelope Range	Nevada
Desert	Nevada
Sheldon National Antelope Refuge	Nevada
Cedar Island	North Carolina
Mattamuskeet	North Carolina
Pea Island	North Carolina
Swanquarter	North Carolina
Hart Mountain	Oregon
Malheur	Oregon
Oregon Islands (addition)	Oregon
Santee	South Carolina
Missisquoi	Vermont
Back Bay	Virginia
Chincoteague (part of Assateague Island)	Virginia
Little Pend Oreille †	Washington
San Juan Islands	Washington

¹ A reevaluation will be made by 1977.

Chart 9—Park and Wildlife Refuge Units Overlooked
in Wilderness Reviews

Units	Agency	State
Channel Islands	NPS	California
Clear Lake	FWS	California
Fort Jefferson	NPS	Florida
Sabine	FWS	Louisiana
Acadia	NPS	Maine
Ozark	NPS	Missouri
San Andres	FWS	New Mexico
Wind Cave	NPS	South Dakota
Aransas	FWS	Texas
Virgin Islands	NPS	Virgin Islands

lute a flexible, realistic law through piecemeal amendments but also needlessly stifle future innovative park and wildlife refuge wilderness management and administration.

Potential Additions

The Interior Department has devised "potential wilderness addition" language in its legislation for wilderness proposals, arguing that it intends to maximize wilderness acreage thereby. This idea—included mainly in national park system wilderness proposals—is to permit areas with non-conforming features to be considered for addition to the wilderness at some unspecified future date when the feature is eliminated. Such features include grazing, controlled burning experiment areas, boat docks, etc. Some 585,000 acres have been recommended as potential wilderness additions. They range in size from 19 acres at Katmai to 81,900 acres at Everglades. The language would specifically delegate authority to determine when such additions qualify as wilderness, if ever, to the Secretary of the Interior, permitting him merely to announce in the Federal Register when a positive finding has been made.

Conservationists do not dispute the concept as much as the procedure. A basic principle involved in the struggle for the Wilderness Act was whether the agencies or Congress would finally determine wilderness suitability. Congress ultimately reserved that right. Given the subsequent agency resistance to wilderness reviews and ensuing heated debates over "enclaves," corridors and purity standards, the decision appears wise.

The Wilderness Act was designed with a flexibility to accommodate—with rare exceptions—all but the most excessive intrusions. Hence the potential wilderness addition language is viewed by proponents as unnecessary. Conservationists fear that, under such language, the additions might never be made. (Some grazing programs will continue for 25 years, for example.) Indeed, where such language might be necessitated by

unusual circumstances, proponents believe it should designate the area in question as wilderness subject only to elimination of the non-conformance, not to the discretion of a future Secretary. They regard it as important that Congress not delegate the responsibility for determining wilderness suitability to the executive branch, but make that decision initially.

No Recommendation

The Bureau of Land Management (BLM) has attempted, for more than a year, to wrest control of four large national wildlife ranges—the Kofa and Cabeza Prieta (Arizona), Charles M. Russell (Montana) and Charles Sheldon (Nevada)—from the Fish and Wildlife Service (FWS). Backed by mining and livestock interests, BLM's attempted grab threatens wilderness classification of over 3 million acres. In a move designed to meet the mandatory 10-year wilderness review provisions of the Wilderness Act and still satisfy mining interests which fought wilderness designation at field hearings, the President transmitted wilderness proposals on these areas to the Congress in December, 1974, with "no recommendation" until mineral surveys have been made and Congress appropriates the funds to conduct them. Identical recommendations were forwarded last summer on the Desert National Wildlife Range (Nevada), now under primary FWS control, and Glacier Bay National Monument (Alaska).

What could be the purpose of this when the Wilderness Act charges the President with responsibility to make a suitable or non-suitable recommendation? Interior sources say that the Office of Management and Budget, that all-powerful Presidential budgetary arm, initially decided that all Interior proposals for areas not yet withdrawn from mining would be sent to Congress with a *non-suitable* recommendation. After discussion a compromise was reached whereby the five wildlife ranges and Glacier Bay would be sent with "no recommendation,"

pending mineral surveys by the Geological Survey. The others, Death Valley (California) and Organ Pipe Cactus (Arizona), would be given approval provided Congress later enacted legislation withdrawing them from mining.

However, the Wilderness Act does not require mineral surveys of national park or national wildlife refuge units. Therefore, conservationists have maintained, Congress should reject this blatant mining industry subsidy and designate substantial portions of these magnificent areas as wilderness before it is too late.

By the end of 1974 no decision had been reached on BLM's attempted grab of the four wildlife ranges. Again, however, wilderness consideration could be foregone on millions of acres of prime wilderness country of inestimable value to many forms of wildlife, including several rare and endangered species. (Note: An Organic Act for the national wildlife refuge system, to elevate it to equal status with other federal land management agencies, has been introduced by Congressman John Dingell (D-Mich.). One important provision would stop wildlife refuge transfers unless approved by Act of Congress.)

Alaska

The largest potential wilderness meeting the mandatory review requirements of the Wilderness Act lies in Alaska—some 7.5 million acres in three national parks and over 22 million acres in 10 national wildlife refuges and ranges.

On December 18, 1973, the Interior Department recommended additions totaling 5 million acres to Mt. McKinley Park and Katmai National Monument, and 8.9 million to the Arctic and Clarence Rhode wildlife ranges, as part of its recommendations under Sec. 17 (d) (2)—the so-called 80-million-acre provision—of the Alaska Native Claims Settlement Act. The Act also entitled Alaska native villages situated within a wildlife refuge system unit to select not over three townships (69,120 acres) from wildlife area holdings.

Contending that wilderness reviews under the Wilderness Act were unrealistic in view of proposed extensions and potential conflicts with native selections, the Interior Department did not complete reviews on six areas totaling 19,204,700 million acres. Instead, Interior proposed to wait until Congress acts on its legislative proposals before conducting its field studies. This could take a decade or longer. Interior also held that it could not complete wilderness studies because of conflicts with native village selections, even though that deadline passed on December 18, 1974. And the native lands, confined to the townships in which the village is located plus two adjoining townships, were identified and withdrawn for selection in 1972.

Strangely enough, a wilderness recommendation was sent to Congress on Katmai National Monument in June, 1974, but it did not include proposed extensions. A "no recommendation" was transmitted on Glacier Bay National Monument.

Conservationists view these decisions with increasing alarm. Witnessing increasing pressure to develop and deliver Alaskan oil and gas to market, they fear that millions of acres of wilderness will be destroyed before Interior moves to complete its studies.

This fear was confirmed when the President sent wilderness recommendations to Congress in December, 1974, on the Kenai National Moose Range, trimming over 200,000 acres from the FWS proposal on which field hearings were held. The deleted area lies near an active oil field. Part is also sought by Cook Inlet natives, who seek lands in the moose range *in excess of the three townships provided by the settlement law.*

The national park and wildlife refuge units for which recommendations were postponed appear in chart 5.

National Park Service

Wilderness recommendations have been transmitted to Congress

by the President on 56 national park system units containing 24 million acres. At field hearings, and during executive and congressional reviews, conservationists have asked for wilderness designation for more than 3 million acres in addition to that recommended by the National Park Service. To date, four national park system areas have been included in the National Wilderness Preservation System.

During field studies the Park Service decided that five areas were non-suitable as wilderness. Those with which citizens were in disagreement are marked with a (†) in chart 6. The others are not listed.

In addition, Congress has enacted legislation requiring that the areas listed in chart 7 be studied for wilderness by the National Park Service. These new areas do not fall under the Wilderness Act deadline. The deadline for reporting to Congress on wilderness suitability follows the name of the study area.

Wildlife Refuge System

The U.S. Fish and Wildlife Service determined that 113 units of the national wildlife refuge system, containing some 30 million acres, were required to be reviewed under provisions of the Wilderness Act. To date, 36 wilderness areas have been designated in 41 such units. The Fish and Wildlife Service has made its final recommendations on all but four of the remaining units, these being delayed by the Alaska problems discussed above. The FWS has determined that 14 of the units are not suitable for wilderness designation. Citizen conservationists agreed with all but three of these recommendations. (Disputed areas are indicated with a (†) in chart 8.) The agency has called for nearly 10 million acres of wilderness, including acreage in five wildlife ranges held up for mineral surveys—about 2.8 million acres less than that proposed by conservationists.

A Look Ahead

What does the future hold for wilderness establishment? While there are too many unknowns and variables to chart a definite course, the opportunities appear great. But the roadblocks and struggles will likely be of similar magnitude. Following are some of the possibilities:

Alaska—The opportunities for eventual designation of large tracts of wilderness in Alaska appear favorable as Congress begins its deliberations on establishment of huge park and wildlife reservations in accordance with the mandate of the Alaska Native Claims Settlement Act. However, the Department of the Interior even now proposes to impair its own "80-million-acre" recommendations by withdrawing huge transportation corridors—mainly oil and gas pipeline systems—across some of the finest potential park and wildlife refuge areas. This will open these magnificent, pristine areas to unplanned development even before they can be considered by Congress.

The Arctic National Wildlife Range, at nine million acres the largest single block of potential wilderness in the United States, is in grave danger as oil companies mount pressure to build pipelines across it to deliver Prudhoe Bay gas and oil products to domestic markets.

Eastern Wilderness—Citizen teams are preparing to secure protection for wilderness study areas not included in the historic eastern wilderness areas act of 1974. Field studies may reveal other areas in the eastern national forests which also qualify.

But demands in the heavily populated east for open space, and a coal mining industry still unchecked by virtue of a Presidential veto of strip-mining legislation, could rapidly put heavy

pressure on national forest lands.

Roadless Inventory—The review of roadless areas by the Forest Service in the West, augmented by citizen reviews of numerous areas overlooked by Forest Service teams, could eventually bring many thousands of acres into the wilderness system.

Again, citizens must overcome resistance from extractive industry representatives and the Forest Service itself, which displays a reluctance to include prime wilderness in many areas it selected for study.

Bureau of Land Management—The PLM, which administers vast holdings in the western United States, was not included in the parent wilderness law. This deficiency came close to correction in the 93rd Congress when the Senate passed an Organic Act for BLM containing a statutory direction to the agency to review potential wilderness as part of its planning process. The House Interior Committee version had an even stronger wilderness review provision, but the bill died in committee when Congress adjourned without acting on it. Should Congress enact a BLM Organic Act, a strong wilderness review provision will assure that many outstanding areas of the public domain will receive consideration for inclusion in the National Wilderness Preservation System.

Prospects appear favorable for wilderness establishment for many years to come. But only an alert, involved and actively informed citizenry can save many valuable areas from destructive intrusion and see them through to eventual statutory designation as wilderness, our country's highest form of land dedication. —THE EDITORS

UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

CIVIL ACTION No. 75-1004

THE WILDERNESS SOCIETY, ET AL., PLAINTIFFS

v.

STANLEY K. HATHAWAY, DEFENDANT

FINDINGS OF FACT AND CONCLUSIONS OF LAW

FINDINGS OF FACT

1. This case was brought by The Wilderness Society, the Oregon Environmental Council and six individuals. The complaint alleges that members of the Wilderness Society use the three wildlife refuges involved in this case "for hiking, fishing, rock and animal hunting, bird and animal observation, nature studies, camping, and other outdoor wildlife and wilderness-oriented recreational activities", and that many of the members of the Oregon Environmental Council have visited and used the Sheldon Range. The complaint likewise alleges that the six individual plaintiffs have visited the ranges numerous times and that they use these areas for wildlife observation.

2. The defendant is Stanley K. Hathaway, the Secretary of the Department of the Interior. He has the ultimate administrative authority and responsibility under 43 U.S.C. §1457, 16 U.S.C. § 742b(c) and (d) and 16 U.S.C. § 460k for all functions engaged in by his Department which relate to wildlife conservation and the programs of the National Wildlife Refuge System. His predecessor, Rogers C. B. Morton, issued the Public Land Orders transferring the Kofa Game Range, the C. M. Russell National Wildlife Range, and Charles Sheldon Antelope Range to the Bureau of Land Management. Public Land Order 5492, March 21, 1975, 40 Fed. Reg. 14054; Public Land Order 5497, April 25, 1975, 40 Fed. Reg. 18997; Public Land Order 5498, April 25, 1975, 40 Fed. Reg. 18996. The Cabeza Prieta Game Range, now to be known as the Cabeza Prieta National Wildlife Refuge, will be under the jurisdiction of the Fish and Wildlife Service. Public Land Order 5493, March 21, 1975, 40 Fed. Reg. 14315. This means that, for the first time, wildlife refuges will not be entirely or partially under the administration of the Fish and Wildlife Service.

The Secretary of the Interior is prepared to sign an order which would implement the transfer of administrative functions, personnel, and management responsibilities for the Kofa, Sheldon and Russell Game Ranges from the Fish and Wildlife Services to the Bureau of Land Management.

3. Plaintiffs filed this suit on June 23, 1975, seeking a declaratory judgment, injunctive relief and mandamus to prevent the transfer of the Kofa Game Range, the C. M. Russell National Wildlife Range and the Charles Sheldon Antelope Range from joint administration of the Fish and Wildlife Service and the Bureau of Land Management. Plaintiffs simultaneously filed a motion for a temporary restraining order, motion for a preliminary injunction, and supporting papers. The complaint alleged that the Secretary's action violated the National Environmental Policy Act, 42 U.S.C. § 4321, *et seq.*, because (1) the transfer of these ranges was a major federal action significantly affecting the human environment which requires preparation of an environmental impact statement or at least an environmental assessment as to whether an environmental statement should be prepared; and (2) whether or not an environmental impact statement had to be prepared, adequate studies of the environmental effects and the alternatives had to be made prior to the transfer. The complaint further alleged that regardless whether NEPA has been complied with, the Secretary had no authority to transfer portions of the National Wildlife Refuge System entirely out of the jurisdiction of the Fish and Wildlife Service, which administers the System, to another agency. Plaintiffs' Motion for Preliminary Injunction is based only upon the two claims under NEPA.

4. On June 24, 1975, this Court issued a temporary restraining order prohibiting transfer of the ranges until the hearing on the motion for a preliminary injunction which was held on July 11, 1975. The parties have entered into consent orders extending the Temporary Restraining Order until July 28, 1975.

5. The entire National Wildlife Refuge System has always been administered in whole or in part by the Fish and Wildlife Service or its predecessors. All

portions of the System except for the Kofa, Cabeza Prieta, Sheldon and Russell Ranges are administered entirely by the Fish and Wildlife Service. From their establishment these four ranges were administered jointly by the predecessor agencies of the present Fish and Wildlife Service and the Bureau of Land Management. The Bureau of Land Management has controlled grazing, mining, and similar uses. The Fish and Wildlife Service has otherwise been responsible for the ranges, including for the care and preservation of wildlife.

6. The Department of the Interior has not prepared an environmental impact statement or an environmental assessment concerning the transfers of the three game ranges to the Bureau of Land Management.

7. The three ranges, Kofa, Sheldon, and Russell, cover a total area of 2,179,000 acres which is 7.5 per cent of the total National Wildlife Refuge System and 10 per cent of the total acreage devoted to big-game refuges.

8. The Bureau of Land Management and the Fish and Wildlife Services have traditionally had two different functions. The Bureau of Land Management has heretofore been concerned with the administration of public lands. It has administered these lands by encouraging multiple uses. It has particularly emphasized commercial uses such as grazing and mining which produce an economic return. In contrast, the Fish and Wildlife Service's primary responsibility both by law and in fact is to provide protection for wildlife and for wildlife habitat on the lands under its jurisdiction. The different purposes and responsibilities of the two agencies have been reflected in their activities with regard to the very three game ranges involved in this case. There have been constant conflicts between the two agencies concerning how to manage these ranges because of the different emphasis on grazing, on the one hand, and wildlife, on the other. For example, there have been conflicts concerning the availability of forage, the use of herbicides, the construction of trails, fences and waterholes, the reestablishment of buffalo and generally about the emphasis on livestock rather than wildlife. As a result of their different responsibilities, the staff of the Fish and Wildlife Service has more expertise in the protection of wildlife than that of the Bureau of Land Management.

9. The Bureau of Land Management proposes to manage the game ranges under the same policies and regulations as have previously existed under joint management, including giving priority to wildlife. All the remainder of the National Wildlife Refuge System is administered by the Service. Transfer to the Service would have allowed it to apply existing regulations and policies to the ranges. In contrast, the Bureau of Land Management is having to adopt the regulations and policies of the Service which are inconsistent with its traditional policies. It therefore appears that the Secretary of Interior perceives, at the least, a difference in emphasis under administration by the Bureau of Land Management rather than the Service.

10. The affidavit of Assistant Secretary of the Interior Kyl, submitted in support of defendant's opposition to the Motion for Preliminary Injunction, admits that the ranges were transferred to the Bureau of Land Management precisely because they were valuable for grazing and recreational use and so that the Bureau could administer them according to its multiple use policy. Another memorandum from the Arizona State Director of the Bureau argued that the Kofa Range, which at that time was proposed to be transferred to the Fish and Wildlife Service, should be transferred to the Bureau of Land Management rather than the Fish and Wildlife Service so that grazing and other commercial uses could be allowed rather than administering the ranges primarily for the protection of wildlife. As a result, the Kofa Range was transferred to the Bureau. In contrast, the Cabeza Prieta Range which contains little grazing or mining potential was transferred to the Fish and Wildlife Service.

11. While there is no evidence suggesting that the promise of defendant to give priority to wildlife in the operation of the ranges is not made in good faith, the adoption of identical policies and regulations by high officials of the Department of Interior cannot assure that administration will actually be the same in the field. The lack of adequate, trained personnel to protect wildlife will continue to exist. Moreover, the past philosophy and policies of the agency will almost surely affect the myriad of discretionary decisions which are made in the field. For example, field employees decide whether gates can be left open for livestock, whether new waterholes for livestock will be built, where new fences will be built and whether they will interfere with the movement of wildlife, whether the land can support livestock grazing and how much grazing will be permitted, what forage will be planted, and whether to clear the land. While

many of these decisions are individually small, they cumulatively have a substantial effect concerning the protection of wildlife.

12. Defendant states that an environmental impact statement will be prepared if important changes are made in the administration of the game ranges. However, many of the decisions which cumulatively will have a substantial effect on wildlife are individually far too insignificant to justify preparation of an environmental impact statement. Consequently, if an environmental impact statement is to be prepared on the environmental effects of the transfer, it must be done before transfer occurs.

13. These ranges consist in large part of land which is of wilderness character. Half of these ranges have been identified as suitable for inclusion in the wilderness system—520,600 acres of the Kofa Range, 155,388 acres on the Russell Range and 344,500 acres on the Sheldon Range. The President has submitted proposals to Congress regarding the Kofa and Russell ranges. These submissions were made without recommendations, which will be made only after completion of mineral surveys. A further submission regarding the Sheldon Range will be made at a later date. Thus, it is presently contemplated that the recommendations will be made after the Bureau of Land Management has been given sole jurisdiction over the ranges.

14. A wide difference in attitude regarding wilderness areas exists between the Bureau of Land Management and the Fish and Wildlife Service. The Service has strongly supported the inclusion of range areas of wildlife refuges under the Wilderness Act. The Bureau, in contrast, does not support wilderness classification because it prevents multiple-use of the land. The final recommendations on the present wilderness proposals and the proposal of future wilderness areas might depend upon which of the two agencies has jurisdiction.

15. Defendant emphasizes that the Bureau of Land Management manages large areas of land consisting of wildlife habitat. However, studies conducted by the Bureau itself show that the Bureau's management of these lands has not adequately protected wildlife and wildlife habitat. In fact, another judge of this Court has recently found that the Bureau has failed to protect the lands it already administers and especially has failed to protect wildlife using these lands. *Natural Resources Defense Council v. Morton*, 7 ERC 1299, 1305-6 (1974),

16. The transfer of the three game ranges to the sole jurisdiction of the Bureau of Land Management is highly controversial. The likely environmental effects of the transfer are also hugely controversial: Congressional leaders, national environmental organizations, and leading newspapers have all strongly criticized the transfer because of its likely effect on the environment.

Conclusions of Law

1. This Court has jurisdiction over the subject matter of the complaint and the parties hereto. 28 U.S.C. § 1331(a); 5 U.S.C. §§ 701-706; 28 U.S.C. § 1361.

2. The individual plaintiffs and plaintiff organizations have standing to bring this action since they allege that they or their members use the federal lands and that federal officials are taking actions which harm the environment on these lands.

3. Section 102(2)(C) of NEPA, 42 U.S.C. § 4332(2)(C) requires that all agencies prepare an environmental impact statement for "every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment * * *."

(a) The Secretary's decision to transfer such a substantial portion of the entire National Wildlife Refuge System to the sole jurisdiction of the Bureau of Land Management constitutes a major federal action.

(b) Since the transfer of these game ranges will, at the very least, potentially or arguably have a significant effect on the environment and because it is extremely controversial, the preparation of an environmental impact statement is required by Section 102(2)(C) of the NEPA.

(c) The Secretary's decision to transfer the game ranges without preparing an environmental impact statement violates Section 102(2)(C) of the National Environmental Protection Act.

4. Even if defendant were not required to prepare an environmental impact statement, he is required to prepare an environmental assessment as to whether an environmental impact statement is necessary. The regulations of the Department of the Interior, the Bureau of Land Management and Fish and Wildlife Service, which are binding upon defendant, require the preparation of environmental assessments concerning the environmental impacts of proposed actions

to determine whether an environmental impact statement is required. The defendant's failure to prepare an environmental assessment is contrary to his own regulations and therefore a violation of the law.

5. In the circumstances of this case the defendant's decision that an environmental impact statement or even an assessment is unnecessary must be regarded as arbitrary, capricious, an abuse of discretion, and not in accordance with law. Accordingly, the defendant should be enjoined from effecting the proposed transfer of the subject game ranges.

IT IS SO ORDERED.

WILLIAM B. BRYANT, *Judge*.

Dated : July 28, 1975.

Senator Moss. I will have the remaining witnesses come forward as a panel, Mr. Grandy of Friends of the Earth, who will be accompanied by Toby Cooper, and Mr. Jim Kowalsky, Friends of the Earth.

**STATEMENTS OF JOHN GRANDY, EXECUTIVE VICE PRESIDENT,
DEFENDERS OF WILDLIFE; ACCOMPANIED BY TOBY COOPER;
WILDLIFE PROGRAMS COORDINATOR; AND JIM KOWALSKY,
ALASKA FIELD REPRESENTATIVE, FRIENDS OF THE EARTH**

Mr. GRANDY. I am John Grandy, executive vice president, Defenders of Wildlife. We were asked by the Sierra Club to represent them as well.

Senator Moss. That is satisfactory. You may go ahead.

Mr. GRANDY. Thank you.

I appreciate the invitation and opportunity to present this statement on behalf of the Defenders of Wildlife, Sierra Club, and the New York Zoological Society.

Defenders of Wildlife is a nonprofit membership organization, publishing the bimonthly Defenders of Wildlife magazine.

Defenders of Wildlife has been interested in the regulations concerning national wildlife refuges and waterfowl regulations.

Mr. Cooper will summarize our numerous concerns over developments in and concerning the National Wildlife Refuge System.

However, I would at this point like to take the opportunity to dwell on the waterfowl regulations, how they are set, what they are doing to the waterfowl resources of this Nation and what actions may be appropriate to facilitate changes in the procedures.

To begin, the process by which waterfowl regulations are set is of necessity a complicated one. It is dependent on gathering data in the wintering grounds and breeding grounds of Canada, interpreting the data and arriving at a set of rules. More than that, waterfowl regulations are, or should be dependent on input from various sources, including the public.

I have attached a copy of appendix 8 from the recent environmental impact statement for the issuance of annual regulations permitting the sport hunting of migratory birds. This describes in detail the process by which the Fish and Wildlife Service currently sets regulations.

I have participated, or attempted to participate fully in this procedure in the past; and from my experience and from the experience of others, I would like to point out difficulties in the current system.

The process appears straightforward. Unfortunately, due to the personnel involved and time constraints, the public is precluded from making effective, timely and productive comment.

The outline of administrative actions notes that in January the Fish and Wildlife Service Migratory Bird Regulations Committee meets to consider proposed changes in basic regulations. At no point during the January meeting is the public invited, or allowed to attend nor are other interested governmental bodies invited or allowed.

It is during these January meetings that basic decisions are made concerning the proposed regulations. In fact, Fish and Wildlife Service, like many governmental bodies, becomes committed to major aspects of proposals by the time the proposed rules are published in the Federal Register. That argues strongly for allowing the public an active voice in the preliminary January meetings.

In February, changes recommended by the Migratory Bird Regulations Committee are forwarded to the States, the Flyway Councils, and the Waterfowl Advisory Committee for review and comment. It is not until March that proposed regulations are presented to the public for comment. We see no reason why the public should not be participating at the same time as the aforementioned bodies for the public at large has an equal or greater interest in waterfowl resources.

Procedures for the remainder of the months generally follow the pattern shown. There was, however, one exception: During the past August, Fish and Wildlife Service published a "Proposed Rule Making," specifying season lengths and so forth. The Service provided a 10-day public comment period on those proposals. As a practical matter, however, most final decisions had been made long since.

To bring the regulations development problems more closely into perspective, I would like to explain the circumstances surrounding the forthcoming snow goose season to be held this fall.

At the Atlantic Flyway Council meeting held on July 28 in Atlantic City, N.J., the proposal for a snow goose season was under discussion. This information was available to the people at the meeting, but clearly not to the general public. The snow goose season was the subject of an environmental assessment and negative declaration, but not an impact statement.

The "assessment" document was not made public or announced until early August. There was no indication that such a season on snow goose was forthcoming in the March Federal Register notice, other notices, or in other communications with the Fish and Wildlife Service until late July.

Severe criticisms were levelled at the proposed snow goose season once it became public. Some criticisms were based on the status of population. Some were based on the lack of opportunity for public comment. These criticisms were made at the directors advisory committee meeting in early August and again on the proposed rulemaking published in August. The comments were to no avail.

The fact is that the proposed snow goose regulations and season were thrust on the public without prior knowledge and without the widespread opportunity for the public to comment.

I submit that the Fish and Wildlife Service must make its procedures more responsive to the public and public interest if we are to have regulations, as we must, that reflect the broad public concern for the waterfowl of this continent.

Absence of effective public input into the regulations has led to one major development: the domination of the regulatory process and the waterfowl of this continent by hunting interests.

I have many examples in my prepared statement from which I will abstract, since I believe time is getting short.

The merganser population is declining. However, regulations have remained liberal and, in fact, the kill of mergansers is viewed as extra kill, a kill not counted in computing the total allowed daily kill. A species whose population numbers are declining is therefore being kill as a bonus.

The ringneck duck provides further evidence of the lack of concern which the Fish and Wildlife Service is apparently exhibiting for the welfare of the resource. In the past hunting season, the kill of ring-necks increased over the previous year by 47 percent. The winter inventory of population, taken after the hunting season, went down by 24 percent. Further, the population level, reflected by the 24 percent decrease, is 46 to 47 percent below the 10-year average. The explanation by the Fish and Wildlife Service was that the counting technique is faulty and the problem would be studied. The hunting, meanwhile, continues with little attention being paid to the welfare of the ringneck.

The most poignant example of this lack of concern is the black duck, a native of eastern United States and Canada. The black duck population has been declining steadily since the mid-1950's, and no one knows for sure what has caused the decline. We do know however that the kill of black duck amounts to 15 to 25 percent of population a year.

The Fish and Wildlife Service makes the argument that hunting cannot be proven to be the cause of the population decline and, therefore, we should continue hunting.

This situation caused one observer to comment: "the apparent Fish and Wildlife Service policy is Save the data, not the ducks." While that may be something of a false argument, the meaning is clearly consistent with the reaction of the Fish and Wildlife Service to declining populations of waterfowl.

Daily shooting hours scheduled in the current waterfowl regulations may provide the best example of irresponsibility in allowing the killing of waterfowl.

Shooting is allowed to begin one-half hour before sunrise and continue until sunset. At the same time, regulations require that hunters be able to identify many species before shooting. Regulations may require that out of the basic daily kill limit of four ducks, a hunter may kill no canvasbacks, no redheads, two black ducks, et cetera.

By allowing hunting before sunrise and until dusk, the Fish and Wildlife Service has created a situation where hunters cannot adequately identify, or often see what they are shooting. Various species, subjects of various special regulations, cannot be identified properly before shooting and other birds on which the season is closed may not be receiving the protection which they should have been assured.

In 1916, the government received, through treaty, the power and obligation to manage migratory birds. Through the years, the Department of the Interior's Fish and Wildlife Service, in cooperation with the individual states, has, to one degree or another, carried out that responsibility.

Specifically, the Fish and Wildlife Service has preserved millions of acres of wetland habitat, restored the wood duck, and also closed waterfowl seasons, most recently on the Aleutian Canada Goose, and canvasback and redhead ducks.

These actions have been highly commendable as Defenders of Wildlife and the broad conservation and environmental community have stated many times. I take this opportunity to commend the Fish and Wildlife Service again for their positive and beneficial actions toward waterfowl and waterfowl populations.

However, in Defenders view, it is not sufficient to give the welfare and well-being of wildlife part-time consideration. The Fish and Wildlife Service—the keeper in Public Trust of much of this Nation's wildlife—must, in every case, put the welfare of the wildlife first and foremost. Specifically, modernday wildlife management must be viewed as wildlife stewardship designed primarily to insure the welfare and well-being, in every case, of wildlife.

The Endangered Species Act is a wonderful law! However, wildlife stewardship must be designed to prevent the decline of populations to the point where animals are endangered. After all, the best time to insure the survival of wildlife—all wildlife—is when the wildlife is abundant, not when it is endangered.

I would like to have Mr. Cooper make a few remarks on the wildlife refuge system.

Senator Moss. Mr. Cooper.

Mr. COOPER. My statement first proceeds through a brief summary of legislation behind the Wildlife Refuge System. This gives us a basic outline of the Federal responsibility for the protection of wildlife species and wildlife habitats, including the 1956 and 1966 acts and various treaties.

Worth repeating is the interpretation of the legislative mandates published by the Bureau of Sport Fisheries and Wildlife in 50 CFR, where it states:

“All wildlife refuge areas are maintained for the fundamental purpose of developing a national program of wildlife conservation and rehabilitation. These areas are dedicated to wildlife found thereon, and for the restoration, preservation, development, and management of wildlife habitat; for the protection and preservation of endangered or rare wildlife and their associated habitat; and for the management of wildlife, in order to obtain maximum production for perpetuation, distribution, dispersal and utilization.”

Thus the goals of the Fish and Wildlife Service in administering the National Wildlife Refuge System are to protect the wildlife species and wildlife habitats, and to conserve, manage and enhance the survival and productivity of wildlife species.

We perceive a problem in the implementation of these goals. Most of our wildlife refuges have become public hunting areas and not refuges at all. There is no direct legislative mandate encouraging the Fish and Wildlife Service to pursue a policy of public hunting on virtually every refuge, and in this respect there is need for thorough investigation and questions to the Fish and Wildlife Service to encourage a greater priority for preservation within the FWS program.

Our position is that most refuges should be closed for public hunting except in those cases where hunting is necessary for a specific management program.

For example, the musk ox control program is necessary for proper management on Nunnak Island, Alaska. Refuges basically should promote the best interests of the wildlife, and that may or may not always include hunting.

Some refuges have never been officially opened to hunting, we believe, in accord with the regulations outlined in 50 CFR. The subcommittee may be interested in this issue and I would encourage you to ask questions of the Fish and Wildlife Service to find out which refuges have been opened officially as required by the regulations—involving notification in the Federal Register, and public comments—and which have not.

Another aspect of FWS hunting policy involves the treaty with Mexico signed in 1937. This treaty has a provision for the establishment of refuge zones in which taking of migratory birds is prohibited. This situation merits some investigation for the purpose of discovering to what extent that policy mandate has been followed.

Now, concerning the budget for the NWRs, there have already been excellent comments presented today on budget problems. I am not a Federal official, so I am not qualified to document specifically what problems they have had.

However, it is worthwhile to point out that the refuge system is severely constrained by the current budget. If the FWS receives the \$7 million increase in operating funds proposed for the 1977 budget request, operations on the refuges will be brought up to the budgetary levels of 1973. Since that year, nearly 3 million acres have been added to the refuge system, and responsibilities of the refuge managers have been expanded accordingly.

Budget problems for the refuge system have been intensified by the "program budget" approach. This has been covered by previous witnesses.

We certainly stand behind the remarks delivered by Mr. Givens and others to the effect that the "program budget" approach has fragmented the refuge program, and the result has been a weakening of the NWRs.

We would strongly support anything that the subcommittee could do to encourage the Fish and Wildlife Service to reorganize and return to a centralized line of authority for administration of the refuge system as a strong and directed program.

In order to meet their managerial responsibilities in the face of inadequate funding levels, refuge managers very often have adopted a strategy of reducing operations temporarily to get by and hope for better conditions in the future. The frequent term given to this approach is "mothballing." This results in deterioration of the resource and facilities. The management structures, dikes, small dams, and other facilities deteriorate to the point where the refuge is not functioning as a wildlife breeding area in accord with the original plans for the area.

Attached to this statement is a memorandum dated August 19, 1975, from the regional director of region 2 to the Washington office, FWS. The memorandum details the "mothballing" of five southwestern refuges by merely not filling positions as they are vacated, and requiring managers of adjacent refuges to fill in as best they can.

The region will save \$67,400. In the process, the resources will be badly compromised.

[The letter follows:]

UNITED STATES GOVERNMENT,
U.S. FISH AND WILDLIFE SERVICE,
Region 2, Albuquerque, N. Mex., August 19, 1975.

To: Director, USFWS, Washington, D.C. (AFW).

From: Regional director.

Subject: Fiscal year 1976 funding for refuge field stations.

In our April 11, 1975 summary memorandum on the Program Advices for FY 76 we emphasized that funds to operate our refuge field stations were grossly inadequate. We pointed out that there was a total cut in all programs of \$134,800 in base operating funds. This figure is now \$189,800 due to the subsequent withdrawal from Kofa. However, it was my understanding during our meeting in Washington, August 14 and 15, that \$55,000 will be restored to the Kofa.

In Exhibit B of this memorandum two options were proposed to partially correct this funding deficiency. We are now at the point time-wise where these options could not achieve the desired savings and in some situations would add to the costs due to severance pay. Also, these options were based upon the assumption that FY 77 would be another lean year for refuges.

In view of the Refuge Initiative and the Secretarial Issue Paper for FY 77, which promise hope for substantial funds increases, we believe that the best approach for FY 76 is to not dispose of any refuge area. We have considered a number of options to solve our inadequate refuge funding problem for FY 76 and believe the most logical one is a redistribution of funds available for refuge operations. Reductions are being made at specific refuges which will have the least impact on Service programs. Our strategy is to reduce operations temporarily at a few refuges in order to get by this year.

To solve a part of our problem we are taking the following actions on five low priority refuges that will yield a savings of \$67,400 for redistribution to higher priority uses at other refuges. Most of the funds involved are in the MB Program and the funds transfers are well within the Regional Director's authority.

OPTIMA—\$20,800 SAVINGS

We will postpone filling the vacant Refuge Manager position until July 1, 1976. This refuge, a one-man station, will be managed by Buffalo Lake personnel commencing August 18, 1975 when the current Refuge Manager leaves for his new assignment at Laguna Atascosa. The refuge office in Guymon, Oklahoma will be closed and all property temporarily transferred to Buffalo Lake.

Except for occasional visits by Buffalo Lake personnel, this refuge will be mothballed for the next 10½ months.

Little adverse impact on Service programs will probably result from these actions. This new refuge is undeveloped except for boundary fencing. Some illegal hunting and grazing may occur. Development of management plans will be delayed.

MULESHOE/GRULLA—\$19,900 SAVINGS

The Refuge Manager of these two refuges recently had open heart surgery. There is some indication that he may request disability retirement on or before January 1, 1976, and if so, this position will not be filled until July 1, 1976. Also, the vacant clerk position will not be filled in FY 76. The intermittent maintenance helper at this station will be employed half-time under the supervision of Buffalo Lake to protect Government property and do essential maintenance chores.

Public use of the refuge will be greatly curtailed by these actions. Only during hours when an employee is present can the refuge be open for public use. The impact on facilities (buildings, dikes, water control structures, etc.) and habitat hopefully will not be significant. But you don't leave an area unattended without taking the risk of suffering damage by fire, flood and other natural forces or destruction by vandals.

BUFFALO LAKE—\$7,000 SAVINGS

The recently vacated Assistant Refuge Manager position will not be filled in FY 76. Operations will be reduced to the bare essentials for the remainder of FY 76. The current staff of three permanent employees (Refuge Manager, clerk and maintenance worker) will be responsible for the management of four

"mothballed" refuges the rest of FY 76: Buffalo Lake, Optima, Muleshoe and Grulla.

Minimal maintenance of public use areas will be the major impact of these actions. The refuge will also forego needed maintenance of some buildings, roads, fences and other facilities.

HAGERMAN—\$19,700 SAVINGS

The Assistant Refuge Manager will be transferred before January 1, 1976 to a vacancy at Imperial and the Hagerman position left vacant until July 1, 1976. The maintenanceman will be placed on furlough without pay from January 1, 1976 to July 1, 1976. An intermittent maintenance worker will not be worked the last six months of FY 76. Operations will be cut to essentials the remainder of FY 76. This refuge will be operated on a standby basis for the last half of FY 76 by the Refuge Manager and clerk.

These actions will cause continued deterioration of buildings, roads, dikes, fences and other facilities. High public use, particularly for fishing, will continue but with inadequate enforcement patrol, violations will escalate. The four cooperative farmers and 24 grazing permittees will not be supervised as needed to insure compliance with permit conditions—this has been a problem even with existing staffing. Fertilizer will not be applied to refuge's share (116 acres) of cooperative farming land. No crops (150 acres) for wintering waterfowl will be planted by contract and waterfowl use the fall of 1976 will drop accordingly. Plans for a YCC camp will have to be dropped. The mallard banding operation will go down the tube. Needed signs will not be ordered from the National Sign Shop.

These actions will significantly reduce the funding level for these five refuges as compared to what was indicated in the Fiscal Year 76 Budget Justifications. Therefore, to comply with the House Subcommittee mandate, the appropriate congressional delegations and committees should be notified these refuges will be funded in FY 76 at the following reduced levels:

Optima	\$11, 800
Muleshoe/Grulla	16, 500
Buffalo Lake	50, 600
Hagerman	51, 900

The above is presented for your information in the event that inquiries are made to your office regarding the low level of operations at the five affected refuges.

W. O. NELSON, JR.

Mr. COOPER. I will comment on personnel ceilings as they are directly related to the refuge problem. Ceilings in the last few years have held the service to 843 permanent, full-time personnel. The staffing in terms of per acre coverage is decreasing dramatically.

We estimate that the refuge system probably needs 1,000 permanent, full-time employees nationwide. It would be worthwhile for the subcommittee to pursue that ceiling with the Fish and Wildlife Service.

The backlog for rehabilitation of facilities is estimated at \$380 million, and it is still growing.

During the next 6 years, the current plans will meet only \$27 million of that backlog. There is no simple answer to these budget problems. But, a unified program administration and the budget request which reflect the best professional judgments for a proper job of planning and managing the resources would improve the situation.

The next point in my statement is an endorsement for the concept of a National Wildlife Refuge System Organic Act. We support that concept and urge its implementation. However, we wish to see the refuge program maintained under the umbrella of the Fish and Wildlife Service. We think the NWRS needs to be alined with the parent agency to keep it going and supported properly. Further, we would

like to see a Tulelk refuge. We think it is essential that the habitat for this magnificent species be protected under the wildlife refuge system.

The Alaska issues were well detailed by Mr. Wright. We stand fully behind the concepts that he expressed.

We are concerned that Congress will wait too long in moving ahead with Alaska D-2 withdrawal proposals. We think we should move ahead progressively.

That concludes our statement.

Senator Moss. Thank you very much, Mr. Cooper and Mr. Grandy.

We will hear from Mr. Kowalsky.

If I have any questions, I will ask any of the panel that are here.

Mr. KOWALSKY. I am Jim Kowalsky, the Alaska field representative for Friends of the Earth, a national conservation organization concerned with the rational use and restoration of the Earth. I work in Alaska and my office and home are located in Fairbanks, Alaska.

Friends of the Earth appreciates this opportunity to present its views on the Nation's wildlife refuge system.

I would like to make a few generalizations about the system generally, and then I shall make several comments about the national wildlife refuges located within the State of Alaska.

We are very interested in our wildlife refuges and we strongly support the Nation's refuge system. In general—and within Alaska in particular—we believe that the key to the survival of our wildlife depends upon the strong protection of habitat, and we feel that this responsibility lies with the U.S. Fish and Wildlife Service (FWS).

We are especially dismayed, therefore, to witness the lack of leadership within the FWS and within the Department of the Interior as evident in the proposed transfer of refuge management responsibilities to the U.S. Bureau of Land Management (BLM) on several units of the refuges.

Mr. Wright covered that point with relation to a possible takeover by the Bureau of Land Management. We concur with his remarks.

This tendency, as he pointed out, is further evident within the administration's proposals authorized by section 17(d)(2) of the Alaska Native Claims Settlement Act of 1971 to establish new units of the National Wildlife Refuge System in Alaska.

The administration's bill, S. 1687, calls for the establishment of the Noatak National Arctic Range and the Iliamna National Resource Range. In a memorandum of agreement, the BLM would have lead management authority in the proposed Noatak refuge, for example.

We maintain that the BLM does not have the expertise to properly manage existing or proposed refuges primarily for wildlife values and we call upon the Department of the Interior and the FWS to exert needed leadership to keep our Nation's refuge system under the management of the FWS.

I should point out here that the citizens' substitute bill, S. 1688, would create new refuges in Alaska and would place management authority with the FWS as would two substitute bills by Representative Dingell, H.R. 1522 and H.R. 1520.

With respect to the refuge system in Alaska, I would like to discuss three units of the refuge system: the Kenai National Moose Range, the Clarence Rhode National Wildlife Range, and the Arctic National Wildlife Range.

Under the provisions of the Alaska Native Claims Settlement Act, the Cook Inlet Regional Native Corp. had lands identified for selection by the region to the west of Cook Inlet within the Lake Clark region. Because these lands are generally far from the main population base of the people of the Cook Inlet region and would be of marginal or no economic value to them, the Cook Inlet Regional Corp. now seeks to have the Department of the Interior allow it to select lands in closer proximity to its villages and within the Kenai National Moose Range.

Due to the relatively large population base of the Cook Inlet region which includes the Anchorage area, and because of the land selections made by the State of Alaska throughout this south central region of Alaska, the Cook Inlet Natives feel that they are in a difficult situation without much, if any, suitable unreserved public lands from which to select, and therefore have asked to select from portions of the Kenai National Moose Range.

To further complicate the matter, several proposals have been made to create a Lake Clark National Park in this same region which was assigned to the Cook Inlet Regional Corp. for selection purposes, but which the region does not want.

Because the State of Alaska also has an interest in this area, all three entities—the State of Alaska, the Cook Inlet Region Corp., and the Department of Interior—are attempting to negotiate a three-way arrangement to settle these conflicts which include the Kenai National Moose Range.

I call that to the subcommittee's attention.

Mr. Chairman, I would also call your attention to the fact that a recommendation to place the Kenai National Moose Range into the National Wilderness Preservation System has gone forth from the Department of the Interior but has gathered dust here in Washington for several years.

FOE supports that proposal and would hope to see action taken soon. This refuge also is rather heavily used by the residents of the Anchorage area for recreational purposes.

Turning to the Clarence Rhode National Wildlife Range on the Yukon-Kuskokwim Delta, I wish to call your attention to the fact that a joint management agreement has been reached by the FWS, the Calista Regional Native Corp., and the Association of Village Council Presidents which is a 52-member village association of this predominantly Yupik Eskimo region.

Generally, the agreement calls for the participation of the Native people in management decisions for the following wildlife refuges: Clarence Rhode, Cape Newenham, Nunivak, and Hazen Bay. The subsistence needs of the native people of this region have generally long been ignored in these decisions, and we are pleased to see the Department of the Interior enter into this arrangement.

I would like the committee to follow through to see how they are adhering to that agreement.

Mr. Chairman, the food and materials-gathering needs of these and other Native peoples in Alaska have resulted in subsistence activities around which the Native culture has evolved.

To further illustrate the problems in preventing the Native culture from being consumed by the white culture which has become dominant

in Alaska and how the wildlife refuge system relates to the problem and the possible solutions, I offer for the use of the committee five copies of this exhibit "Does One Way of Life Have to Die So Another Can Live?"

This is a study of the subsistence issues of and by people of this region, which has been published with assistance from the Friends of the Earth Foundation and the State of Alaska.

It is an eloquent statement of the Yupik people of this region which points out the need for these people to continue subsistence activities and to consider them in a broader context than one purely economic.

A copy of the joint management agreement I have referred to is found on pages 29 and 30 of this study. FOE is pleased to help present the rural native point of view as regards the use of the fish and wildlife resources of this region which is of a genuine, unique social and cultural concern.

My last remarks concern the Arctic National Wildlife Range, the Nation's most remote and wildest refuge in Alaska's arctic. Although a draft wilderness proposal for this refuge has come forth from the Department of the Interior and the draft of an environmental impact statement for this proposal has been written, Interior had indefinitely postponed hearings on this proposal.

I should add that also there are proposed extensions that have been offered under proposals of the administration and in other bills under section 17(a)(2) of the Alaska Native Claims and Settlement Act.

Meanwhile, Alaskan Arctic Gas, part of a Canadian gas pipeline consortium, has proposed to build a 48-inch gas pipeline across the northern coastal plain of this refuge. A draft environmental impact statement has been prepared for this proposal and I recommend that it be thoroughly examined to learn of the impacts which this proposal would have upon this refuge.

Among other things, this proposal would place a pipeline through the critical calving grounds of the Pocupine caribou herd, the Nation's second largest herd of wild free-roaming animals. Although construction is scheduled for winter, maintenance and any repairs of the gas pipeline could interfere substantially with the spring calving activity of this refuge.

The refuge was established to protect habitat in this delicate and very easily disturbed portion of the arctic, and we maintain that an invasion of this refuge by any pipeline construction will establish a precedent for further future developments including other pipelines as well as possible future oil and gas development.

We urge that the committee carefully assess this proposal and its predicted short- and long-range impacts upon the Arctic National Wildlife Range, and that it also give full assessment of the competing proposal to construct an all-Alaska pipeline as proposed by El Paso Alaska Co.

This proposal would avoid the refuge, utilize an existing corridor, ship liquefied natural gas to our west coast, and place it in an existing network of pipelines already built which could also deliver gas to the Midwestern and Eastern States of our Nation.

Another proposal to be fully considered would be one which utilizes the existing trans-Alaska corridor and the Alcan Highway.

With permission of the Chair, I would like to submit copies of a memo outlining alternative corridors prepared by the Fairbanks Environmental Center at a later date.

Senator Moss. You may.

Mr. KOWALSKY. We strongly reaffirm that the Arctic National Wildlife Range should remain as it was intended, the only remaining example of undisturbed arctic coastal plain and mountain environment.

Thank you for the opportunity to present these views.

Senator Moss. Are these realignment options on the pipeline—have they been under consideration, and are they greatly more in cost than going across the plain?

Mr. KOWALSKY. The Department of Interior has prepared an analysis of the Arctic Gas proposal and the El Paso proposal.

I believe that Interior's conclusion was that there is not much difference between the two proposals in total cost. I think, however, that each applicant would probably disagree with that.

I think the truth lies somewhere in between all of this. I don't think we still know what it would be in terms of actual cost.

I call your attention to the fact that the Arctic Gas proposal calls for 6,000 miles of new pipeline construction. The El Paso proposal calls for 1,000 miles of new pipeline construction. The rest of the system would utilize tankers and existing pipelines already operating in the United States.

Senator Moss. The El Paso proposal would take the gas to the south coast of Alaska and liquefy it there, is that correct?

Mr. KOWALSKY. Yes; and it would be shipped to southern California and joined to an existing pipeline network where it would come back to the East and to the middle part of the United States.

Senator Moss. Does the document discuss the safety problems of liquefying and transporting of gas?

Mr. KOWALSKY. What document are you referring to?

Senator Moss. The one you will submit later.

Mr. KOWALSKY. No. This is a memo outlining alternative routes. We have had a lot of activity on Capitol Hill in presenting the Arctic Gas point of view. A few Members of Congress, to my knowledge, really realize fully that there is another proposal. That calls their attention to that and describes what some of the alternative routings may be.

Senator Moss. This would also discuss the distribution area back into the United States.

Supposedly, one of the gas short areas is the upper Midwest. How would that be served by the El Paso alternative as against the arctic?

Mr. KOWALSKY. The memo does not describe this, but this is such information in the filing of El Paso to the FPC. But as I understand it, there is an existing network of pipelines that comes north from the Middle South, and negotiations would have to be finalized to reverse the flow in those pipes to absorb the Alaska gas.

I also understand that the current pipeline system I am referring to that comes north to the midsection of the United States is using gas from the Texas gasfields which are now being depleted.

So there would be an opportunity to place new gas into an existing system rather than build some new pipelines through Canada and into the United States.

Senator Moss. Mr. Grandy, you mention at the present time there is not enough public input into the Department's waterfowl hunting regulations. What steps can be taken to insure greater public input?

Mr. GRANDY. I think the public at a very minimum should be able to participate in January meetings in which basic decisions are made.

They should have that data available to them and participate fully through the Register or through the public hearing process.

I think as regulations are developed throughout the course of a year, from January through August, the public should be fully informed. The public shouldn't have to depend on attendance at obscure meetings such as the Atlantic Flyway Council to obtain information that should be made public as it is developed.

Senator Moss. To what degree does the lack of good census data in the breeding grounds and wintering grounds of waterfowl contribute to improperly set seasons?

Mr. GRANDY. I think it contributes relatively little. The main contributing factor is a philosophical one.

The Fish and Wildlife Service as a practical matter—and I worked for them for some time—knows that their census is bad. They know they can't adequately estimate waterfowl populations.

The question then is, who gets the benefit of the doubt when you know your data is bad? Do you set limits and season in such a way that if you are wrong, you will do harm to the resources, or do you set regulations in such a way if you are wrong you do no harm at all?

I think we have seen this harm occur in the past, time and time again, and most recently with the Atlantic brant and black duck.

If there were a change in the philosophical approach of the Fish and Wildlife Service, the lack of adequate census data wouldn't be nearly such a problem.

Senator Moss. Mr. Cooper, you mention that too much emphasis has been placed on consumptive use of resources such as waterfowl hunting.

The National Wildlife Refuge Administration does permit up to 40 percent of an area which has been set aside as a sanctuary for migratory birds to be used for hunting.

Do you feel the 40-percent figure is too high? What figure would you suggest, if so?

Mr. COOPER. I could not suggest a percentage without studying the matter in more detail.

My point was not that the emphasis on hunting is not provided for by the legislation. It is that the degree of emphasis has been set much too high. Perhaps we could look toward setting aside more areas within the refuge system totally as preserves, in recognition of certain outstanding features of habitat in those areas.

In this way we could increase the emphasis on preservation and decrease the emphasis on consumption.

Senator Moss. Aren't some of them completely closed now to any kind of hunting?

Mr. COOPER. Very few that I know of; no more than 40 percent of the refuge system.

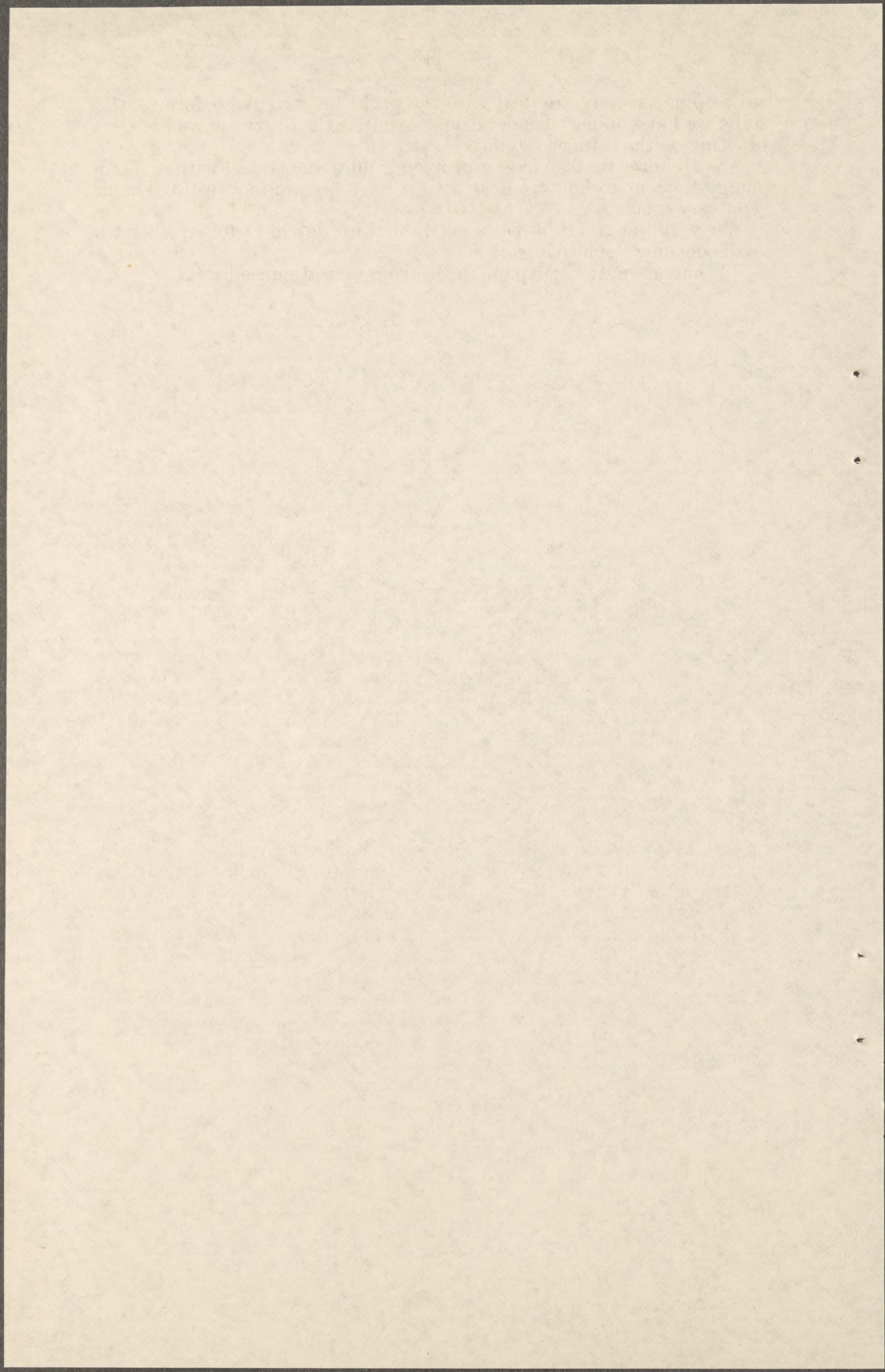
Senator Moss. Well, I do thank all of you gentlemen for your testimony and your appearances here today. We are pleased that you came

to help us as we try to deal with the problems we have before us, the bills we have under consideration as well as the overview we are conducting on the refuge system.

We all agree that we have a problem, and we must deal with it. Your suggestions as to how we deal with it have been most helpful. Thank you very much.

We will now stand in recess until the third day of October, when we will continue the hearings.

[Whereupon, at 12:55 p.m., the hearing was adjourned.]



NATIONAL WILDLIFE REFUGE SYSTEM

FRIDAY, OCTOBER 3, 1975

U.S. SENATE,
COMMITTEE ON COMMERCE,
SUBCOMMITTEE ON THE ENVIRONMENT,
Washington, D.C.

The subcommittee met at 10 a.m. in room 5110 of the Dirksen Senate Office Building, Hon. Frank E. Moss presiding.

OPENING STATEMENT BY SENATOR MOSS

Senator Moss. The hearing will come to order. I apologize for being late in arriving. There are just more things to be done this morning than there are people around to get them done and I have been unable to get free until now.

It may be necessary to interrupt the hearing for a few minutes later in the morning. I'm sorry about that, but this is the way things work around this place.

Today, the Subcommittee on the Environment will continue its oversight hearings on the administration of the National Wildlife Refuge System by the U.S. Fish and Wildlife Service of the Department of the Interior.

Last week we heard testimony from representatives of several conservation groups, as well as from former employees of the refuge system. Without exception, these individuals voiced grave concern about problems which currently face the system and which threaten its future.

This morning we will take a look at the effect these problems are having on the day-to-day operation of the refuge system, particularly in terms of facility maintenance and rehabilitation, public use, and conservation of wildlife resources. We will also be taking a closer look at the program management system, which received much criticism during our last day of hearings, and at the new area office organizational concept that the Service is proposing to institute nationwide.

Perhaps the most important task we have before us today is to attempt to determine exactly what role the National Wildlife Refuge System should play in the appreciation and enjoyment of wildlife by our Nation's people. If this role is to be a major one, then it is clear that the vastly inadequate level of support that the system is presently receiving must be increased substantially.

If we accomplish nothing else here today, hopefully the subcommittee will receive from the Fish and Wildlife Service assurances of the importance of the refuge system in its overall program.

Our first witness this morning will be Mr. Lynn A. Greenwalt, who is the Director of the Fish and Wildlife Service. After hearing

from him, we will receive testimony from Ms. Cynthia Wilson, who is the Washington representative of the National Audubon Society.

So we turn now to Mr. Greenwalt, and ask you, sir, if you will proceed and identify the gentlemen who accompany you there at the table.

STATEMENT OF LYNN A. GREENWALT, DIRECTOR, U.S. FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR; ACCOMPANIED BY HARVEY WILLOUGHBY, ACTING REGIONAL DIRECTOR, DENVER, COLO.; AND JAMES W. PULLIAM, JR., ACTING DEPUTY ASSOCIATE DIRECTOR

Mr. GREENWALT. Thank you very much, Mr. Chairman. It is a pleasure for me to introduce to you this morning, to my left, your right, Mr. James W. Pulliam, who is the Acting Deputy Associate Director of the Fish and Wildlife Service in an area responsible for the management of the National Wildlife Refuge System. On my right, your left, is Mr. Harvey Willoughby who is acting regional director of the Service's regional headquarters in Denver, Colo.

Mr. Chairman, I appreciate this opportunity to discuss with you the administration and operation of the National Wildlife Refuge System in the Fish and Wildlife Service. This is an operation in which I take strong personal and professional interest and pride. It is a commitment for me that goes back to long before my appointment as Director of the Fish and Wildlife Service.

Most of my professional life has been devoted to the management of the National Wildlife Refuge System. My appreciation of the value and significance of these lands for wildlife and the American people actually developed much earlier as part of growing up on national wildlife refuges throughout the country.

Mr. Chairman, with your permission following this presentation on the refuge system I will briefly address amendments to the Endangered Species Act of 1973 and extension of the Wetlands Loan Act as contained in H.R. 5608.

NATIONAL WILDLIFE REFUGE SYSTEM

The National Wildlife Refuge System is a widespread network of Federal lands administered by the U.S. Fish and Wildlife Service of the Department of the Interior. As of June 30, 1975, the system included 379 national wildlife refuges located in 49 of the 50 States, the Commonwealth of Puerto Rico, American Samoa, and the trust territories. In addition, waterfowl production areas exist in 127 counties and total 1.4 million acres in 6 States—North Dakota, South Dakota, Nebraska, Minnesota, Montana, and Wisconsin.

Altogether the system encompasses almost 34 million acres of land and water—an area larger than the States of Ohio, Delaware, and Rhode Island combined. Refuges extend from the Arctic Ocean south to the mid-Pacific, east to the Caribbean and north to the coast of Maine. There are one or more national wildlife refuges in every one of the 17 major life zones of North America.

Like a giant series of stepping stones, the Aleutian Islands extend some 1,100 miles westward into the North Pacific Ocean to within

600 miles of the Asian mainland. This chain of over 200 fog enshrouded volcanic islands, rich in fish and wildlife resources, was set aside as a national wildlife refuge by Executive order in 1913.

In the subtropics eight islands, shoals, and reefs totaling some 304,000 acres of the northwestern Hawaiian Islands Archipelago make up the Hawaiian Islands National Wildlife Refuge. About 95 percent of the native Hawaiian plants and animals occur nowhere else. A surprisingly varied native flora has developed from a mere handful of plant families. The islands' diversity of native land birds developed from only five families. Isolation has created this unique web of life.

Many of the refuges in the system have a similar diversity and abundance of flora and fauna; many have similar majestic scenic beauty, and many are isolated. Such isolation is desirable from an environmental point of view, but it is also a handicap. Only a very few people are able to enjoy the magnificent vistas or observe and study the abundance of plant and animal life.

On the other hand many of the areas set aside for refuge purposes have required extensive wildlife management, wetlands management, forestry management, agricultural development, and soil conservation. Man has disrupted the balances of nature and these refuges must be intensively managed to achieve various wildlife and habitat objectives.

Where accessible, the land and wildlife resources within the refuge system are used for research for the benefit of the resource and for improved understanding of man in his environment. Where accessible, outdoor recreation such as hunting, fishing, and nature study are major efforts and account for millions of hours of public enjoyment each year. This is particularly true on refuges such as Great Swamp in New Jersey, Parker River, Mass.; and Horicon, Wis., all near urban population concentrations.

National wildlife refuges had their beginning in 1903 when President Theodore Roosevelt designated Pelican Island, Fla., as a refuge to protect nesting pelicans, herons, and egrets from plume hunters. Most early units of the system were small island sanctuaries for colonial nesting birds or expansive ranges for protection of certain big game animals then in need of intensive management.

The first refuge specifically authorized by Congress was the Wichita Mountains Wildlife Refuge in Oklahoma, designated in 1905. Other big game areas followed, but it was not until 1924 that the first waterfowl unit was authorized and funded as the Upper Mississippi River Wild Life and Fish Refuge in the states of Minnesota, Wisconsin, Iowa, and Illinois.

During the following decade a great expansion of the refuge system occurred. This growth was precipitated by the devastating drought of the mid-1930's when the entire continental waterfowl population was threatened and attention was focused on the need to preserve rapidly disappearing waterfowl habitat.

In 1929 the Migratory Bird Conservation Act provided authority and responsibility to purchase lands for perpetuation of the international migratory bird resource. Shortage of funds limited the expansion of the system until the dust-bowl days of the 1930's when

emergency drought funds and leadership by men like J. N. "Ding" Darling and J. Clark Salyer, resulted in the establishment of many of our most important waterfowl refuges in the upper Midwest and in the Great Plains States.

These emergency funds were augmented by the Migratory Bird Hunting Stamp Act of 1934 which required duck hunters to purchase a "duck stamp." Since 1958 the income from these stamps has been used entirely for the acquisition of migratory waterfowl habitat.

In 1956 the Fish and Wildlife Act authorized the acquisition of refuge land for all kinds of wildlife. The wide-spread drainage in the prairie pothole region in the 1950's resulted in the Wetlands Loan Act of 1961 which provide for accelerated acquisition of migratory waterfowl habitat. The Service has used this congressional advance and the proceeds from migratory bird hunting stamps to acquire in fee or easement some 1.4 million acres of waterfowl habitat in the prairie pothole country of the upper Midwest.

More recent acts have granted authority to establish and manage a national network of lands and waters to meet the needs of wildlife for the benefit of people. The Refuge Recreation Act of 1962 provided policy and administrative guidelines for recreation. The Wilderness Act of 1964 required the Secretary of the Interior to review every roadless area of 5,000 acres or more an devery roadless island on refuges for suitability as wilderness.

Congress has to date formally designated 36 wilderness areas which encompass 575,620 acres on 41 national wildlife refuges; another 63 recommendations are before the Congress for consideration. The National Wildlife Refuge System Administration Act of 1966 gave official designation to national wildlife refuges as a system. The Land and Water Conservation Fund Act of 1965 and the Endangered Species Act of 1973 provided funding and authority to establish refuges for threatened and endangered species.

The Alaska Native Claims Settlement Act of 1971 and the Marine Mammal Protection Act of 1972 are recent acts that will play major roles in the growth and accomplishments of the system in the next few years. Under the Alaska Native Claims Settlement Act alone the system is being considered for expansion by 31.6 million acres—almost doubling the acreage presently within the system.

Until recent time the national wildlife refuge system received strong management from Fish and Wildlife Service headquarters in Washington, D.C. Wildlife refuges, like other organizational divisions of the Service, appeared as a line item in the President's budget. In seeking to develop means for becoming more responsive to the changing Federal role in fish and wildlife management and environmental matters, the Service implemented a program management approach and decentralized organization in the 1970's.

These changes were aimed at aligning policy, funds and manpower within environmental and wildlife resource goals, and placing the authority and responsibility needed for responsive action at regional and area office or field levels of the organization.

Program management draws upon the various divisions in meeting its goals. For example, achievement of endangered species' goals requires input from law enforcement, fish hatcheries, wildlife refuges, and research.

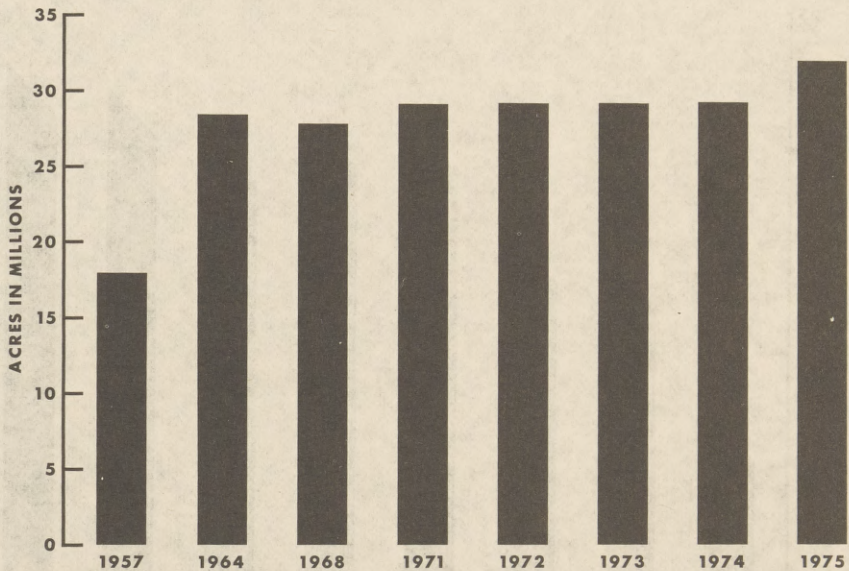
I believe the benefits of the program management system lie in the ability to tie Service goals and priorities to operations in such a way that performance can be matched against objectives to evaluate our accomplishments in behalf of environmental and fish and wildlife resource needs. In addition, the use of area offices increases the Service's decisionmaking ability at the field level, providing for the most effective and efficient use of funds and manpower where it is needed to get the job done.

Mr. Chairman, at this point, I think the charts to my left are germane to my discussion, and I will refer to them as I proceed with the testimony.

The first chart refers to the acres and management units of the Fish and Wildlife Service and the part it plays in the national wildlife refuge system. During the period from 1957 through 1975, acreage increased from 18 million to 32,215,000. Refuge units increased from 270 to 368; the wetlands management areas now total 1.4 million acres.

[The chart follows:]

ACRES NATIONAL WILDLIFE REFUGE SYSTEM



New responsibilities, functions, and activities from a variety of sources have placed new, high demands upon the Fish and Wildlife Service and the Refuge System in recent years. These include the National Environmental Policy Act, the Wilderness Act, the Alaska

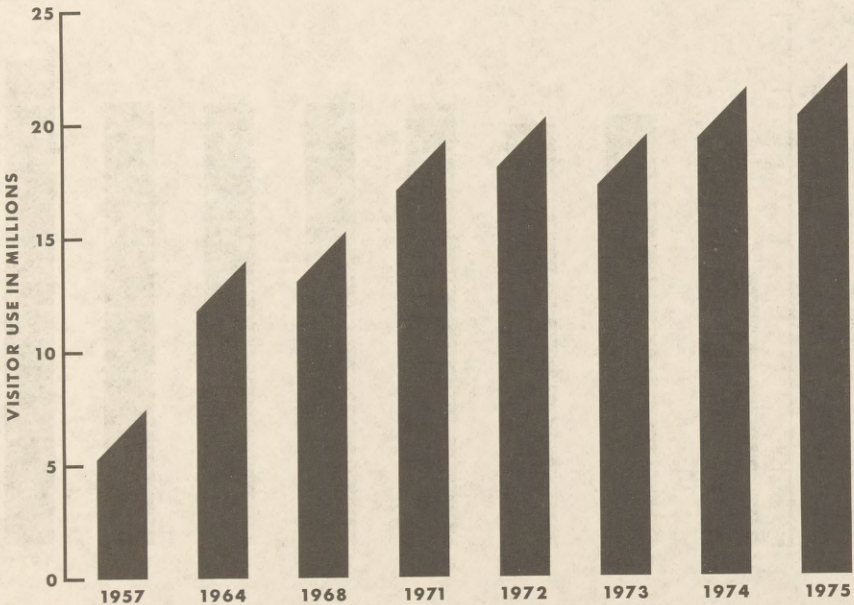
Native Claims Settlement Act, the Endangered Species Act of 1973, and the Marine Mammal Protection Act.

Chart 2 illustrates the fact that during the 1950's and 1960's public demand for outdoor recreation rapidly accelerated nationwide. To help accommodate this demand and respond to changing public attitude, refuges—formerly viewed as inviolate sanctuaries—were opened for selected recreational activities. Auto tour routes and nature trails were established; hunting programs were expanded, and a few visitor facilities were developed.

Visits to National Wildlife Refuges have tripled during the past 20 years, reaching about 23 million visits in 1975. Funds and manpower have not kept pace with the increase in visitor use. Refuge law enforcement efforts have been unable to keep pace with needs to control and protect visitors. Public use facilities, such as roads, signs, boat launch ramps, and parking areas have deteriorated and some information leaflets have become outdated. In some cases these factors have necessitated curtailment of public use.

[The chart follows:]

VISITOR USE NATIONAL WILDLIFE REFUGE SYSTEM

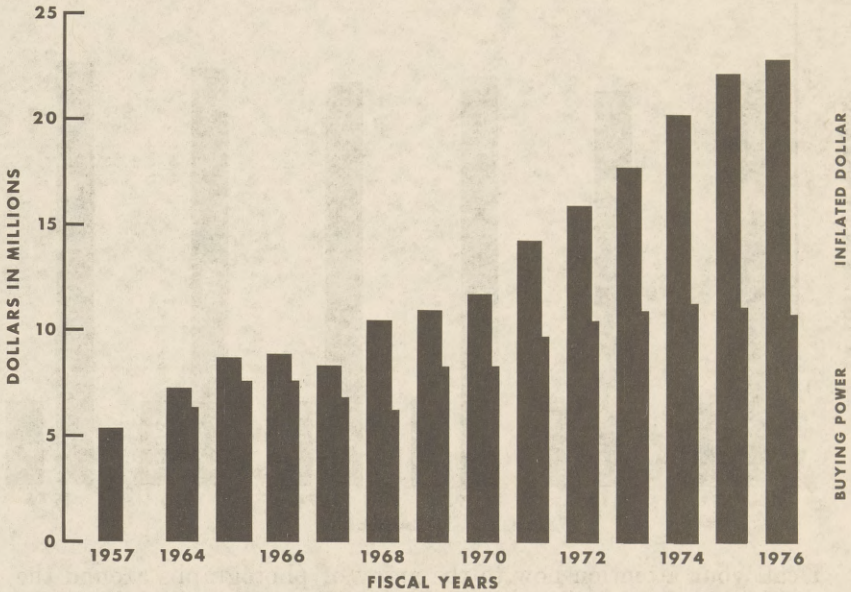


During the past two decades total dollars allocated to refuge field operations have increased from nearly \$5.4 million in 1957 to nearly

\$23 million in 1976. However, the same period has seen substantial increases in responsibilities and public demands, plus a reduction in the buying power of the dollar.

[The chart follows:]

**REFUGE
FIELD STATION FUNDING
RESOURCE MANAGEMENT APPROPRIATION**



Increased functions under the Endangered Species Act of 1973, enactment of the Marine Mammal Protection Act of 1972, the Service's biological services program, the National Environmental Policy Act, and other responsibilities have necessitated our reassessment of funding and manpower priorities.

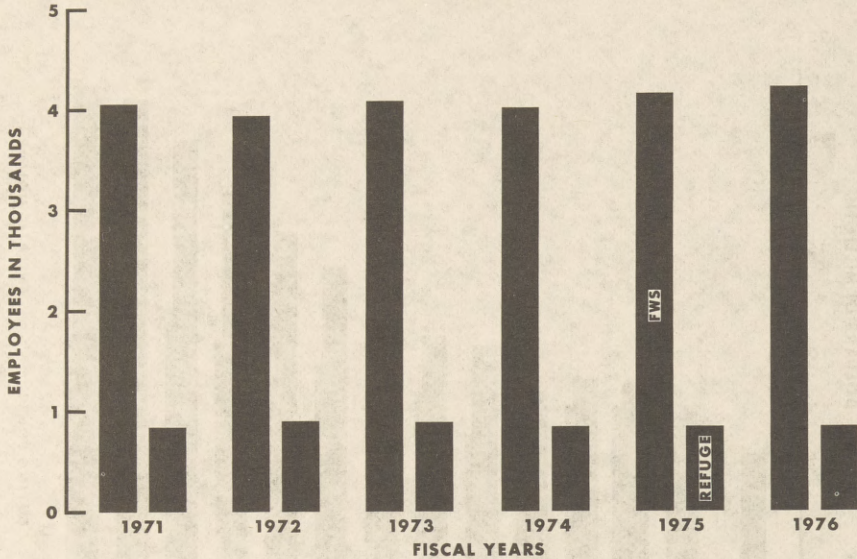
For the past several years stringent limits have been placed on the number of permanent employees the Fish and Wildlife Service is authorized to employ. New responsibilities have forced the Service to use its personnel ceilings in support of many of those programs mentioned above. The result is that many field activities—including refuges—have borne the brunt of the change.

Current field allocations to refuge and wetland management total 843 permanent full-time personnel. Staffing has actually decreased by 6 percent in the last 3 years, while the number of field stations has increased by 10 percent.

As a result wildlife surveys have been curtailed; some habitat improvement work has remained undone; reports needed by higher levels of management for response to Service, departmental and congressional needs often have been late or incomplete. There is less on-the-ground supervision of employees, contractors and refuge permittees.

[The chart follows:]

PERMANENT FULL-TIME EMPLOYEES IN THE FWS AND ON REFUGES



I call your attention now to the array of photographs around the room. Many of the facilities built during the expansion of the 1930's reached their life expectancy during the 1960's and have deteriorated and become outmoded. At the same time enactment of amendments to the Migratory Bird Conservation Act provided the Service the opportunity to expand its acquisition of wetlands through use of the advance funding authority provision of the act.

Given the critical need to preserve wetland habitat, a higher priority was placed on acquisition than on facility rehabilitation or reconstruction. The backlog of rehabilitation needs within the refuge system now stands at \$83 million. In attempting to reduce this backlog, however, the refuge system competes with all other high priority Service, departmental and other Federal programs within the total budget ceilings established each fiscal year by the President and the Congress.

For almost a year, we in the Service, with the help of the Department's budget officials, have been examining the refuge funding and manpower problem in relation to all the programs of the Service. We are presently looking toward the fiscal year 1977 budget—at the departmental level—to support a continuing program of refuge funding and personnel that will help all of us realize the potential of this diverse system of lands and resources that is the National Wildlife Refuge System.

It must be pointed out, however, that the management and administration of the National Wildlife Refuge System is something that cannot be undertaken without consideration of all the other things the Fish and Wildlife Service does and must do.

The Service discharges a complex array of responsibilities, with which the committee is familiar. It is imperative that all of our programs be carefully assessed and the priorities among them—or their combination—be carefully weighed. This has resulted and will continue to result in the need for conscious decisions that may well affect the funding and manpower support applied to various activities of the Service.

In making these decisions in the face of limitations in funding and manpower which condition how much of anything the Service can do, I am responsible for identifying and emphasizing those activities that result in the greatest benefit to the fish and wildlife resources of the country. Such decisions may very well determine that any number of Service activities may not be fully funded, or that emphasis may have to be shifted from one to another for various reasons. This has happened to the National Wildlife Refuge System in the past, and it could, of course, happen to it and other functional programs in the future.

These decisions—insofar as I make them—will always be based on my continuing concern that it is the responsibility of this Service to employ its funds and manpower to the end that the living natural resources of the United States are served in the most effective way possible.

Attached to my statement you will find additional background data on establishment and administration of the refuge system. In addition, a written response has been provided to the questions posed in your letter to the Acting Secretary of the Interior announcing these hearings.

Senator Moss. This will go at the conclusion of the record.¹

ENDANGERED SPECIES ACT AMENDMENTS

Mr. GREENWALT. Thank you, sir.

Now, Mr. Chairman, with regard to the Endangered Species Act of 1973, as you are well aware, progress in implementing the act has not been without problems. Some of our problems have been legislative, requiring either clarification of existing provisions of the act or specific amendments thereto. Some of our problems have been operational due to a lack of manpower and funding; some of our problems have resulted from the nature of the human animal himself.

Many people view the 1973 Act as an impediment to their business, agency goals, traditional rights, or their personal freedoms. To some we are not doing enough to protect or restore species, to others we are doing too much. I am distressed by this situation. We are dealing with a law that is extremely complex, far reaching and forceful. As such, it clearly must be implemented and used carefully and judiciously.

Those who have said that we are avoiding discharging our responsibilities have expected too much too quickly. On the other hand, there

¹ See p. 216.

are those who view our implementation of the act as a threat to their livelihood. In some cases it is; it should be.

We fully support the intent of the act to reduce the demand for certain animals that have been illegally overharvested, or which through the loss of habitat or for other reasons have been reduced to a level where their continued existence is in jeopardy.

However, I sympathize with those who were engaged in legitimate commerce prior to enactment of the 1973 act and who were as of December 28, 1973, put out of business or in violation by continuing their enterprises. The commercial demand for endangered animals from the wild should be eliminated, and the United States should take the lead by reducing the demand by its citizens for these animals, but to abruptly eliminate this demand by declaring illegal an activity which does not affect wild stocks appears to be an unnecessarily severe approach.

The 1969 Endangered Species Act did not prohibit sale and interstate transport for commercial purposes of animals listed as endangered or the parts or products of such animals. Only importation was prohibited. The 1973 act provides a 1 year economic hardship exemption for species listed subsequent to December 28, 1973. An exemption is also provided for animals held in a controlled environment on the date of enactment if such animals were not being held for a commercial purpose. For example, the breeder of Swinhoe's pheasant who trades with other aviculturists, the wholesaler and retailer with a stock of scrimshaw or other products of animals listed as endangered under the 1969 authority were not provided any exemptions under the new law. Yet, they were engaged in legitimate commerce prior to December 28, 1973. I believe these people have a valid criticism of the act. The act should be modified to insure equity to those individuals impacted.

The 1973 act appeared not to distinguish between "captive, self-sustaining populations" of endangered species and wild populations of the same species. Yet, some species are being bred in captivity at a rate sufficient to insure the continued supply of captive animals without replacement from wild stocks.

As we gained familiarity with the act and the scope of its impact, it appeared desirable to resolve the problem of captive, self-sustaining stocks of endangered animals by legislative action. In hearings during the last session of Congress such an amendment was proposed. It would have established a category for listing captive, self-sustaining populations of otherwise endangered species and authorized the Secretary to issue protective regulations. We have since determined that similar action can be accomplished administratively under the existing authority.

At that time we suggested a number of other amendments which have since been refined. Our specific amendments to the Endangered Species Act were submitted to the President of the Senate and Speaker of the House on October 2 as proposed legislation. I believe copies of that submission were also provided to your committee.

Briefly, the amendments would add a new type of economic hardship exemption by providing the Secretary with authority to waive some of the prohibitions, namely those dealing with importation, exportation, and interstate commerce, for live endangered species as

well as parts or products lawfully held within the United States on December 28, 1973, for commercial purposes.

This amendment, if enacted, would among other things resolve the problems addresses by S. 229, a bill recently passed by the Senate providing for disposal of whale bone and teeth.

Other clarifications and refinements to the act are proposed which have been identified as necessary to efficient execution of the program. First, it is proposed to eliminate the 90-day comment period in the issuance of emergency listing regulations. Such emergency regulations cease to be effective after 120 days unless the standard regulatory procedure is applied. If an emergency occurs, authority should be available to take immediate action. A 90-day waiting period could be too late to be of benefit to the animal or animals involved.

A clarifying amendment is proposed to insure that notice of permit review applies to all permits authorized. In order to overcome a problem with the 30-day notice requirement in issuing permits in an emergency situation, it is proposed to eliminate such requirement for emergency situations only. There have been occasions where the health or life of an animal on the endangered species list has been threatened because the Secretary lacks the authority to waive the strict 30-day public notice requirement.

Most typically, this problem has arisen where an owner of animals in captivity goes into bankruptcy and there is no money to pay for food for the animals. We know of no instance where an animal has died under these or similar circumstances, but we feel the situation could easily be avoided by an emergency clause such as the one suggested in our proposed amendment.

Two other amendments are proposed to correct apparent oversights in the act. Authority for law enforcement personnel to arrest, without a warrant, persons committing violations in their presence or view was contained in the 1969 act and is found in other wildlife statutes. Apparently it was inadvertently omitted from the final language in the 1973 act. Likewise, provision to dispose of forfeited property contained in the 1969 act was overlooked in drafting the new act.

With regard to funding activities under the act, other than grant-in-aid and land acquisition, the administration's proposal to extend the appropriation authorization has recently been introduced as S. 2334. The authorization, contained in section 15 of the act, expires at the close of fiscal year 1976.

The administration's recommendation for the Department of the Interior's authorization is for maintaining the fiscal year 1976 level of \$10 million annually through fiscal year 1978. An authorization at this level will permit actions to be taken to protect those species which are most important to the American people and which are in the most critical condition. In other words, we must establish priorities for handling activities under the act.

We must look at the act as a whole and determine what our priorities should be, and where limited dollars and manpower should be used to obtain the greatest benefit to the resource. The act is so comprehensive in its scope and import that it would be virtually impossible, even with very high levels of funding and staffing, to accomplish all the work that is mandated by the act.

Therefore, we have to make some selections about what it is we will do. With regard to endangered and threatend animals and plants, this means we will concentrate our resources on native species before foreign species and on species that will benefit most by being listed first. We will be concentrating on consummating cooperative agreements with the States. Only with their full participation can the job be done.

States bring to the effort hundreds of biologists and enforcement personnel and millions of acres of potential habitat. On the other hand, we will be forced to deemphasize certain provisions of the act, such as the section 9(d) requirement to license all importers and exporters of fish and wildlife. The international program envisioned in section 8 will also be limited. Animals will be given priority over plants and full species given priority over lesser groupings.

WETLANDS LOAN ACT EXTENSION

In 1961, the Wetlands Loan Act was enacted in response to expanding drainage of wetlands in the glaciated prairie pothole region and other areas of the country. The act, which authorized a \$105-million interest-free advance to the Migratory Bird Conservation account, provided the impetus for the Fish and Wildlife Service accelerated wetlands acquisition program. The funds authorized were used in combination with annual migratory bird hunting stamp receipts to offset or prevent the serious loss of important wetlands and other waterfowl habitat.

The loan authority scheduled initially to expire June 30, 1968, was subsequently extended to the end of fiscal year 1976, after which time the appropriated portion of the loan advance is to be repaid to the Treasury using 75 percent of annual migratory bird hunting stamp receipts.

H.R. 5608 would again extend the date of repayment of the fund. As passed by the House of Representatives, the bill would extend repayment until October 1, 1983, and would authorize an additional \$95 million advance, thereby increasing the present \$105 million to \$200 million.

In addition, the bill would amend the Migratory Bird Hunting Stamp Act. It would change the name of the Federal "duck" stamp from "Migratory Bird Hunting Stamp" to "Migratory Bird Hunting and Conservation Stamp." Other amendments to the Hunting and Stamp Act are contained in H.R. 5608 to permit the sale of the stamp at places other than post offices and allow anyone—not just retail dealers of hunting and fishing equipment and authorized State license sales agents—to redeem unused stamps. The bill also amends the Migratory Bird Conservation Act to clarify the Secretary's authority to purchase easements in land and waters as well as fee simple title.

Mr. Chairman, we support the objectives of this bill and urge that it be enacted with the amendments contained in the Department's report which will be furnished within the next few days.

We have recently completed a detailed review and evaluation of the accelerated wetlands acquisition program objectives. In addition, at the request of the Office of Management and Budget, a detailed

analysis was undertaken to determine the impact of the Service's land acquisition program on the President's economic program. I will not go into any details of this analysis now as a summary is contained in the material attached to my statement.

I would like to stress the need to enact legislation providing for a continuation of our land acquisition program. Without modification of the Wetlands Loan Act, payback to the Treasury will begin in fiscal year 1977 using 75 percent of the money accruing annually to the Migratory Bird Conservation Fund account. If the "duck" stamp remains at its present price of \$5, the Federal waterfowl acquisition program will be limited to about \$3 million annually. This amount of money will not go very far in today's real estate market.

The need to prevent the continued loss of, or irreversible damage to, the Nation's wetlands and other waterfowl habitat has never been more critical than it is today. Wetlands are disappearing at an ever-increasing rate, and likewise, the cost of the remaining wetlands is increasing. Preservation of wetlands, that is, lowlands covered with shallow and sometimes temporary or intermittent water, is important to more than just insuring the continued maintenance of waterfowl.

Marshes, swamps, bogs, wet meadows, potholes, sloughs, and river-overflow lands provide many other benefits to society including production of upland game and shorebirds, recharge of ground water supply, floodwater retention, salt and nutrient entrapment, sport and commercial fishery production, and various recreational activities. Unfortunately, a great many people think that wetlands are just so much wasteland. So long as this belief prevails, wetlands will continue to be drained, filled, diked, impounded, or otherwise altered.

Mr. Chairman, our amendments to H.R. 5608 would eliminate repayment of the loan and authorize general appropriations as necessary to acquire the most critical habitat. However, we think that duck stamp revenues should be the backbone of the land acquisition program. The request for general appropriations would depend upon the amount of "duck" stamp receipts, the progress of the acquisition program, and within consideration for the changing fiscal climate. Therefore, we would amend the Migratory Bird Hunting Stamp Act to provide the Secretary with authority to set the price of the stamp based on current real estate values and other program costs. Another of our amendments to the Hunting Stamp Act would require any person, regardless of age, who hunts migratory waterfowl to possess a "duck" stamp. Approximately 10 to 15 percent of the migratory bird hunting public is under the age of 16.

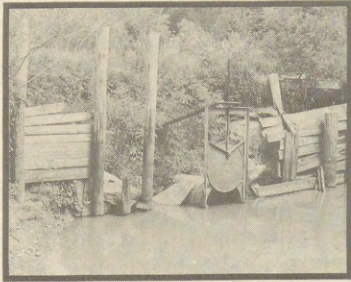
As I mentioned previously, the House of Representatives in passing H.R. 5608 changed the name of the "duck" stamp to "migratory bird hunting and conservation stamp." We would prefer that the name be modified to "migratory bird conservation stamp" to more nearly reflect the purpose of the program and encourage citizens outside the hunting community to support wetlands acquisition for conservation of waterfowl. To call it a "hunting and conservation" stamp implies erroneously that hunters are not conservationists or vice versa.

Mr. Chairman, this concludes my prepared testimony. I will be glad to answer any questions you might have.

[The attachments follow:]

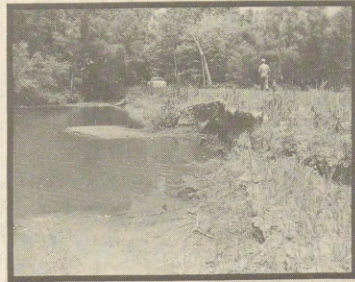
MARK TWAIN NWR

ILLINOIS



Eroding dike & deteriorating water control structure.

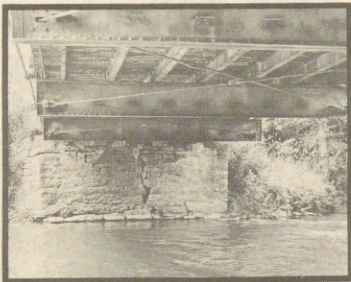
IOWA



Bank erosion on roadway. Needs to be re-sloped and riprapped.

HORICON NWR

WISCONSIN



Rock River Bridge --constructed 1895-- abutment deterioration.



Silt filled ditch affecting water management program on refuge.

**BEAR RIVER NWR
UTAH**

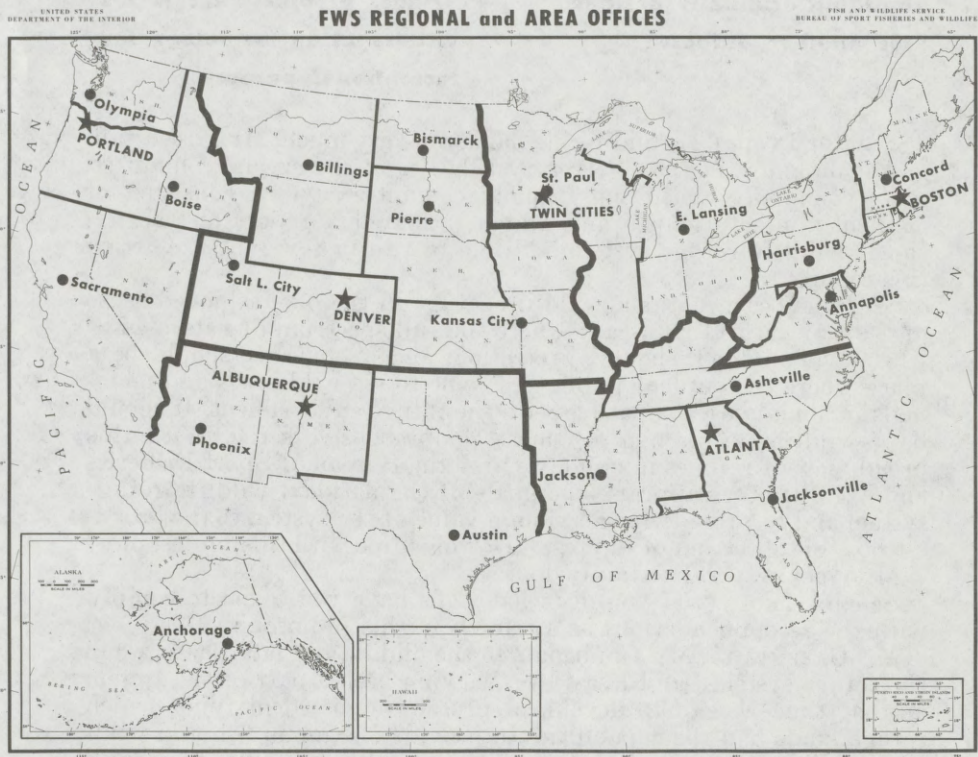


**Main distribution canal closed
by silt.**

**OKEFENOKEE NWR
GEORGIA**



Deteriorating equipment shed.



**TAMARAC NWR
MINNESOTA**



Storage shed for heavy equipment. Reconverted building originally designed for another purpose.



Deteriorating bridge pilings on Ottertail River Bridge. Bridge provides access for visitors using the refuge for recreational purposes.

Senator INOUE [presiding]. Thank you very much, Mr. Greenwalt.

As you know, in 1960, Secretary Udall created a special committee, more commonly called the Leopold committee, which consisted of eminent conservationists and which prepared a report on the national wildlife refuge system. I'd like to read a few sentences from this report:

"We view each national wildlife refuge in the old-fashioned sense of a bit of natural landscape where the full spectrum of native wildlife may find food, shelter, protection, and a home. It should be a place where the outdoor public can come to see wild birds and mammals in abundance compatible with the refuge environment. It should be a wildlife display in the most comprehensive sense. With this broad view of refuges in mind, we urge the Bureau of Sport Fisheries and Wildlife to reappraise the goals of the national wildlife refuge system and to provide for maximum value of the system to the broadest possible spectrum of interest." Do you agree with this philosophy?

Mr. GREENWALT. I certainly do.

Senator INOUE. If you do, what steps have you taken to comply with the recommendations as set forth in this philosophy?

Mr. GREENWALT. Mr. Chairman, in the middle and late 1960's, we in the refuge system—and I say "we," having been a part of the system at that time—began to develop a procedure for identifying which refuge lands had the capabilities to provide maximum fish and wildlife values and these could be exploited in the positive sense to provide precisely the kind of values presented in the Leopold report.

By means of that system, we are able to project a combination of opportunities to be derived from the expenditure of funds and the

prediction of the level of funding and staffing necessary to provide those benefits. In short, a budgeting program was developed that would yield the benefits the Leopold report advocated throughout the refuge system.

Senator INOUE. Has this budgeting system provided the kinds of guidelines necessary to project the various needs for the refuge system in the construction of the Department and the President's budget?

Mr. GREENWALT. The difficulty, as always, Mr. Chairman, as I'm sure you understand, is that the funding and manpower necessary to achieve those levels of benefits for the general public were just not available. This has been a chronic and serious problem for the national wildlife refuge system, indeed, for the Fish and Wildlife Service as a whole, for a great many years. I might say that it is a difficulty faced by all resource management agencies.

Senator INOUE. If it's of such high priority as you have indicated, I have some difficulty understanding why this message has not gone to a higher level. It's either that or there's some misunderstanding possibly on the part of the committee.

We have several documents in our possession that seem to indicate the contrary. I'd like to read excerpts from some of them. In a January memorandum report of the Assistant Secretary for Program Development entitled "Department of Interior Plan for the Mid-Seventies," the following statement appears:

With regard to migratory bird refuge the Bureau of Sports Fishing and Wildlife should identify those units under their control or identify the potential acquisition that is essential to a national program to meet the policy requirements; that is migratory birds or endangered species or research on all wildlife reserves. Those migratory bird refuges that cannot meet this test would be listed for possible disposal.

Another memo dated February 2, 1973, for the Assistant Secretary for Program Policy with the Assistant Secretary for Fish and Wildlife and Parks on the subject of policy guidelines and planning constraints for fiscal year 1975 stated as follows:

Deemphasize as rapidly as possible Federal involvement in hatcheries and refuges in favor of State and local operations * * *. Develop a white paper on the transformation of BSWF into a biological information and technical assistance agency. The paper should articulate specific goals for the next several fiscal years which can be readily monitored. A plan for retrenchment from hatchery and refuge management should be included.

How are we to interpret this?

Mr. GREENWALT. Mr. Chairman, as I'm sure you understand, this directive originated at a level far higher than mine, and I must tell you that I have never received such directives from my superiors to implement such reductions on refuges. We have been looking very carefully at the national fish hatchery program with the idea of properly identifying the roles of the Federal Government and the State government in terms of the production of fish from fish hatcheries.

We have not been attempting to identify specific national wildlife refuges for retention or discard. I have never received any instructions to the effect that we should seek out and identify specific refuges for divestiture from the system.

Senator INOUE. Your statement is that your superiors have never told you to make a list for disposal purposes?

Mr. GREENWALT. That is correct.

Senator INOUE. You have never received any instructions to de-emphasize as rapidly as possible Federal involvement in hatcheries and refuges?

Mr. GREENWALT. We have received specific instructions as to hatcheries. My predecessor was involved in those discussions. I personally have never had any such instructions as applies to the refuge system. We have been deemphasizing nonwildlife oriented recreation on refuges such as boating, swimming, and related outdoor recreation.

I have never personally been involved in anything that can be construed to be an instruction to divest the refuge system of a specific number of refuges or to categorize migratory bird refuges for disposal, or anything of this nature.

Senator INOUE. Have you turned over any hatcheries to State control?

Mr. GREENWALT. There are several hatcheries that have been made available for transfer.

Senator INOUE. Can you provide this committee with a list?

Mr. GREENWALT. I certainly will, sir.

[The following was subsequently received for the record:]

Hatcheries transferred to States

Springville, Utah; Fairport, Iowa; Lyman Hatchery, Miss., Marion, Ala.

Hatcheries approved for transfer

Fort Worth, Tex., Hebron, Ohio.

Hatcheries available for transfer

Manchester, Iowa; Tupelo, Miss.; Carbon Hill, Ala.; Frankfort, Ky.; Harrison Lake, Va.; Warm Springs, Ga.; McKinney Lake, N.C.

Senator INOUE. Have you disbanded or discontinued any of the hatcheries?

Mr. GREENWALT. Under the GSA procedures to dispose of surplus property several have been discontinued in the sense that they are no longer functioning as fish hatcheries either under the State government or some other level of government. However, all recent transfers are still used as fish hatcheries.

Senator INOUE. What do you consider to be the relative importance of the refuge system compared to other land systems within the Department of Interior, such as the National Park System?

Mr. GREENWALT. Mr. Chairman, I consider the National Wildlife Refuge System to be equally important as the National Park System. However, the Refuge System serves a purpose distinctly different from the park system. The National Wildlife Refuge System represents a diversity and uniqueness that is unparalleled in Federal land holdings anywhere. In terms of importance, therefore, in my judgment, the national wildlife refuges, considering their unique purpose and role, are equally as important to the Nation and the American public as any of the other lands administered by the Department of the Interior.

Senator INOUE. What importance do you place upon this newly created biological services program?

Mr. GREENWALT. I place very high importance on biological services, Mr. Chairman. In terms of the services and responsibilities to the public the Fish and Wildlife Service has a role of leadership in controlling and influencing actions that can have a profound effect on fish and wildlife nationwide. Those things that are an outgrowth of

the present effort to seek new energy sources, the advances of technology as it has an impact on streams and estuaries and on the oceans themselves must be undertaken in a way that does not adversely impact our living natural resources.

I believe the biological services program is critically important because this is where the most profound effect on fish and wildlife resources is and will occur for the next several years.

Senator INOUE. You have indicated that several hatcheries have been turned over to the States. Are you satisfied that these hatcheries are now being operated according to standards which you have established for yourself?

Mr. GREENWALT. Yes. We have no doubt that the hatcheries that are presently being operated by the States are being operated according to standards which we have established. We have agreed with the States about the standards by which they'll be operated. I am unaware of any hatchery that does not presently meet those standards.

Senator INOUE. Are there any plans to change the status of the national elk refuge in Wyoming or the Crab Orchard in Illinois or the Wichita Mountains in Oklahoma?

Mr. GREENWALT. No, sir. Obviously, the question is in connection with the possibility of their being divested from the refuge system. We are interested in seeking out opportunities for participation by the States and private entities in management of some of the programs, particularly recreation on those areas.

Crab Orchard is one example of an area which for several years has had a number of privately operated concessions. We have recently explored the possibility of a cooperative agreement with the State of Wyoming for management of elk during the winter when they feed on the national elk refuge. We are exploring and currently pursuing opportunities to work cooperatively with county and city governments in the vicinity of the Wichita National Wildlife Refuge in Oklahoma in order that they may help contribute to the recently extended public use program, particularly that related to swimming.

We have no plans to divest ourselves of those areas or to give them over to the sole management of any other entity.

Senator INOUE. Thank you very much, Mr. Greenwalt. The staff advises me that they have several questions they wish to submit for your consideration and response for the record. Many of the questions are of a wholly technical nature. Once again, thank you.

Mr. GREENWALT. We'll be happy to respond to any of your questions.¹

Senator INOUE. Our next witness is Miss Cynthia Wilson, the Washington representative of the National Audubon Society. Welcome to the committee.

STATEMENT OF CYNTHIA E. WILSON, WASHINGTON REPRESENTATIVE, NATIONAL AUDUBON SOCIETY

Miss WILSON. Mr. Chairman, I am Cynthia Wilson, Washington representative of the National Audubon Society.

We appreciate the invitation to testify at these important oversight hearings on the National Wildlife Refuge System. The National Audubon Society has long played a role in the refuge system and, in

¹ See p. 145.

fact, provided wardens for some of the first Federal bird reservations which later became national wildlife refuges. In the 1920's the National Audubon Society and the Boone and Crockett Club raised funds to purchase the initial land for the Sheldon Antelope Range in Nevada.

We still work cooperatively with the refuge system; for example, we lease land without compensation to the Department of the Interior for the endangered key deer national wildlife refuge. I recite this history merely to reiterate that we are not newcomers in our support of and concern for the refuge system.

In recent years, we have grown increasingly concerned over the direction the administration of the refuge system has taken. Although the Fish and Wildlife Service always received scant funds compared to the importance of its mission, in the last 2 or 3 years funds for refuges have become even more scant. Just as important, the attitude of the Department and the Service toward the refuge system has undergone an alarming change.

We have seen the Service making plans to turn over refuges to the States. The excuses given for this are that there are insufficient funds to operate the refuges because of the demands of other Service programs and that it would be more efficient to let the States operate some of the refuges.

However, where are the States going to find the money to operate the refuges? It is our understanding that the Service will still have to provide funds to the States for the refuges, so what has been gained? Frankly, although some States might be capable of operating national wildlife refuges efficiently, we doubt that this is true of all States.

Furthermore, these are national wildlife refuges, many of which were withdrawn from the public domain, and the type of management which may be undertaken by a State does not necessarily reflect the broad national interest.

Development of natural resources, particularly for energy, as well as our Nation's growing population, have put increased strains on the refuge system. But at the same time, we find a lack of support for the system within the Department and the Service.

A memorandum from the Assistant Secretary—Program Policy to the Assistant Secretary for Fish and Wildlife outlines policy guidelines for fiscal year 1975 program development. You have referred to that in earlier questions so I won't repeat the specific quotation from it.

As I noted earlier, these policies have been put into effect, and the results are becoming more apparent every day.

A good example of the types of pressures to which refuges are subject is haying and grazing. This has long been a problem on some refuges west of the Mississippi, and in some cases grazing has been detrimental to the welfare of the species which the refuge was established to protect. For example, the prairie chicken has completely disappeared from at least 12 refuges during the last three decades.

On the J. Clark Salyer Refuge in North Dakota, there were 1,000 prairie chickens in 1942, and none 8 years later. During this same period, haying and grazing on the refuge increased from 6,000 acres to 20,830 acres. We have just commissioned a special study of this problem which we hope will be completed early next year.

Problems such as inappropriate grazing would be even worse if the refuges were managed by the States, whose officials are more vulnerable to local political pressure than are Federal officials.

The "retrenchment from refuge management" dictated by the policy planners has contributed to a serious decline in the morale of refuge personnel. Now to make things worse, the program management system and a reorganization plan for the Service will obliterate the identity of the refuge system.

It appears to us that the program management system was dreamed up by some high-priced management consultant team, and one can only wonder if the authors of this system understand what a national wildlife refuge is supposed to be.

Examination of the budget of the Service shows how the refuge system has lost its identity. The funds for refuges are scattered throughout the budget, which is prepared under a system called "management by objective" which as far as I can tell simply makes it difficult to figure out where the money goes.

Perhaps the Department has forgotten that the refuge system is a unit which should be managed as a whole, not piecemeal. In the past, \$200,000,000 dollars were appropriated for the refuge system, and these were parcelled out to each refuge. Now the funds are divided up into programs, which are administered by the respective Associate Director. There is no way that the citizen, a Congressman or for that matter refuge personnel, can look at the budget and determine how much money is allocated to each refuge.

Similarly, the reorganization plan under the area office concept has abolished the position of a supervisor in each region who is responsible for refuges. Instead, there will be area managers who, as we understand it, will be in charge of everything in the area and will be able to shift funds from one program to another.

This area office concept results in fewer personnel on the refuges, when more are needed. There are more chiefs and fewer Indians. While we are in favor of seeking ways to more efficiently utilize personnel, we do not think that fragmentation of authority and mission will accomplish this goal. In addition, we fear that this reorganization lends itself too easily to politicizing the Fish and Wildlife Service.

We are also deeply disturbed by the procedures for promulgating waterfowl hunting regulations. The National Audubon Society has served on the Waterfowl Advisory Committee for many years, and as explained in the letters attached for the record, we are forced to the conclusion that the point system has been a failure.

The same conclusion was reached in 1973 by a blue ribbon committee appointed by the FWS. That committee was chaired by Mr. Hawkins and they reported the point system was just not working.

We consider immediate legal action to halt the point system, but recognizing that such action would have caused chaos, we have put the Department on notice that we are prepared to proceed with legal action to prevent the continuation of this system in the future.

We are also appalled by the so-called baiting "study" which has been authorized by the FWS in California. There have already been three studies of baiting in California by FWS personnel, which have adequately addressed the problem and recommended that such feeding be discontinued.

We are not the only organization disturbed by this year's waterfowl regulations. The attached letter from the Chairman of the Mississippi Flyway Council opposing the "experiment" on zoning in the

State of Louisiana speaks for itself. It seems apparent that the Service has lost sight of its mission to protect the resource and has yielded to pressure in spite of the advice of its own biologists.

We are sympathetic to the real problems of the Fish and Wildlife Service—inadequate funds and shortage of personnel—and we have testified before the Appropriations Committees each year urging more funds and personnel.

We are well aware that newly expanded programs, such as authorized by the 1973 Endangered Species Act, have put an added burden on the Service. However, the Department's answer to such demands is to "deemphasize Federal involvement in refuges and hatcheries in favor of State and local operations."

We will not stand idly by and watch the dismantling of the refuge system, and we hope that this committee will exercise its oversight authority and help get the Fish and Wildlife Service back on the right track.

Thank you for this opportunity to express our views.

Senator INOUE. Obviously, you disagree with the statement by Mr. Greenwalt that the refuge system has a very high priority.

Miss WILSON. Yes. It appears to us that its priority has slipped way down. As I said, we are very sympathetic to the budget crunch and the people crunch, but part of the problem to us is one of attitude. It seems to us that this attitude of deemphasizing the refuge system is widely felt.

Senator INOUE. However, as you noticed, Mr. Greenwalt stated that he had never received any instructions to deemphasize or to dispose of refuges.

Miss WILSON. I was very interested by that statement. And although I accept his word for that. I have seen correspondence concerning the matter of the States taking over some of the functional operations.

It may be a question of semantics. To me, turning over management of some of the refuges or portions of the refuges to the States is carrying out that policy memorandum. I'd be glad to submit for the record some of the correspondence that we have seen that involves discussions with States to turn over administration of some aspects of the refuge. I think that is carrying out that deemphasis and that is one of the things that concerns us.

Senator INOUE. We'll appreciate receiving copies.

Miss WILSON. Thank you.

Senator INOUE. In your statement, there is a statement that concerns me very much. "Frankly, although some States might be capable of operating national wildlife refuges efficiently, we doubt that this is true of all States. Furthermore these are national wildlife refuges, many of which were withdrawn from the public domain, and the type of management which may be undertaken by a State does not necessarily reflect the broad national interest."

Can you provide us with a list of those national wildlife refuges that are now being operated by States which have done so inefficiently?

Miss WILSON. I wasn't stating that this has already happened. That is our fear that this would happen if the refuges were managed by the States. That in some cases they might be managed in a way which could reflect local interest but not broad interest which may be quite different.

Senator INOUE. So you have no evidence of this being done at the present time?

Miss WILSON. As far as I know—

Senator INOUE. What about hatcheries?

Miss WILSON. Now I understand that some hatcheries have been turned over for administration by the Department, but I honestly don't know anything about hatchery management.

Senator INOUE. I'm glad you pointed out this management by objective, because this rings a very familiar note, something like the foreign assistance programs, program budgeting. You don't know what is being spent and where it is being spent. I'll recommend to this subcommittee that a hard look be taken into this management by objective, because if this is permitted, this Congress would never know exactly what is being spent where.

I think if we are to carry out our oversight responsibilities in an effective manner we should know where the money is being spent.

Thank you very much.

Miss WILSON. Thank you.

Senator Moss. Thank you. I am sorry I missed your oral testimony, but I will read it very carefully and also the questions and answers that you gave to my colleague who relieved me when I was called away. And on behalf of the chairman of this subcommittee, I would like to thank you and the other witnesses who appeared in our 2 days of hearings.

It seems clear that the National Wildlife Refuge System offers unmatched opportunities not only for the enjoyment of our fish and wildlife resources but a piece of nature as well. What is less clear is whether or not the Fish and Wildlife Service is doing a proper job of stewardship of this valuable resource.

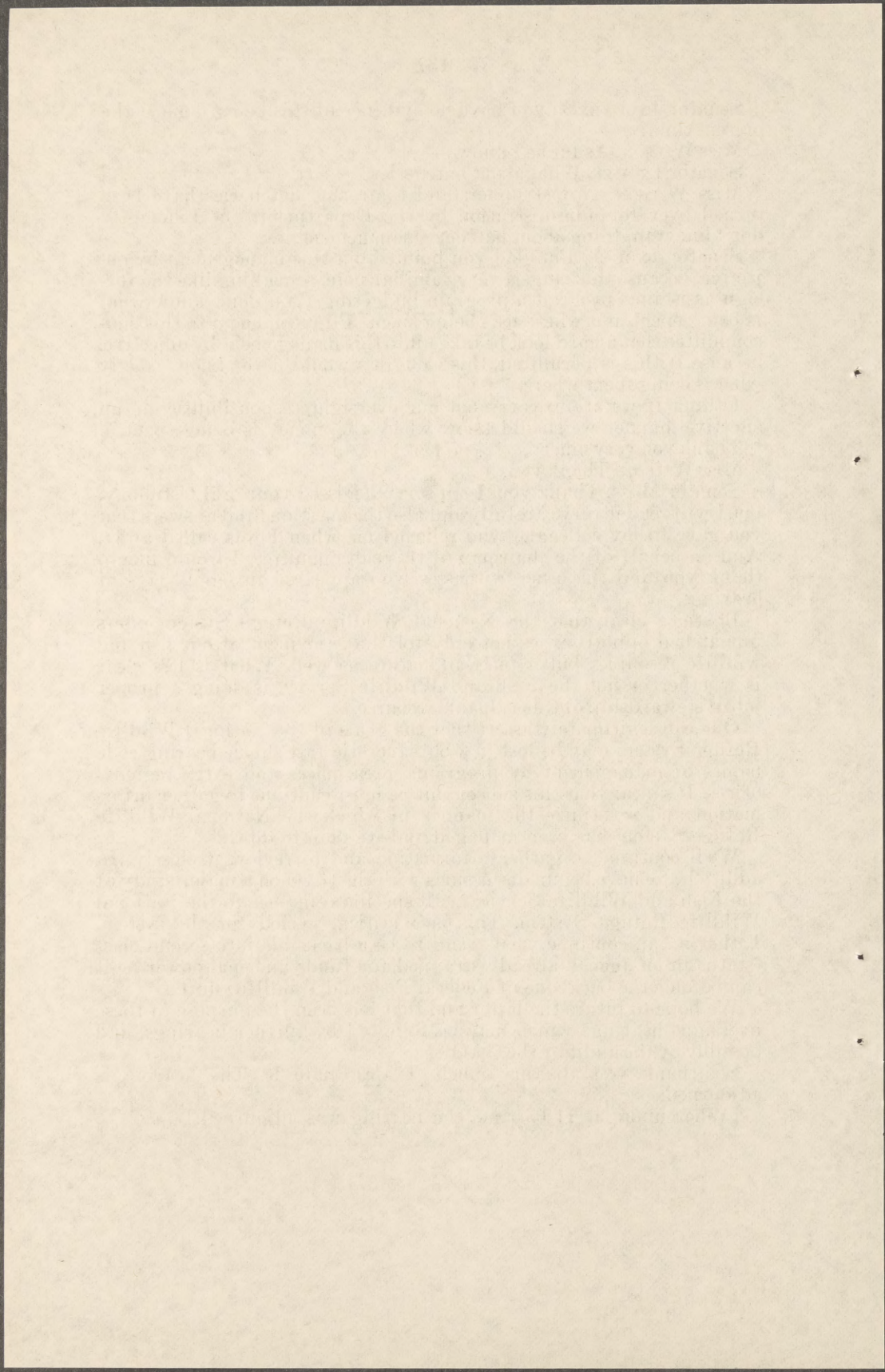
One can legitimately assert that the goals of the National Wildlife Refuge System may be lost in a bureaucratic fast shuffle bearing code names of management by programs, area offices and extra regional offices. It's clear that this subcommittee must continue to gather information and scrutinize the manner in which the National Wildlife Refuge System has been managed and we plan to do this.

We'll continue to gather information and to review it closely. In addition, we have begun discussions with the GAO on a major study of the Fish and Wildlife Service with specific reference to the National Wildlife Refuge System. This is a critical period for the system. Either it can continue what seems to be a backslide into second-class status in an agency already strapped for funds and manpower or it can become the backbone of Federal Fish and Wildlife efforts.

We hope to insure the latter and that has been the purpose of these oversight hearings which may be followed by further hearings, and possibly by the audit by the GAO.

So, thank you all very much. I appreciate it. The hearing is adjourned.

[Whereupon, at 11:05 a.m., the hearing was adjourned.]



ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS

STATEMENT OF LOUIS S. CLAPPER PRESENTED ON BEHALF OF THE NATIONAL WILDLIFE FEDERATION

Mr. Chairman, I am Louis S. Clapper, Conservation Director for the National Wildlife Federation, which has its headquarters at 1412 16th Street, N.W., here in Washington, D.C.

By way of identification, the National Wildlife Federation is a non-governmental organization which seeks to achieve conservation goals through educational means. The Federation is composed of independent affiliated organizations located in all states, Guam, Puerto Rico, and the Virgin Islands. These Affiliates, in turn, are made up of local groups and individuals who, when combined with associate members and other NWF supporters, number about 3½ million persons.

We welcome the invitation to comment upon the administration of the National Wildlife Refuge System by the Fish and Wildlife Service, feeling that this Subcommittee is performing a valuable function in conducting these hearings.

The NWF has had a long standing interest in the National Wildlife Refuge System. Our first president, J. N. (Ding) Darling, who also headed the old Biological Survey in the mid-1930's, played a prominent role in expanding the System. The Refuge System, originated in 1903, became essential after the Federal Government assumed responsibility for protecting and husbanding the continental waterfowl populations under provisions of the Migratory Bird Treaty Act of 1918. During the time of the "New Deal", many additions were made to the Refuge System in the form of game ranges, submarginal lands, and islands and the National Wildlife Federation helped marshal important citizen support for the overall program of managing migratory birds, non-game and endangered species, as well as those which were hunted. Our organization applauded concepts in the Migratory Bird Treaty, Migratory Bird Conservation, and Hunting Stamp Tax Acts and the strengthening amendments which came along at later times. Then, NWF Executive Vice President Thomas L. Kimball served as a member of a five-person Advisory Board to the Secretary of the Interior which, in 1968, developed a critique on the National Wildlife Refuge System.

This Advisory Board, in its letter of transmittal to the Secretary, stressed the public interest in wildlife and the desire to see wild creatures in their natural settings. "The National Wildlife Refuges, distributed widely as they are across the United States, offer the maximum number of Americans the chance to enjoy such spectacles as massed waterfowl against a sunset sky, a wisp of snipe power-diving down to a marsh, or a coyote mousing in a meadow," the Board said. "The thrust of our argument is that in managing refuge units for their primary objectives—migratory waterfowl preservation in the case of most refuges—we purposefully guard and restore the broadest possible spectrum of wildlife values. This we feel can be done without in the least detracting from primary functions." The National Wildlife Federation regards this broad charge as being as effective today as it was back in 1968.

We do not feel that the public is fully aware of the magnitude and importance of the National Refuge System. Our information indicates that it encompasses 32,215,499.6 acres, exclusive of waterfowl production areas. This is appreciably more than the widely-publicized National Park System (31,135,191 acres, including 1,429,430.23 acres of non-federal inholdings). Yet, these refuge properties receive much less attention, from the viewpoints of staffing and programs in the Federal budget. This is unfortunate because the refuge administrators are being called upon to shoulder ever-increasing responsibilities.

At the outset, I should emphasize our strong conviction that the Refuge System is woefully underfunded and understaffed. Many refuges have no managerial staffs at all. On some of those which do, the managers often find more of their time devoted to handling visitor and recreational problems than actually managing wildlife resources of their habitats. Further, a general lack of adequate maintenance is resulting in deterioration of programs and facilities. Federal au-

thorities, in our opinion, are remiss in seeking or granting adequate funding. In some instances, efforts have been made to turn the operation of refuges over to state agencies. However, inflated costs are handicapping these agencies as well and we feel that the Federal Government must shoulder its own responsibilities.

The Refuge System is not the only financial "step-child," however. This same problem of underfunding and understaffing extends throughout the Fish and Wildlife Service and applies to other functions, particularly law enforcement, as well. Therefore, we can see no benefit from proposals which would establish a separate "Bureau of Wildlife Refuges". Fragmentation would not help the program. Neither do we believe that federal game ranges should be administered by agencies other than the Fish and Wildlife Service.

In light of the limitations already expressed, we feel that the Service is performing fairly well in meeting its objectives. The primary goal continues to be one of managing and perpetuating the international migratory bird resources for which the Service, acting on behalf of the United States, has responsibility. When successful, management can provide many benefits which are compatible with this primary objective of preserving waterfowl resources: public shooting under regulated conditions, viewing and photographing wildlife, nature study, protection of endangered species, outdoor recreation, and preservation of wilderness.

Most units of the National Wildlife Refuge System have basic functions which must be given the top priority. Only when these functions are fulfilled, should attention be given to secondary benefits. For example, when waterfowl management requires the use of mechanized equipment, this function must have precedence over the preservation of wilderness. When an endangered species requires isolation, it should be given complete protection. We believe the Service generally is keeping these priorities in proper order.

This may be the most appropriate time to point out that citizen support for the Refuge System is of major importance. In many instances, this support has come from sportsmen. To illustrate the point, one might cite the Wheeler National Wildlife Refuge in Alabama. A constant battle has been waged to protect this important area from encroachment by both highway builders and city park enthusiasts, and sportsmen have been in the forefront in providing essential support for it. However, some of this interest is eroding away now that waterfowl hunting has been terminated.

Hunters of course, have provided major financial support for the Refuge System. Funds for sales of Migratory Bird Hunting Stamps (Duck Stamps) continue to be used to acquire essential wetlands. Monies accruing from federal excise taxes upon the sales of sporting arms and ammunition are used to finance state wildlife programs, including those which complement the federal effort.

It is our fervent hope that the 94th Congress this year will extend and expand the accelerated waterfowl wetlands acquisition program. The Fish and Wildlife Service has encountered many obstacles, including financial limitations, and the effort to acquire essential wetlands must proceed as rapidly as possible. This can be accomplished only if the emergency program is extended. If the Service must begin immediately to repay the loan from Duck Stamp receipts, the wetlands acquisition program will come to a virtual halt far short of the goal.

We have other observations about the Refuge System to share with the Subcommittee, some of which were prompted by questions raised by the Vice-Chairman. These comments follow:

"We think it is essential that the new wetlands survey be completed as rapidly as possible because the information currently available is old and out-of-date. It is our understanding that such a survey is underway in a planning stage, but this effort needs to be expedited.

"We trust that the Service will constantly re-appraise objectives of its management efforts in the light of accomplishments. Refuge operations should encourage natural and balanced movements of birds along seasonal migratory routes. In the past, southern authorities charged the Service with cooperating with northern states to "short-stop" and hold birds through feeding programs, interrupting their normal seasonal migratory flight patterns. In our opinion, constant care must be exercised to ensure that discrimination against specific regions is avoided. It also is essential that refuge management efforts be planned so as to achieve a balance among species; that is, food plantings should not unduly favor one species over another.

"It is too early to fully evaluate the new area office concept, although the plan appears to have benefits in bringing management closer to the people. We suspect

that the effectiveness of this effort, undertaken over a period of two years, will be determined to a considerable extent by the capabilities and personalities of those individuals who are in charge of state or area offices. It is possible that the administration can become so decentralized as to lose cohesion in achieving national goals. And weaknesses do exist. For example, our people in one mid-western state are incensed over the failure of a state director to move against illegal ditching which obviously disrupts water management plans for a national wildlife refuge. In passing, we also might observe that the Service in recent years appears to have undergone more reorganizations than most agencies, and we feel that these frequent shifts of personnel and their assignments may be resulting in difficulties in maintaining continuity of direction as well as sustaining personnel morale. Internal communications can be improved.

"We think the new procedure of obtaining input on hunting regulations from states and individuals, as well as from the flyways, is good. In this manner, the Service will have the benefit of a larger range of data. This is not to say that we do not still look with favor upon the flyway approach. Sound biological data must be given prime consideration regardless of its source. In establishing regulations, the Service should give prime consideration to the overall waterfowl resources, particularly those "in trouble". In case of doubt, regulations should be conservative.

"Management by objectives has potential benefits in establishing orderly procedures. However, the prioritized approach must be flexible enough to permit deviation with the occasion arises. For example, if a particularly choice wetland area becomes available for immediate acquisition, the Service should have sufficient flexibility to move without stylized constraints.

"In its management plans, we hope the Service will constantly strive to achieve naturalism. As the Advisory Board pointed out in 1968, a refuge property can be overdeveloped. Developed does not always constitute improvement.

"Fish and Wildlife Service personnel, in some presentations, have mentioned programs of environmental education and wildlife interpretation. If these programs have been implemented or instituted, we are unaware of them. To us, public information and/or education should have a high priority. Such programs not only could enhance wildlife viewing, nature observation, and photography through labeled, self-guided tours, trails, towers, etc., but through interpretive centers, and exhibits, and films can explain the true concepts of wildlife management. We are concerned that many members of the public regard refuges as sanctuaries to be given total protection, whereas they probably would be more properly termed "wildlife management areas". Care must be exercised in regulating hunting on non-migratory species, such as deer, on refuges. Any disturbance, including hunting and fishing, must be regulated in areas of visitor concentration to favor an optimum display of wild birds and mammals.

"When they do not interfere with primary refuge objectives, scientific field investigations should be encouraged."

To conclude, Mr. Chairman, we view the National Wildlife Refuge System as one of this Nation's greatest assets—one well worth strengthening through additional acquisitional and sound management. Consequently, we hope members of this Subcommittee will lend their valued assistance in securing the financing and personnel essential to accomplishing objectives of the administrators of the Refuge System.

Thank you again for the opportunity of making these remarks.

STATEMENT OF JOWANDA SHELTON, WASHINGTON DIRECTOR, THE COMMITTEE FOR HUMANE LEGISLATION

Mr. Chairman, members of the Subcommittee on the Environment, the committee for Humane Legislation, supported by a membership of 60,000 individuals from across the United States, wishes to express its appreciation of your interest in providing refuge areas for animals.

We would, however, like to submit our recommendations which must be enacted into law before these refuge areas are indeed safe places for the wild animals.

We respectfully request that our letter, statement, and proposed legislation be printed in full in the body of the transcript of hearings held by your Subcommittee on September 22, 1975 and October 3, 1975.

The legislation we propose, the Wildlife Protective Act of 1976, would prohibit the taking of any wildlife, except for the protection of endangered wildlife, from

a National Park, a National Wildlife Refuge, or the National Wilderness Preservation System.

In addition to these prohibitions contained in the Act, the Secretaries of Interior, Agriculture, and Defense, in their discretion, are authorized to issue appropriate regulations and to post federal lands under their jurisdiction, other than the above listed areas, against the taking of wildlife.

Arrests, search warrants, and penalties have been authorized in this proposed Act and the supremacy of the federal law is declared to be paramount.

Nothing in the Act authorizes the Secretary to control or regulate hunting or fishing on lands not within the system.

Mr. Chairman, we ask for recognition of the meaning of the title, "Wildlife Refuge." If harassment and killing of animals living in these areas are allowed, then the name should correctly be designated "Wildlife Hunting Reserve."

Wildlife refuges and wilderness areas should be removed from man's domain and left to nature. There is no doubt that the ecological balance of nature could be restored. Nature, cruel as it may appear at times, would eventually correct its disruption by man. The animal populations would adjust to a number the area could sustain and the pitiful results of the overpopulation of animals could no longer be used as an excuse to kill.

WILDLIFE PROTECTIVE ACT OF 1976

SECTION 1. TITLE

This Act may be cited as the Wildlife Protective Act of 1976.

SECTION 2. DEFINITIONS

For purposes of this Act, the following definitions shall apply:

- (a) "wildlife" includes all mammals, reptiles, and birds;
- (b) "Person" or "whoever" includes associations, partnerships, and corporations;
- (c) "take" includes hunt, catch, poison, net, pursue, shoot, shoot at, wound, kill, capture, trap, collect, or otherwise willfully molest or disturb;
- (d) "transport" includes ship, convey, carry or transport by any means whatever, and deliver or receive or cause to be delivered or received for such shipment, conveyance, carriage, or transportations.
- (e) "Secretary" means Secretary of the Interior.

SECTION 3. GENERAL PROHIBITION

Notwithstanding any other provision of law, it shall be unlawful for any person to take any wildlife within a National Park, National Wildlife Refuge, the National Wilderness Preservation System, except as specifically provided in Section 4 of this Act.

SECTION 4. EXCEPTIONS

In a National Park or National Wildlife Refuge, and only in instances of proved overpopulation of any species of wildlife, or where necessary to protect an endangered species, the Secretary is authorized to designate rangers, or other federal agents, who have been tested for sharpshooting ability, to take the necessary wildlife; in cases of overpopulation the old and the weak shall be taken first; *provided, however*, that the overpopulation shall be killed only when it is impractical to relocate the excess or to re-introduce predatory animals.

SECTION 5. POSTING OF PUBLIC LANDS

In addition to the prohibitions contained in Section 3 of this Act, and as an additional means of preserving wildlife, the Secretaries of Interior, Agriculture, and Defense in their discretion are authorized to issue appropriate regulations and to post federal lands under their jurisdiction (other than National Parks, National Wildlife Refuges and Wilderness Areas) against the taking of wildlife. Any person taking wildlife on such designated federal lands shall be subject to the penalties provided in Section 7 of this Act.

SECTION 6. ARRESTS; SEARCH WARRANTS

Any employee of the Department of Interior, Department of Agriculture or the Department of Defense, authorized to enforce the provisions of this Act shall have power, without warrant, to arrest any person committing a violation in his presence or view and to take such person immediately for examination or trial before an officer or court of competent jurisdiction; shall have power to execute any warrant or other process issued by an officer or court of competent jurisdiction for the enforcement of the provisions of said sections; and shall have authority, with a search warrant, to search any place. The several judges of the courts established under the laws of the United States, and United States commissioners, may, within their respective jurisdictions, and upon proper oath or affirmation showing probable cause, issue warrants in all such cases.

SECTION 7. PENALTIES

Any person who shall violate any of the provisions of this Act, or regulations made thereunder, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined not less than \$100.00 nor more than \$1,000.00, or be imprisoned not more than six months, or both.

SECTION 8. SUPREMACY OF FEDERAL LAW

To the extent necessary to effectuate the purposes of this Act, the power and authority of the United States over federal lands shall be paramount.

SECTION 9. FISHING EXCLUDED

Nothing in this Act shall affect fishing or the regulation thereof.

SECTION 10. SPECIFIC REVISIONS IN EXISTING LAW

- (a) 16 U.S.C. 41 is hereby revoked.
- (b) In 16 U.S.C. 661 delete the words "shooting and" before the words "fishing areas."
- (c) In 16 U.S.C. 668 dd(c), delete the following words: "Nothing in this Act shall be construed to authorize the Secretary to control or regulate hunting or fishing of resident fish and wildlife, including endangered species thereof, on lands not within the System. The regulations permitting hunting and fishing of resident fish and wildlife within the System shall be, to the extent practicable, consistent with State fish and wildlife laws and regulations. The provisions of this Act shall not be construed as affecting the authority, jurisdiction, or responsibility of the several States to manage, control, or regulate fish and resident wildlife under State law or regulations in any area within the System." and put in lieu thereof: "Nothing in this Act shall be construed to authorize the Secretary to control or regulate hunting or fishing of resident fish and wildlife on lands not within the System. The regulations permitting fishing of resident fish within the System shall be, to the extent practicable, consistent with State fish laws and regulations. The provisions of this Act shall not be construed as affecting the authority, jurisdiction, or responsibility of the several States to manage, control, or regulate fish under State law or regulations in any area within the System."
- (d) 16 U.S.C. 668 dd (d) (1) is amended to read as follows:
The Secretary is authorized, under such regulations as he may prescribe, to—
 - (1) permit the use of any area within the System for any purpose, including but not limited to fishing, public recreation and accommodations, and access whenever he determines that such uses are compatible with the major purposes for which such areas were established.
- (e) In 16 U.S.C. 1333 (c) after the word "motor boats" add "no use of guns or bows and arrows."
- (f) In 16 U.S.C. 1333 (d) (8), add the following proviso at the end: "*provided, however,* there shall be no hunting within the National Wilderness Preservation System."
- (g) At the end of 43 U.S.C. 315 add the following: "*Provided further* that the Secretary of the Interior, acting through the Bureau of Land Management, may post any land within a grazing district as prohibited for hunting and/or fishing."

UNITED STATES SENATE,
 COMMITTEE ON COMMERCE,
 Washington, D.C., July 30, 1975.

HON. KENT FRIZZEL,
 Acting Secretary,
 Department of the Interior, Washington, D.C.

DEAR MR. SECRETARY: The Subcommittee on the Environment of the Senate Committee on Commerce has scheduled two days of oversight hearings on September 22 and October 3 on the administration of the National Wildlife Refuge System by the U.S. Fish and Wildlife Service. The Subcommittee would like to request the appearance of you or your designee at the October 3 hearing for the purpose of presenting testimony and responding to questions from members of the Subcommittee.

Following is a summary of the major topics to be taken up during the course of the hearings. We would appreciate your being prepared to discuss these topics in detail. In addition, we would appreciate your providing us with the information requested in those questions marked by an asterisk (*) by Monday, September 8.

1. Goals and Objectives of the National Wildlife Refuge System:

A. What are the Fish and Wildlife goals and objectives for the National Wildlife Refuge System?

B. How were these goals and objectives formulated?

C. How are these goals transformed into actual policy or programs on the individual refuges?

D. How does the Service evaluate the degree to which programs on the individual refuges conform to these goals?

E. At the present time, what is your appraisal of the System's overall conformance to these goals?

F. Do you foresee a change or modification in the future of the goals and objectives under which the System presently operates?

2. Budgetary and Personnel Needs:

A. Please provide a detailed analysis of the budgetary and personnel requirements necessary to provide optimum operation of the refuge system. Please describe budgetary requirements according to types of activities, such as recreation and interpretation, wildlife management, and facility maintenance.

B. Please provide a detailed analysis of the budgetary and personnel allocations made to the refuge system each year from fiscal year 1971 to the present, again describing budgetary allocations according to types of activities. If funding and personnel allocations to the System are less than requirements for its optimum operation, what immediate effects are these shortages having on the refuge system, particularly in terms of conservation of wildlife resources, backlogs in maintenance of facilities, and cutbacks in public visitation and recreational uses?

C. Please provide a detailed analysis of the budgetary and personnel allocations made to the entire Service according to (1) central office (2) regional offices and (3) field stations from fiscal year 1971 to the present.

3. Program Management System:

A. Please be prepared to give the Subcommittee a brief description of the program management system recently adopted by the Service, including a brief comparison between these and previously used management systems.

B. What impact has the program management system had to date upon the administration of the refuge system, particularly in terms of (1) achievement of objectives on the individual refuges (2) coordination of the various programs or projects on individual refuges, and (3) allocation of funds and personnel to regional and field offices.

4. *Reorganization of the Service According to Area Offices:

A. Please give the Subcommittee a brief description of the area office organizational concept now being utilized in Region VI.

B. It is our understanding that when the Region VI office was created in 1972, funding and personnel for the regional and area offices were diverted from the refuges in the region rather than being acquired from additional appropriations. Is this correct? If so, what is the total number of personnel and the total amount of funds diverted from the refuges to the regional and areawide offices?

C. It is also our understanding that Regions I-V of the Service are to be re-organized according to this management concept, and that neither additional funding nor personnel is being requested for this re-organization. Is this correct?

How much additional funding and personnel will be required for this re-organization? Will this funding and personnel be diverted from the refuges in the various regions?

5. Land Acquisition Program :

A. Please be prepared to present the Subcommittee with an evaluation of the Service's land acquisition program to date, including wetland acquisition. Please outline any goals or other criteria which have been developed to assist the Service in determining which lands should be given priority in acquisition.

B. In conjunction with the above evaluation, the Subcommittee would appreciate receiving the Department's evaluation of H.R. 5608, legislation to extend until the close of FY 1983 the period in which funds are authorized to be appropriated for the acquisition of wetlands.

6. *Waterfowl Hunting Regulations :

A. Please provide the Subcommittee with a detailed explanation of how federal waterfowl hunting regulations are set. Please include an explanation of all phases of this regulatory process, including waterfowl survey procedures and procedures for setting seasons and bag limits.

In addition to the above points, the Subcommittee is presently attempting to determine whether additional exemptions to section 9 of the Endangered Species Act of 1973, such as those contained in S. 229 (the Scrimshaw Art Preservation Act of 1975), are warranted. The Subcommittee would appreciate receiving your comments on this matter at the time of the hearing.

While there will no doubt be additional questions at the time of the hearing, the above should delineate for you the intended scope of the Subcommittee's inquiry.

Additional information on the time and location of the hearings will be forwarded to you.

If you have additional questions, please feel free to contact us, or Michael Brownlee and Kathleen Korpon of the Subcommittee staff at 224-9351.

Best regards.

Sincerely,

PHILIP A. HART,
Chairman,

FRANK E. MOSS,
Vice Chairman,

Subcommittee on the Environment.

U.S. DEPARTMENT OF THE INTERIOR,
FISH AND WILDLIFE SERVICE,
Washington, D.C., October 1, 1975.

Hon. PHILIP A. HART,
Chairman, Subcommittee on the Environment,
U.S. Senate, Washington, D.C.

DEAR SENATOR HART: In your letter of July 30, 1975, regarding oversight hearings October 3 on administration of the National Wildlife Refuge System you requested that we provide in advance information on refuge budgetary and personnel needs, reorganization of the Fish and Wildlife Service's regional and area offices and an explanation of how waterfowl hunting regulations are established. The enclosed data are in compliance with that request.

We appreciate your interest in the Fish and Wildlife Service's administration of the refuge system and look forward to further discussions on this important function during the hearings.

Please advise if we can be of further assistance.

Sincerely yours,

LYNN A. GREENWALT,
Director.

Enclosures.

1(A). The mission of the Fish and Wildlife Service is: "To assure maximum opportunity for the American people, consistent with their needs and desires, to benefit from fish and wildlife resources as part of man's natural environment."

The National Wildlife Refuge System contributes to this mission by providing a national network of lands and waters managed for wildlife.

In its "Management by Objectives" approach, the Fish and Wildlife Service is divided into 16 Programs. Each Program has a different goal and each sup-

ports the mission of the Service in a different way. The activities of the National Wildlife Refuge System fit within four of these Programs, each of which is discussed separately below:

ENDANGERED SPECIES PROGRAM

The goal of this Program is to preserve, restore and enhance all species of animals and plants that are endangered with extinction or are threatened with becoming endangered. The National Wildlife Refuge System supports this goal by providing habitat, sanctuary, isolation, intensive management, or other particular needs of these species on refuge lands.

Currently, the quantified objective for the National Wildlife Refuge System is to provide for 165 million use days by threatened and endangered species on existing refuge lands. This number will change from year to year as new refuges are acquired and as species are added or deleted from the list. At the present time 44 endangered and threatened species of fish and wildlife are found on one or more of 139 refuges.

MIGRATORY BIRDS PROGRAM

The goal of this Program is to perpetuate the migratory bird resource for the benefit of people throughout the world. The National Wildlife Refuge System supports this by providing breeding, resting and wintering habitat, sanctuary, and other needs of migratory birds. Units of the System serve as islands of habitat throughout the United States which waterfowl and other migratory birds utilize during their annual migrating cycle.

For this Program, the current quantified objectives for the National Wildlife Refuge System are: To provide for 1.8 billion use days by waterfowl on existing refuge lands; to provide for 4 billion use days by other specially-recognized migratory birds on existing refuge lands; and to produce 2.5 million waterfowl on existing refuge lands.

MAMMALS AND NONMIGRATORY BIRDS PROGRAM

The Service's goal for this Program as applied to the National Wildlife Refuge System is to maintain a natural diversity and abundance of mammals and non-migratory birds on refuge lands.

The current quantified objective is to provide for 11.3 million use days by 9 species of specially-recognized mammals on existing refuge lands.

INTERPRETATION AND RECREATION PROGRAM

The goals of this program are to expand understanding and appreciation of fish and wildlife ecology and man's role in his environment, and to provide visitors at Service installations with high quality, safe and enjoyable recreational experiences oriented toward wildlife.

Within these goals, seven quantified objectives have been developed for the National Wildlife Refuge System:

(1) *Scientific studies.*—To encourage scientific knowledge by making refuge lands available for 1,200 scientific studies by colleges, universities, professional organizations, scientific societies and individuals.

(2) *Environmental education.*—To encourage environmental understanding by making refuge lands available as study areas for use by schools (elementary through university levels) and for formal environmental education activities concerning wildlands ecology and man's role in his environment. The quantified objective is to provide for 1.7 million activity hours of environmental education on existing refuges each year.

(3) *Interpretation.*—To enhance the general public's understanding of fish and wildlife and their habitat through interpretive programs on refuge lands. The quantified objective is to provide for 13.2 million activity hours of interpretation on existing refuges each year.

(4) *Dedicated areas.*—To preserve and protect outstanding ecological and scenic areas through the establishment of wilderness areas, natural landmarks, scenic rivers, etc., and to preserve our historic and cultural environment through the establishment of historic sites and historic landmarks. For the National Wildlife Refuge System and quantified objective is to preserve 1,000 areas on existing refuges.

(5) *Fish and wildlife information.*—To create public awareness and to promote a fish and wildlife conservation ethic by enhancing the general public's understanding of the issues involved and the impacts of alternative land and

water allocation decisions by providing information about fish and wildlife and their relationship to man. This information is provided through news releases, radio programs and many other types of informational "professional services."

The objective for the National Wildlife Refuge System is for existing refuge personnel to provide 22,000 information-type professional services annually.

(6) *Recreation.*—To provide high quality fish/wildlife-oriented recreation activities on refuge lands that are compatible with fish and wildlife programs. Recreational uses that are not fish/wildlife-oriented are provided only when these uses are adequately funded and do not conflict with a refuge's primary objectives. Quantified objectives are to provide 53 million activity hours of fish/wildlife-oriented recreation and 20 million activity hours of non-fish/wildlife-oriented recreation on existing units of the National Wildlife Refuge System each year.

(7) *Youth programs.*—To support the YCC and Job Corps Programs to the extent authorized by Congress. Current (fiscal year 1975) objectives for the National Wildlife Refuge System support 851 YCC enrollees and 336 Job Corps enrollees.

1(B). The goals were formulated by the program managers and program coordinators of the Fish and Wildlife Service and were approved by its Director.

The quantified objectives for the National Wildlife Refuge System were developed for the most part through the computerized refuge PPBE (Program Planning, Budgeting and Evaluation) system, using information gathered at the field level, as follows: In the program planning portion of the PPBE system, individual refuge managers examine their refuges from the standpoints of demand and capacity. For a given refuge there may be high public demand for an objective (output) but little capacity to produce it. The reverse may be true at another refuge which may have high capacity to produce the output but little demand for it. After resolving any time/space conflicts between different objectives, the refuge manager sets the lesser of either demand or capacity as the quantified objective for that refuge.

The quantified objectives for all refuges in the System are then entered into the computer and added together. Their sums become the quantified objectives for the National Wildlife Refuge System as a whole at a maximum funding level over a six-year planning period. For budgeting purposes, program managers, personnel of the Division of Wildlife Refuges, and other offices in the Fish and Wildlife Service jointly adjust these objectives to reflect the most efficient production level for the System. The ability of the computer to show outputs possible at various funding increments is utilized in this adjustment process.

1(C). From each Service Program, annual "program advice" documents are forwarded from Washington to the regional directors of the Service. The program advices include the major goals, objectives, and tasks to be accomplished during the fiscal year, as well as major policy guidance and fund allocations. Regional directors translate the program advices into "annual work plan advices" for all the field stations and organizations in the region. The annual work plan advices provide the same kinds of information to field stations as the program advices provide to regional directors including specific jobs to be done and fund and manpower targets with which to operate.

Based on the annual work plan advice, individual refuge managers plan the work to be done at their refuge during the fiscal year and the outputs (objectives) to be produced as a result of this work. The planning effort results in an annual work plan for work units and an annual plan for output production, both of which are computer input documents. These documents and the resulting computer printouts transmit to the regional and Washington offices an overall management plan which each refuge manager intends to carry out during the fiscal year.

1(D). As the fiscal year progresses, refuge managers report the kinds and amounts of work accomplished and the kinds and amounts of outputs produced. Through cost coding, they also report the cost (in both man-hours and dollars) of doing each kind of work and of producing each kind of output. All of these data are computerized, and the computer matches the actual accomplishments and costs with the amounts originally planned.

Various computer printouts show summaries of this information for individual refuges, regions, and for the National Wildlife Refuge System as a whole. These printouts, plus narrative reports of activities and other internal communications, provide the means by which all levels of management can evaluate the degree to which programs on individual refuges conform to overall goals.

1(E). The Service is currently in the transition period of change from management by organizational units to management by programs. With any such fundamental change, involving revised objectives and policies and different lines of communications, areas of non-conformance to Service program goals are likely to occur. The general direction of the System is in good overall conformance. It is expected to improve along with the other organizations of the Service as time passes and as methods of program evaluation become more standardized.

1(F). Since the Service has only recently adopted the program approach to management, it is likely that the program goals and objectives will be further refined. As information about each program grows, evaluations and adjustments can be made to align program goals and System objectives more closely with needs. No major changes or shifts in goals and objectives are anticipated except as may be necessary to accommodate the large impact of lands which may be added to the System under the Alaska Native Claims Settlement Act.

2(A). Before answering this question, it is necessary to define "optimum operation of the refuge system." We define optimum operation of the National Wildlife Refuge System as that level of active production which obtains the most efficient use of resources, i.e., the greatest output for the dollars spent. This recognizes that dollars and manpower above this level would continue to yield additional cost effective benefits but at a declining rate of efficiency.

The attached table provides a detailed listing of the annual budgetary and personnel requirements necessary to operate the National Wildlife Refuge System at an optimum level. It does not include any inputs or outputs from administrative levels above the field (refuge) level, such as from area, regional or Washington offices. Table I includes the estimated annual costs of operating new refuges scheduled for acquisition during the fiscal year 1977-1982 period but excludes the outputs from these areas. Dollar amounts are not adjusted for inflation. The "facility rehabilitation" category is an annual revolving fund account (\$1.6 million in fiscal year 1976) aimed at getting at the most critical needs in the \$83 million rehabilitation backlog currently existing in the National Wildlife Refuge System. If adopted, this plan for increasing outputs and production efficiency in the refuge system would increase the revolving fund to \$3.1 million per annum for minor rehabilitation (not to exceed \$60,000/project) and add about \$2.0 million annually for major rehabilitation (over \$60,000/project) over the next six years.

The foregoing analysis is based upon the assumption of attaining a level of operation that is considered optimum as that term is defined above. The analysis, based upon a refuge operation and maintenance program review recently completed in connection with the preparation of the Department's fiscal year 1977 budget, presupposes no constraints of the kind normally prescribed by current national fiscal concerns, the needs of other Service or Department programs, or the development of a balanced Servicewide program based upon national, Servicewide priorities.

In the future, as in the past, decisions will be made in light of all these factors. The Fish and Wildlife Service recognizes a variety of resource and habitat needs which must be met with the funds and manpower made available. Accordingly, conscious decisions continue to be made to emphasize those programs that have the greatest potential for beneficial impact on the fish and wildlife resources of the Nation. As a result, the Service has for several years emphasized those programs that have been determined to have highest priority in terms of their impact on fish and wildlife resources. Protection and preservation of endangered species have been emphasized in the allocation of funds and manpower, as have programs which deal with influencing decisions that have the potential for serious negative impact on fish and wildlife. The Service has given especial emphasis to what is called Biological Services, an effort designed to provide basic information about the probable effects of such activities as energy development and exploitation on fish and wildlife habitats. The Service's responsibilities under the Fish and Wildlife Coordination Act, which requires an assessment of probable effects proposed water development projects on fish and wildlife, have been given high priority as well.

This ranking of priority of effort will continue in the future. As a result, the Service must indicate that while the analysis represented here is an accurate assessment of the needs of the National Wildlife Refuge System in order to achieve optimum effectiveness, it is not the best interest of the fish and wildlife

resources of the Nation to apply limited manpower and funding resources in the way the analysis recommends. Briefly stated, the analysis was prepared in isolation from the consideration of the Service's needs as a whole, and the Service cannot support full implementation of a funding and staffing plan implied by this analysis. To do so would be to restrict sharply our ability to pursue other higher priority resource management efforts.

TABLE 1.—U.S. FISH AND WILDLIFE SERVICE, NATIONAL WILDLIFE REFUGE SYSTEM, OPTIMUM OPERATION LEVEL

Output and input by program	Fiscal year 1976 level	Maximum efficiency level, fiscal year 1982	Amount of increase
Migratory birds:			
Outputs:			
Waterfowl produced (birds).....	1.6	2.5	0.9
Waterfowl maintained (use-days).....	1,628.4	1,783.8	155.4
Inputs:			
Capital investment (dollars).....	.7	16.4	5.7
Facility rehabilitation (dollars).....	1.5	2.0	.5
Operations and maintenance (dollars).....	14.1	19.3	5.2
Personnel (positions).....	469.0	612.0	143.0
Mammals and nonmigratory birds:			
Outputs: Special recognition mammals (use-days).....			
	10.8	11.3	.5
Inputs:			
Capital investment (dollars).....	0	12.7	2.7
Facility rehabilitation (dollars).....	.1	.1	0
Operations and maintenance (dollars).....	2.2	5.4	3.2
Personnel (positions).....	46.0	95.0	49.0
Endangered species:			
Outputs: Endangered species maintained (use-days).....			
	142.2	165.0	22.8
Inputs:			
Capital investment (dollars).....	0	13.3	3.3
Facility rehabilitation (dollars).....	0	.5	.5
Operations and maintenance (dollars).....	1.0	3.6	2.6
Personnel (positions).....	71.0	136.0	65.0
Interpretation and recreation:			
Outputs:			
Environmental education (activity hours).....	.5	1.7	1.2
Interpretation (activity hours).....	2.3	13.2	10.9
Wildlife recreation (activity hours).....	43.2	52.6	9.4
Nonwildlife recreation (activity hours).....	29.0	20.0	9.0
Inputs:			
Capital investment (dollars).....	0	12.5	2.5
Facility rehabilitation (dollars).....	0	.6	.6
Operations and maintenance (dollars).....	4.0	10.5	6.5
Personnel (positions).....	257.0	309.0	52.0
Total inputs:			
Capital investment (dollars).....	.7	114.9	14.2
Facility rehabilitation (dollars).....	1.6	3.2	1.6
Operations and maintenance (dollars).....	21.3	38.8	17.5
Personnel (positions).....	843.0	1,152.0	309.0

¹ Total. Not an annual figure.

Note: All figures are in millions except for personnel which is expressed in permanent full-time positions. Use-day: the presence on a refuge of 1 bird, mammal, etc., for 1 day. Activity hour: 1 person engaged in 1 type of activity for 1 hour.

2(B). A recent program review of the future role for the National Wildlife Refuge System has shown that current funding and manpower are not sufficient to efficiently produce or sustain program outputs. A summary of National Wildlife Refuge System growth, funding, personnel and public use is shown in table II. Table III provides budgetary allocations to the National Wildlife Refuge System from direct appropriations by activity. Problems and effects for funding and manpower constraints for various activities are described below.

REFUGE FACILITIES

Many of the facilities built during the expansion of the 1930's reached their life expectancy during the 1960's and became deteriorated and/or outmoded. At the same time, enactment of the Migratory Bird Conservation Act provided the Service the opportunity to expand their acquisition of wetlands through use of the

"advance authority" provision of the Act. Given the critical need to preserve wetland habitat, it has been the Service's professional opinion that this acquisition was of higher priority than facility rehabilitation or reconstruction. To date almost \$86 million of "advance authority" has been appropriated from the General Fund of the Treasury. These are funds which could conceivably have been used to upgrade facilities had that been the higher priority need. The backlog of rehabilitation needs within the refuge system now stands at \$83 million. In attempting to reduce this backlog, however, the Fish and Wildlife Service will be in competition with all other high priority federal programs within the total budget ceilings established each fiscal year by the President and the Congress in accordance with Public Law 93-344.

INCREASED PUBLIC USE

During the 1930 to 1960 period, public demand for outdoor recreation began to accelerate nationwide. To help accommodate this demand and respond to changing public attitude, refuges—formerly viewed as inviolate sanctuaries—were opened for selected recreational activities. Auto tour routes and nature trails were established; hunting programs were expanded, and a few visitor facilities were developed. Visits to national wildlife refuges tripled during the past 18 years, reaching about 23 million visits in 1975. This increased visitation has occurred more rapidly than the allocation of funds and manpower. As a result, some informational leaflets have become outdated, the refuge law enforcement effort has not kept pace with need to control increasing numbers of visitors, and public use facilities, such as roads, signs, boat launch ramps and parking areas have deteriorated.

GROWTH OF THE NATIONAL WILDLIFE REFUGE SYSTEM LAND BASE

National Wildlife Refuge System acreage has doubled during the past 18 years. Many refuges were purchased, some received through donation; others are overlays on the water resource development projects of other agencies, and many of the larger areas were withdrawn from the public domain. In many cases, sufficient funds, based on existing Fish and Wildlife Service standards, were not provided for the operation and management of these new areas. When budgets for new refuges were insufficient, funds were reprogrammed from other refuges in order to provide for the initial management needs on the new areas. The end result has been that funding of all refuges involved has been maintained at a less than desired level.

INFLATION

Inflation has had some impact on the ability of the Service to operate the system. Funding levels in recent fiscal years have either stayed the same or only increased slightly because the Service has placed a higher priority on such programs as the Biological Services program, the increased endangered species functions under the Endangered Species Act of 1973, and the Marine Mammal functions under the Marine Mammal Protection Act of 1972. The result of re-assessing our priorities is that funding in real terms has been about constant over the past four or five years. Compared with 1957, however, funding in constant dollars has actually doubled, which much more than equals the rate of increase in refuge areas (+36%) and acreage managed (+79%).

PERSONNEL CEILINGS

For the past several years, stringent limits have been placed on the number of permanent employees the Fish and Wildlife Service is authorized to employ. These ceilings have impacted severely and adversely on the refuge system, especially at the field level, in part because personnel have been diverted to other high priority programs, as mentioned above. As shown in table II, current field allocations total 843 permanent full-time personnel. Staffing has actually decreased by 6 percent in the last three years (Overall permanent staffing for Fish and Wildlife Service has increased 5 percent in the same period), while the number of field stations has increased by 10 percent. Wildlife surveys have been dropped; habitat improvement work has gone undone; reports needed by higher

levels of management for response to Service, Departmental and Congressional needs have been late and incomplete. There is less on-the-ground supervision of employees, contractors and refuge permittees. As a result, problems develop which could have been prevented.

NEW PROGRAMS

A variety of new programs, function, and activities—from a variety of sources—has impinged upon the refuge system and the Fish and Wildlife Service as a whole in recent years. Frequently, these have been high priority programs imposed without additional or sufficient funds or manpower ceilings to accomplish program objectives. This resulted in a reprogramming of both funds and ceilings to support the new responsibilities. Examples of the program are as follows:

Wilderness

Under the Wilderness Act of 1964, Congress has to date formally designated 36 wilderness areas which encompass 575,620 acres on 41 national wildlife refuges. Another 63 wilderness recommendations are before the Congress for consideration.

Endangered species

Forty-four endangered species of fish and wildlife are known to occur on 139 refuges located in 39 states. As a result of the Endangered Species Act of 1973, refuges now provide increased protection, monitoring and management to benefit these animals.

Youth conservation corps

In fiscal year 1975, 37 refuges sponsored YCC camps with a total enrollment of 851 enrollees. Although funds are provided for camp operation and enrollee salaries, the program still requires additional time for planning and supervision by refuge managers—time that would otherwise be spent on other aspects of refuge management.

Alaska Native Claims Settlement Act

Substantial time and money have already been spent in the planning and coordination phase required by this Act. Current Alaska refuge field effort in support of ANCSA requires about 30 to 35 percent of available staff time. Individual refuge efforts range from 25 to 50 percent. In the acquisition phase the refuge system would be increased by nine refuges encompassing 31.6 million acres.

National Environmental Policy Act

Commitments as a result of NEPA including environmental impact statement preparation as well as review of other statements have severely stressed the manpower and funding capabilities of the Service. With regard to refuges, the Division of Wildlife Refuges processes some 25 to 30 environmental impact statements annually on such subjects as land acquisition, construction, hunting regulations and wilderness areas. The Division also processes some 25 to 30 environmental assessment/negative declarations yearly. In addition, in response to court adjudication of various law suits, the Service has had to give priority attention to the preparation of environmental impact statements on a variety of activities as for example in *Sierra Club v. Morton*, Civil No. 1017-74 (D.O.C., 6 June 75). An environmental impact statement was required as a result of this court suit challenging operation of the National Wildlife Refuge System. Eight months of intensive effort have gone into preparation of the statement at a cost upon completion of some \$100,000, excluding salaries. Refuge as well as other personnel have to be diverted from their normal operating functions to comply with such court decisions. Funds must be reprogrammed to cover associated costs such as travel, per diem, overtime and printing.

TABLE II.—NWRS GROWTH, FUNDING AND PUBLIC USE,¹ 1957-75

Fiscal year:	Number of refuges of WPA ²	Acres ^{2,3}	Field man- power perma- nent full- time ⁴	O. & M. field alloca- tion ⁵	O. & M. deflated to 1957 dollar value	Con- struc- tion	Con- struc- tion dollar deflated to 1957 value	Visitor use	
								Number of visits	(x)Incre- ment From 1957
1975.....	368/116	32, 215	843	20, 025	10, 053	1, 049	522	⁶ 22, 500	3. 0
1974.....	356/116	29, 434	843	20, 082	11, 206	990	552	21, 538	2. 9
1973.....	341/114	29, 330	887	17, 808	11, 059	2, 376	1, 476	19, 588	7. 6
1972.....	329/113	29, 285	901	16, 020	10, 541	2, 463	1, 621	20, 249	2. 8
1971.....	332/113	29, 242	836	14, 290	9, 732	2, 178	1, 483	19, 205	2. 5
1970.....	325/110	29, 215	846	11, 740	8, 371	820	585	17, 870	2. 4
1969.....	321/110	27, 953	881	11, 078	8, 315	791	596	16, 216	2. 2
1968.....	312/109	27, 881	930	10, 459	6, 284	2, 222	1, 760	15, 221	2. 0
1967.....	303/108	28, 398	900	8, 317	6, 870	1, 985	1, 640	14, 528	1. 9
1966.....	297/105	28, 344	778	8, 924	7, 612	2, 650	2, 261	13, 803	1. 8
1965.....	286/97	29, 775	757	8, 722	7, 658	1, 468	1, 289	12, 906	1. 7
1964.....	282/88	28, 508	749	7, 174	6, 413	1, 728	1, 545	14, 020	1. 9
1957.....	270	18, 000	479	⁴ 5, 367	5, 367	(4)	7, 555	-----	-----

¹ Acres, dollars, and visits data are in thousands ((x)000).

² Refuges and acres columns are exclusive of wildlife coordination areas.

³ First WPA's (20) established in 1961.

⁴ Total fiscal year 1957 appropriation.

⁵ Assumed 20% reduction from total division allocation for FWS (WO, RO, and AO) support.

⁶ Visitor use projected at current rate of +1,000,000 per year.

⁷ Estimates for 1964-72 derived by reducing total Wildlife Refuge Division personnel complement by 130 RO and WO; based on known differences in fiscal year 1973. Estimate for 1957 based on reduction of 100.

TABLE III.—U.S. FISH AND WILDLIFE SERVICE, BUDGETARY ALLOCATIONS MADE TO NATIONAL WILDLIFE REFUGES FROM DIRECT APPROPRIATIONS

[In thousands of dollars]

Appropriation, budget activity	Fiscal year—					
	1971	1972	1973	1974	1975 (estimate)	1976 (estimate)
Management and investigations of resources:						
Wildlife refuges.....	14, 290	16, 020	17, 808	-----	-----	-----
Resource management:						
Habitat preservation.....	-----	-----	-----	183. 8	48. 8	2. 0
Wildlife resources.....	-----	-----	-----	15, 813. 9	¹ 16, 781. 0	² 17, 396. 8
Fish resources.....	-----	-----	-----	2. 5	5. 0	5. 0
Endangered species.....	-----	-----	-----	719. 9	740. 5	740. 5
Interpretation and recreation.....	-----	-----	-----	3, 361. 9	3, 712. 7	3, 712. 7
Total.....	-----	-----	-----	20, 082. 0	21, 288. 0	21, 857. 0
Construction and anadromous fish construction..	2, 178	2, 463	2, 376	990. 0	1, 049. 0	677. 0
Grand total.....	16, 468	18, 483	20, 184	21, 072. 0	22, 337. 0	22, 534. 0

¹ Includes approximately \$1,300 for rehabilitation.

² Includes approximately \$1,700 for rehabilitation.

2(C). The attached tables provide the following information: Table IV—Budgetary allocation to the Service from direct appropriations by activity; Table V—Summary of budgetary allocations by Washington Office, Regional Offices, Field Stations, and Other; and Table VI—Personnel—Permanent Positions.

TABLE IV.—U.S. FISH AND WILDLIFE SERVICE, BUDGETARY ALLOCATIONS MADE TO ENTIRE SERVICE BY TYPE OF OFFICE, FROM DIRECT AND PERMANENT APPROPRIATIONS

[In thousands of dollars]

Appropriation/office (use)	Fiscal year—					
	1971	1972	1973	1974	1975 (estimate)	1976 (estimate)
Resource management (formerly man- agement and investigations of re- sources and general administration expense):						
Washington office.....	4, 585. 2	6, 439. 4	7, 956. 3	11, 942. 5	¹ 20, 578. 0	² 25, 960. 0

TABLE IV.—Continued

Appropriation/office (use)	Fiscal year—					
	1971	1972	1973	1974	1975 (estimate)	1976 (estimate)
Regional offices.....	7,922.6	9,610.3	10,576.9	12,387.6	13,493.7	14,122.0
Field stations.....	48,147.5	51,163.4	55,655.6	61,664.5	69,668.1	72,349.2
Total.....	60,655.3	67,213.1	74,188.8	85,994.6	103,739.8	112,431.2
Construction and anomalous fish (formerly 2 separate appropriations):						
Washington office.....	74.5	67.0	69.7	71.0	90.2	133.9
Projects.....	18,659.1	21,254.0	14,345.3	5,234.1	21,146.5	6,593.3
Total.....	18,733.6	21,321.0	14,415.0	5,305.1	21,236.7	6,727.2
Migratory bird conservation account:						
Washington office.....	734.5	185.3	174.3	323.5	537.1	550.0
Land acquisition and reserve.....	14,699.4	14,091.3	11,670.3	12,443.1	11,869.1	11,450.0
Total.....	15,433.9	14,276.6	11,844.6	12,766.6	12,406.2	12,000.0
Federal aid in fish restoration:						
Washington office.....	447.2	424.4	422.3	487.5	424.5	430.0
Regional offices.....	394.9	441.8	413.4	554.6	563.1	746.8
Payments to States and reversions.....	13,081.9	13,436.8	14,717.3	13,976.1	16,893.5	17,242.3
Total.....	13,924.0	14,303.0	15,553.0	15,018.2	17,881.1	18,419.1
Federal aid in wildlife restoration:						
Washington office.....	1,489.7	1,453.6	1,384.3	1,075.7	1,680.7	1,727.6
Regional offices.....	781.2	858.3	904.8	1,000.4	1,402.5	1,972.4
Payments to States and reversions.....	30,535.1	34,392.1	40,810.9	44,363.4	54,799.4	55,000.0
Total.....	32,806.0	36,704.0	43,100.0	46,439.5	57,882.6	58,700.0
National wildlife refuge fund:						
Washington office.....	739.1	824.0	1,027.5	495.2	866.9	600.0
Payments to counties and reimbursements.....	3,542.9	3,507.7	3,088.1	4,124.8	3,512.1	4,000.0
Total.....	4,302.8	4,331.7	4,115.6	4,620.0	4,379.0	4,600.0

¹ Includes the following increases: \$3,800 GSA space costs; \$1,000 FTS and postage; \$4,300 biological services; \$900 endangered species.

² Includes the following increases: \$645 GSA space costs; \$3,137 biological services; \$1,700 endangered species.

TABLE V, U.S. FISH AND WILDLIFE SERVICE—SUMMARY OF BUDGETARY ALLOCATION BY WASHINGTON OFFICE REGIONAL OFFICES, FIELD STATIONS

Summary	Fiscal year—					
	1971	1972	1973	1974	1975	1976
Washington office.....	8,070.2	9,393.7	11,034.4	14,395.4	¹ 24,144.6	² 29,646.5
Regional offices.....	9,098.7	10,910.4	11,895.1	13,942.6	15,459.3	16,841.2
Field stations.....	48,147.5	51,163.4	55,655.6	61,664.5	69,668.1	72,349.2
Other.....	80,593.2	86,681.9	84,631.9	80,141.5	108,397.8	93,845.6
Total.....	145,855.6	158,149.4	163,217.0	170,144.0	217,669.8	212,682.5

¹ Includes the following increases: \$3,800 GSA space costs; \$1,000 FTS and postage; \$4,300 biological services; \$900 endangered species.

² Includes the following increases: \$645 GSA space costs; \$3,137 biological services; \$1,700 endangered species.

TABLE VI.—U.S. FISH AND WILDLIFE SERVICE—FULL-TIME PERMANENT EMPLOYMENT

	Total	Washington Office	Regional Offices	Field Stations
June 30, 1971.....	4,053	322	725	3,006
June 30, 1972.....	3,937	325	715	2,897
June 30, 1973.....	4,077	339	751	¹ 2,987
June 30, 1974.....	4,006	391	746	² 2,869
June 30, 1975.....	4,145	405	729	³ 3,011

¹ Including 28 in area offices.

² Including 41 in area offices.

³ Including 57 in area offices.

Note: Above data are approximate figures as our records were not maintained in this format. For June 30, 1971 and 1972, our breakdown between field and regional offices was not precisely available; however, the numbers of employees would be approximately in the same ratio as for the years of 1973 through 1975.

Recent increases in central office staff have been the result of establishing the Office of Biological Services, increased endangered species functions under the Endangered Species Act of 1973 and marine mammal functions under the Marine Mammal Protection Act of 1972.

3(A). In late 1971 the Service began to recognize the need to change its management approach and budget structure from one centered on organizational components (or processes of work), such as Wildlife Refuges, to one focused on major natural resource decision areas (or purposes of work) such as Migratory Birds. As a result, sets of resource goals categorized as *programs* became the basic building blocks of a new management system. Programs encompass a mix of diverse activities and functions, under a single responsible manager, aimed at accomplishing a specified goal or set of goals derived from the mission of the organization. The program management approach brings together all of the various inputs and processes of the Service, wherever they may occur, used to help achieve the objectives or a specified program. A program is national in scope, may utilize resources from more than a single appropriation, involves various organizational components, and will continue in operation over an extended period of time. Programs emphasize attainment of objectives in terms of basic responsibilities for national fish and wildlife resources. They concentrate on what is done and why, with a lesser emphasis on how it is done.

The budget structure was changed in 1974 with the concurrence of the House and Senate Appropriations Committees. With the shift from process-oriented to goals-oriented management, the Service began to use the concepts of management by objectives, or MBO, for developing ways to do business. In essence, MBO requires that organizations set objectives to establish and communicate direction; consider efficient and effective alternatives to meet objectives; implement plans which state target dates, responsibility points, required resources, and expected outputs; assess progress against the plans and take necessary corrective action; and, on completion, evaluate results against initial objectives. These concepts underlie the processes of both budget formulation and execution which, in a very real sense, help define implementation of the program management system. This system is new and still evolving; it is not yet a fully developed, polished instrument.

At the present time there are 16 programs which, in aggregate, sum to the total work of the Service and comprehend all of the financial and manpower resources available for work completion. Each of these programs has a relatively discrete set of objectives related to the Service mission and derived from legislation and other guidance.

For each program, a national program manager is responsible for planning program direction, establishing program goals and objectives, assigning resources to best achieve intended results, and checking to assure that objectives are attained. The national program managers consist of the Associate Directors for Environment and Research, Fish and Wildlife Management, and Federal Assistance, and the Assistant Director for Administration. The managers are accountable to the Director for timely and efficient achievement of objectives. In addition, the Director serves as the program manager for one program, Executive Direction.

As indicated above, Service goals are grouped in 16 programs. One example is the Endangered Species program. The national program manager for this program is the Associate Director for Federal Assistance. He sets the objectives and the priorities of work for the program. These stem not only from our specific responsibilities under the appropriate legislative acts, executive orders, or Depart-

mental policies, but also from consideration of both the constraints and opportunities imposed by time, talent or financial resources and, in this case, the status of specific endangered or threatened wildlife species or their habitats. In an organizational sense, inputs of Service research groups and the Divisions of Wildlife Refuges, Technical Assistance, Law Enforcement, Fish Hatcheries and Endangered Species contribute toward achievement of the objectives of the Endangered Species program. The program is the means for focusing those specialties on achieving program results.

Authority for program execution flows from the national program managers to the six regional directors, the Alaska Area Director, and the Deputy Associate Director for Research. These officials coordinate and execute their assigned responsibilities to accomplish objectives of the various programs with the resources made available for work of the field stations, such as fish hatcheries, refuges, and the like. Research stations are organized separately under the direction of the Deputy Associate Director for Research, who serves as the equivalent of a regional director. The regional directors translate or convert the program directions passed down by the program managers into specific work requirements which field stations accomplish for the programs.

Under the regional director, area offices (currently being proposed) supervise most of the work of the field stations in a two or three State geographic area. These offices have been established in Region 6 on a pilot basis and are proposed to be established in the other five regions during the next two years. Each office is directed by an area manager who is a line official reporting to the regional director. The area manager knows what is required in terms of program objectives and what resources are available to get the job done. As the official nearest the operational action, he is in the best position to determine how to make maximum use of available field force, regardless of organizational affiliation, to achieve expected program results.

Field stations, where the actual work is carried out, may perform operations related to a single program or on several at the same time.

The Bear River Refuge, for example, primarily performs work in support of the Migratory Bird program, while the Arkansas Refuge supports both the Migratory Bird and the Endangered Species programs.

The Service has also developed and is now installing a new program and financial information system to provide necessary accounting data to support program management. This system will make it possible to track costs by program, by fund source, or by organizational unit, thus providing service managers with the administrative data necessary to manage by programs.

The program management system differs significantly in several aspects from the previously used management system. Service budgets prior to fiscal year 1974 funded each type of organizational component by a separate budget activity. For example, there was a separate activity for wildlife refuges, fish hatcheries, river basin studies offices and similar divisional programs. By contrast, in the present system the budget activity or subactivity encompasses funding for all work related to a program—regardless of which organization does it. This approach groups what we do in a logical framework that can be directly related to specific Service objectives.

Under the previous management approach, attention was focused on individual organizational components since this was the way the budget was organized. Managers tended to concern themselves primarily with *how* things were done, largely within the limits of fairly narrow organizational boxes. A strong sense that resources (money and manpower) "belonged" to a specific organizational component existed. Organizational funding at the budget activity level curtailed management flexibility in shifting resources between organization units to reflect changing priorities and needs. Managers generally were very efficient in doing specific, particular jobs, but the larger questions of *why* things were done often were not addressed. Priorities within the various organizational components, valid as they might be for the special component, did not necessarily aggregate to the priorities of the Service as a whole. Moreover, centering attention on organizational interests did not facilitate the best decisions on using dollar and manpower resources in ways that provided the greatest possible payoff for fish and wildlife.

To sum up, the Service believes that the benefits of the program management system lie in the ability to directly tie in the Service's operations to national fish and wildlife objectives. Structuring management along program objective lines permits decisions to be made in the context of national resource needs. Priorities can be established more knowledgeably, and resources shifted more

readily to match priorities. Performance can be matched against objectives and the Service can more easily evaluate its accomplishments in behalf of national fish and wildlife resources under the program management system than under the former system.

3(B). Prior to implementation of the program management system, the National Wildlife Refuge System operated as a separate Service function that produced a mix of benefits. Benefits of the system were related to migratory and resident wildlife, endangered species, public use of wide variety, etc. Each refuge was funded on the basis of need and available resources, together with the output of benefits that it produced.

Under program management, benefits of the refuge system are aligned with benefits of other Service entities. For example, the migratory bird benefits of the refuge system are included with those from law enforcement, research and other Service entities. The combined activities which produce these benefits are called programs, in this example, the "Migratory Bird Program." With certain exceptions, all Service activities involving migratory birds are included in this program. Such grouping allows better control (management) of Service activities which are interrelated and, in some cases, interdependent.

Programs managers provide funds and position ceilings to regional directors, together with specific advice on work to be accomplished. Regional directors have latitude, within constraints imposed by the Appropriation Committees, to allocate program funds and positions among the activities in their regions that produce program benefits. A problem may develop for the refuge system when funding is inadequate to cover all program activities, and decisions must be made on which of them can be curtailed with least adverse impact on the Service's national program. The problem is complicated when a single activity is financed by more than one program, one of which may be inadequately funded. Conflict in policy may develop between programs on a specific refuge, and uneven workloads may be assigned. These are the kinds of problems which can and should be solved at the lowest possible regional level, or brought to the program manager's attention.

In summary, the impact of the program management system has been to focus more attention on *Service* goals and objectives than on those of its individual components, including the National Wildlife Refuge System. This is based on a belief that the benefits of the whole system (Fish and Wildlife Service) are greater than the sum of its parts, that the benefits of one part must be weighed against those from other parts in arriving at management decisions, and that such competition for resources is healthy in producing a lean, responsive public organization.

4(A). As a result of the institution of the Administration's Federal Assistance Review (FAR) program, the Fish and Wildlife Service was asked to establish an additional, or sixth, region with headquarters offices in Denver, Colorado. The new region, created in July 1972, was established by realigning the boundaries of adjacent regions in conformance with FAR guidelines. The resulting region includes the States of Colorado, Utah, Wyoming, Montana, North Dakota, South Dakota, Nebraska, Kansas, Iowa, and Missouri.

In setting up the staff for the new regional headquarters, the Service secured approval of the Department to create a relatively small regional headquarters and to manage the operations of the Service through area offices, of which five were established.

This structure was designed to move decisionmaking associated with implementing programs to the field level, to provide close cooperation and coordination between State agencies and the Service, and to provide the mechanism for the most efficient and effective use of the Service's manpower and dollar resources to do on-the-ground work in support of the Service's programs.

These were headquartered in Salt Lake City (for Utah and Colorado) ; Billings, Montana (Montana and Wyoming) ; Bismarck, North Dakota (North Dakota) ; Pierre, South Dakota (South Dakota and Nebraska) ; and Kansas City, Missouri (Kansas, Missouri, Iowa) .

Each of these was provided with a small staff under the direction of an area manager, responsible to the regional director in Denver, and in charge of all Fish and Wildlife Service operations in his area, except for research which is centrally supervised by the Washington Office and law enforcement which is accountable to the regional director.

In addition, the Service developed for the Denver region a sophisticated and responsive planning, budgeting, accounting, and management information system, designed specifically for use in support of this concept. This system was

created to provide for area managers the kind of administrative flexibility necessary to enable them to use Service personnel and resources to do the job assigned to them.

Each of the area manager jobs was filled by a skilled and experienced employee, each of whom had demonstrated an unusual ability to manage people and money effectively and to deal well with people, in and out of the Service.

In practice, the area manager lays out his annual work plan in concert with his own key staff and each refuge or hatchery manager or other functional supervisor knows what will be required of him that year and how much money he will have to devote to the job. This plan is based on guidance provided by the Washington and regional offices. The area manager retains the authority to shift funds and man-years—within predetermined limits—to account for variations in weather, water conditions, emergency or unforeseen situations, and the like, to enable him to achieve his goals. For instance, if there is a need to make minor emergency repairs at one refuge, the area manager can shift refuge funds to achieve this repair, if, in his judgment, that repair is necessary to the proper attainment of that refuge's objectives and the amount of funds to be shifted is relatively minor. More importantly, he is able to make maximum use of the skills of his field force. Maintenance personnel at one hatchery can be assigned to another station (refuge or hatchery) to do repair work or to conduct planned maintenance. The accounting system employed makes it possible to charge these activities to the proper account, thus assuring that funds intended for refuge maintenance are spent for that purpose, even though a hatchery maintenance employee may be used to do the work. Or, if there is a need to conduct a review of a project requiring a Corps of Engineers permit, the field reconnaissance of the project may be assigned to a refuge biologist stationed near the project. This, too, can be done by charging the costs to the Ecological Services funding, thereby creating no drain on the individual refuge account.

We have found this approach to resource management, as practiced in our relatively new region 6, to be particularly effective and successful. It has resulted in more efficient management and has generally improved employee performance by getting everyone involved in the whole spectrum of things the Service does. We find an improved relationship between the Service and State agencies, and a more effective relationship between the Service and the general public.

4(B). The Denver Regional Office (region 6) was established on January 3, 1972, with a nucleus staff of three people. Their job was to set up an organization of regional staff needs and establish the area office complexes (5). Funds were provided by the Washington Office to support the operation of these three people for the remainder of fiscal year 1972.

Fiscal year 1973 funding was provided in the amount of \$1,354,000 to hire staff for the regional office and for five area managers. These funds were taken from the parent regions 1, 2 and 3. On January 1, 1973, region 6 took over the operations of all field stations within the ten State area. However, funding of the field stations remained with the parent region for the remainder of the fiscal year 1973.

Fiscal year 1974 was the first year region 6 had complete funding for all activities within the region. Fiscal year 1974 was also the start of the Management and Financial System in region 6, financed by assessment of all activities in the region. Approximately \$35,000 were assessed the wildlife refuge program. These funds were taken percentage-wise from the wildlife resource funds available to the five area offices. The net result at each of the field stations was a loss of about \$1,000.

Until fiscal year 1974, no direct cuts were made in refuges in region 6. What resulted in fiscal year 1974 and fiscal year 1975 was a matter of no increase in funding over subsequent years which then triggered the need to make hard core management decisions such as operation of refuge complexes and eliminating low priority activities in order to sustain higher priority programs. The following is what resulted insofar as personnel shift in the refuge system since fiscal year 1972.

In establishing region 6, the area offices made a review of current needs under the new organizational structure. First we identified how personnel in general could be better utilized under a program concept as opposed to more narrow divisional lines, and second, how to realign position needs in keeping with priority workloads. This later resulted in the elimination or redistribution of eight positions considered, in light of funds and position limitations at that time, excess at eight refuge field stations and eight positions through the establishment of four major refuge complexes.

The one position loss at each of eight field stations was brought about as positions were vacated—by retirement, death of employee, or transfer. No personnel actions were taken to fill the vacancies.

Four major complexes were established in North Dakota and Nebraska. In North Dakota the Arrowwood complex contained Valley City Wetlands, Long Lake Refuge, Slade Refuge along with Arrowwood as the central office for the complex. By better personnel utilization, four GS positions—grades 5 through 12—were not replaced. Approximate savings in dollars under complex management were \$30,000.

Devils Lake complex placed Devils Lake Wetlands Management Office over Sullys Hill Refuge and the newly established Lake Alice Refuge. This led to more effective management but was not a major savings in manpower or money.

The third complex was established in fiscal year 1974. This action placed the Valentine Refuge under the supervision of the project leaders at Fort Niobrara Refuge in Nebraska. A savings of two ceilings and approximately \$26,000 resulted.

4(C). On August 25, 1975, the Service secured Departmental clearance to apply the Area Office concept nationwide. This will involve the establishment of 13 Area Offices (in addition to the five in the Denver region) throughout the Nation. These will be headquartered in the cities listed in the attachment and serve the states indicated. This change in the Service organization is warranted not only because of the success demonstrated in the Denver region, and the evident improvement in effectiveness and efficiency, but also as a move toward a longer range objective of streamlining the regional and Washington offices to gain personnel positions to apply to field level operations. A major step in this direction can be brought about by effecting the Area Manager concept throughout the Service.

The staffs of the Area Offices will be small, averaging about five to seven people depending on the complexity of the Service programs in any given area. Since a part of the Area Manager's responsibility is to provide administrative services (accounting, purchasing, etc.) for field stations, there will be a requirement for a base level of personnel in the Area Office, but this will be more than offset by obviating the need for the same kinds of personnel at each of several field stations. The net result in the Service staffing pattern will be more efficient utilization of field positions and smaller regional office staffs.

These positions will be filled from within the Service on a competitive basis. We propose to begin the change at the earliest possible date and to have the change completed by January 1, 1977. Funding will be accomplished with monies presently available to the Service and will involve somewhere in the neighborhood of \$634,000, exclusive of salaries (the exact amount, of course, depending upon the number and distance of moves involving personnel transfers, etc.). The first-year costs of setting up the offices will make the initial cost greater than what is expected during continued operation.

The initial cost estimate includes \$134,000 for transfers to realine the six regional offices and the Alaska Area Office and \$500,000 to put 13 Area Offices into operation. The impact of these initial costs on ongoing Service operations will be minimized by spreading implementation over two fiscal years. In some locations the number of Service personnel at an Area Office location may exceed the five to seven complement if field operations at those locations are consolidated with the Area Office for reasons of space management and public access.

A share of the funding and personnel requirements will be obtained from all operational areas of the Service. The impact will be about six-tenths of one percent of the Service's entire Resource Management appropriation, amounting to less than \$160,000 from refuge administration and operation. Since the change will be phased over two years, the impact in each year will be even less, probably no more than an average of \$15,000 to \$20,00 from refuges in each region in FY 1976 and 1977. The amount of work temporarily deferred by this action is not expected to be significant.

Based on our experience in Region 6, we expect that subsequent gains will more than offset the initial deferrals. We do not anticipate any significant impact on refuges as a result of this reorganization. In the long term this approach will reduce the number of administrative personnel required in each regional office. It will allow the concentration of manpower and dollar resources to all Service field operations where it is needed to get the job done.

LOCATION OF PROPOSED AREA OFFICES AND STATES ADMINISTERED

*Region 1*¹

Sacramento, Calif.—California, Nevada.
Boise, Idaho—Idaho, Oregon.
Olympia, Wash.—Washington.

Region 2

Phoenix, Ariz.—Arizona, New Mexico.
Austin, Tex.—Oklahoma, Texas.

Region 3

East Lansing, Mich.—Indiana, Michigan, Ohio.
St. Paul, Minn.—Illinois, Minnesota, Wisconsin.

Region 4

Jacksonville, Fla.—Florida, Georgia, Puerto Rico, Virgin Islands.
Jackson, Miss.—Alabama, Arkansas, Louisiana, Mississippi.
Asheville, N.C.—Kentucky, North Carolina, South Carolina, Tennessee.

Region 5

Annapolis, Md.—Delaware, Maryland, Virginia.
Concord, N.H.—Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.
Harrisburg, Pa.—New York, New Jersey, Pennsylvania, West Virginia.

5(A). Attached is a copy of a report entitled "Migratory Waterfowl Habitat Preservation" describing accomplishments during the accelerated wetlands acquisition program and future wetland objectives and plans. The following data provides an evaluation of the acquisition program to date, and a description of the goals and other criteria developed to set acquisition program priorities:

EVALUATION OF FISH AND WILDLIFE SERVICE WATERFOWL HABITAT ACQUISITION PROGRAM TO DATE

Basic Authorities for Waterfowl/Wetlands Acquisition Program

Several broad statutes authorize the Fish and Wildlife Service in carrying out its efforts to acquire wetlands and other waterfowl habitats. The principal pieces of legislation are listed and described below.

MIGRATORY BIRD CONSERVATION ACT (1929)

The Migratory Bird Conservation Act provide the basic authority for acquisition of areas for use as inviolate sanctuaries for migratory birds, including all migratory waterfowl and other game and nongame migratory bird species. The National Wildlife Refuge Administration Act of 1966 modified the inviolate sanctuary provision to allow up to 40 percent of any area acquired as an inviolate sanctuary to be opened for hunting of migratory game birds. The Act also established a Migratory Bird Conservation Commission, consisting of the Secretary of Interior as Chairman, Secretary of Transportation, Secretary of Agriculture, two members of the Senate, and two members of the House. The Commission was established to consider and pass upon any area recommended by the Secretary of Interior for purchase or rental under the provisions of the Migratory Bird Conservation Act, and to fix (approve) the price paid for such areas.

MIGRATORY BIRD HUNTING STAMP ACT (1934)

As amended in 1958, the Act authorized the Secretary of Interior to acquire small wetland and pothole areas, interests therein, and rights-of-way to provide access thereto. Such small areas are designated Waterfowl Production Areas and may be acquired without regard to the limitations and requirements of the Migratory Bird Conservation Act.

The Act provided a source of funding for carrying out the intent of the Migratory Bird Treaty Act (1918) and to implement provisions of the Migratory Bird Conservation Act.

¹ Alaska status unchanged. Currently administered as area office. Hawaii will for the present be administered by Regional Office, Portland, Oreg.

FISH AND WILDLIFE ACT OF 1956

Among other provisions, the Act directs the Secretary of Interior to take such steps as may be required for the development, management, advancement, conservation, and protection of wildlife resources through research, acquisition of refuge lands, development of existing facilities, and other means.

LAND AND WATER CONSERVATION FUND ACT OF 1965

The LWCF Act provides a source of funds, (1) to the States for planning, acquiring, and developing needed land and water areas and (outdoor recreation) facilities and, (2) for Federal acquisition and development of certain lands and other areas. Four major categories of habitat have been acquired by the Fish and Wildlife Service to date using the Land and Water Conservation Fund including: (1) Critical habitat for endangered species, (2) lands adjacent to existing National Wildlife Refuges suitable for incidental fish and wildlife-oriented recreational development or for the protection of natural resources, (3) areas authorized for purchase by special Federal legislation in the national interest, and (4) inholdings of land designated as wilderness area, authorized under the Wilderness Act of 1964. Lands acquired for endangered species, wildlife-oriented recreation, or areas purchased under special legislation often contain wetlands and other waterfowl habitat, thus exhibiting protection of multiple values in the national interest.

Historical perspective

The Fish and Wildlife Service and its forerunners have been engaged in acquisition of land and preservation of habitat for waterfowl and other migratory and nonmigratory bird species since 1903 when Pelican Island National Wildlife Refuge was established by executive order in Florida to protect brown pelicans from decimation by plume hunters. In 1918, the Federal government was given primary responsibility for the protection and proper management of migratory birds with ratification of the Migratory Bird Treaty with Great Britain (for Canada). Similar treaties have since been signed with Mexico (1936) and Japan (1973). The Federal responsibility derives from the migratory nature, national and international in scope, of this resource.

Historically, refuges have been acquired for various purposes; one overriding factor, however, has been protection of the birds themselves. The inviolate sanctuary language of the Migratory Bird Conservation Act, the basic authority for migratory bird refuge acquisition, is testimony to this historical concept. Preservation of critical habitat has often been only incidental. Of more recent origin is the concept, solidly based on factual data, that protection of habitat-ecosystems upon which wildlife species are dependent for their survival is the most important element in the perpetuation of game and nongame species alike. The Waterfowl Production Area program, authorized in 1958, has been an effort to protect extensive waterfowl breeding habitat in a relatively natural state including that in private ownership. The destructive pressures on wetlands and other habitat required for the perpetuation of waterfowl suggest the need to extend the ecosystem preservation precedent beyond Waterfowl Production Areas to other important habitats throughout the four flyways.

A brief synopsis of major events leading up to the Service's present habitat acquisition program is presented below:

1930's—A Presidential task force estimated that 7.5 million acres of intensively managed habitat (upland and wetland) would be necessary in public ownership to meet the requirements for protecting a basic breeding stock of ducks and geese large enough to meet the demands of people at that time. This estimate was based upon knowledge of primarily large inland marsh areas where the effects of drought during the 1930's were most evident. No comprehensive inventory of wetlands had yet been conducted and no coordinated census of waterfowl was carried out to determine actual numbers of waterfowl dependent on habitat of the United States. The estimate also assumed a leveling of the Nation's human population at 150 million. The number of waterfowl hunters at that time was approximately 600,000, or about 25 percent of the number in 1974.

1954—According to various Federal documents, the minimum acreage of habitat needed under intensive management by State and Federal agencies to maintain the high waterfowl population levels of the mid-1950's was increased to 12 million acres. This estimate assumed the majority of small wetlands re-

quired for waterfowl production in the glaciated prairie pothole region would remain intact in private ownership.

1956—Publication of the first comprehensive national wetland inventory indicated that of approximately 80 million acres of wetlands in the United States, 22.4 million acres were of moderate or high value to waterfowl. This publication stated the need for 12.5 million acres of intensively managed habitat under State and Federal ownership. Again, it was assumed that a major portion of the small wetlands in the prairie pothole region would remain intact under private ownership.

1959—A national master list of key waterfowl habitat units considered to be most important to maintaining the waterfowl resource and the most vulnerable at that time was developed jointly by the Fish and Wildlife Service and waterfowl flyway councils. A split of responsibilities was agreed upon for placing 12.5 million acres under public ownership and intensive management as follows:

	<i>Acres (millions)</i>
Federal:	
Controlled in 1959.....	3.5
Additional to be acquired.....	4.5
Total Federal responsibility.....	<u>8.0</u>
State:	
Controlled in 1959.....	2.0
Additional to be acquired.....	2.5
Total State responsibility.....	<u>4.5</u>
Total	<u>12.5</u>

The larger Federal allocation reflects the Service's paramount responsibility for maintaining migratory bird resources.

The Federal initiative shifted to preservation of waterfowl breeding habitat as wetland drainage in the glaciated prairie pothole region continued unabated. The 1958 amendment to the Migratory Bird Hunting Stamp Act facilitated the shift by authorizing the Waterfowl Production Area program in which small wetland and pothole areas, and interest therein, are acquired.

1961—In response to expanding wetland drainage in the glaciated prairie pothole region and other areas, the Wetlands Loan Act was passed. The Act, which authorized a \$105 million interest-free advance to the Migratory Bird Conservation Account, provided the impetus for the Fish and Wildlife Service accelerated wetlands acquisition program. The funds authorized are to be used in combination with annual migratory bird hunting stamp receipts to offset or prevent the serious loss of important wetlands and other waterfowl habitat. The loan authority scheduled initially to expire June 30, 1968, was subsequently extended to the end of fiscal year 1976, or September 30, 1976 after which time the appropriated portion of the loan advance is to be repaid to the Treasury using 75 per cent of annual migratory bird hunting stamp receipts.

Accelerated Wetlands Acquisition Program Fiscal Year 1962-76

Provided with a source of funding to carry out an accelerated acquisition program, using loan fund appropriations and hunting stamp receipts, an interim program objective of 2.5 million acres was established. The anticipated funding level required a portion (1.22 million acres) of the total Federal objective of adding 4.5 million acres to remain unscheduled during the accelerated program. Additionally, 780,000 acres of habitat provided by Federal water resource development projects were considered a part of the total Federal responsibility. Acreage objectives and acquisition accomplishments since FY 1962 are presented in Table 1. Of the 2.5 million acre accelerated program objective, 750,000 acres were allocated to traditional Refuges throughout the four flyways and 1,750,000 acres to Waterfowl Production Areas (WPA), principally in the prairie pothole region. The WPA objective was further divided into 750,000 acres of wetland and upland habitat acquired in fee title and 1,150,000 acres of wetlands protected by wetland easements which prohibit their being drained, filled, leveled, or burned.

TABLE 1.—ACCELERATED WETLANDS ACQUISITION PROGRAM, ORIGINAL OBJECTIVES AND ACCOMPLISHMENTS, FISCAL YEARS 1962-76

Organization or category	Acreage objective	Anticipated accomplishment fiscal year 1962-76	
		Number	Percent
Fish and Wildlife Service:			
Refuges:			
Breeding.....	250,000	143,000	57
Migration.....	175,000	60,000	34
Wintering.....	325,000	205,000	63
Total refuge.....	1,750,000	408,000	54
Waterfowl production areas:			
Fee.....	600,000	383,000	64
Easement.....	1,150,000	1,107,000	96
Total waterfowl production areas.....	2,175,000	1,490,000	85
Total Fish and Wildlife Service.....	2,500,000	1,898,000	76
Federal water resources projects.....	3,780,000	4,200,000	26
Unscheduled.....	5,122,000	0	-0
Total.....	4,500,000	2,098,000	47

¹ Based on lists of habitat areas considered most essential to sustain the resource at desired levels and species composition, taking into account the vulnerability of each habitat type in 1959.

² Represents 75 percent of wetlands most important to breeding waterfowl believed to have existed in 1958 at program authorization in the Dakotas and Minnesota.

³ Based on project plans as of 1962.

⁴ Based on lists of habitat areas believed necessary to sustain the resource and also provide significant opportunities for waterfowl-oriented public use.

⁵ Habitat comprising a portion of the 12,500,000 acre national objective (8,000,000 Federal objective) but of lower priority than the allocation of available funds under the accelerated program.

The Refuge objective included the projects contained in the national master list compiled by the Service and flyway councils in 1959. The WPA objective was intended to reflect preservation of 75 percent of the most important wetland acreage in the primary waterfowl production habitat of the Dakotas and western Minnesota, and a minimal acreage of upland nesting habitat required by ground nesting waterfowl such as mallards. High quality waterfowl production habitat in Montana, Nebraska and Wisconsin was subsequently added to the program with no concurrent revision of WPA acreage objectives. Additionally, improved wetland inventory data collected in the Dakotas and Minnesota after the program was underway revealed that a substantially larger acreage of wetlands existed than originally estimated, indicating that WPA objectives should be increased by at least 1,000,000 acres.

Each migratory bird refuge acquired under the authority of the Migratory Bird Conservation Act must first be approved by the Migratory Bird Conservation Commission (MBCC). Each of these Refuges is programmed to produce benefits at various stages of refuge acquisition and development. Delays in purchasing inholdings may, if key habitat was not acquired initially, impair the ability of any Refuge to realize its optimum level of benefits. Within a delineated Refuge boundary, however, there are a number of tracts not particularly crucial for achieving the specific objectives for which the land is acquired. Administratively, the management of the Refuge as an entity may be improved by bringing such tracts under Service control, but will not, by virtue of their being inholdings be considered as highest priority for acquisition. Rather, they are considered on a case by case basis on the critical need for achieving program objectives. The available acquisition funds may thus be applied in a more cost effective manner. As of February 1975, the backlog of projects approved by the MBCC was 46 projects totaling 88,041 acres which will cost an estimated \$32,122,000 to acquire.

Initially the 2.5 million acre accelerated program objective was to have been completed within 7 years at a cost of approximately \$150 million, including \$105 million in loan fund advances and the remainder made up of migratory bird hunting stamp receipts. The loan authorization was extended to 15 years when less than 50 percent of the objective had been achieved and a similar percentage of the loan had been appropriated near the termination of the initial 7-year period. At the expiration of the current loan authorization in FY 1976, approximately 1,898,000 acres, or 76 percent of the accelerated program objective, will

be acquired at a cost of \$104 million in hunting stamp receipts and \$85.9 million in loan advances. There will remain \$19.1 million of the loan unappropriated and approximately 602,000 acres of the original 2.5 million acre objective to be preserved.¹

MAJOR PROBLEMS ENCOUNTERED IN ACCELERATED PROGRAM

Impact of land cost escalation

A principal factor preventing the accomplishment of acquisition objectives has been the recent rapid escalation of land prices combined with lower than anticipated funding levels which resulted in a considerable delay in the acquisition period. An example of the impact of extending the program over a 15-year period on achieving objectives is seen in the National Index of Average Farm Real Estate Values which increased 123 percent during the period 1962-1973. This index is the standard used by the Service to project program costs. If the current trend continuous through FY 1978, the purchasing power of the dollar for agricultural land (similar in price to habitat acquired for waterfowl) will be less than 25 percent of its 1961 value. Table 2 presents annual accomplishments, land costs (excludes administrative overhead), and average price paid per acre during the period FY 1962-1975. The data in Table 2 indicate a 226 percent increase in average land costs for Refuges between FY 1962 and 1975, a 306 percent increase in average price for WPA fee purchases, and 334 percent increase in average wetland easement costs between FY 1964 and 1975 (FY 1962 and 1963 were excluded from the calculation since they are believed to be atypical of prices after that initial period of WPA program implementation).

Table 3 presents an analysis of the effects of inflation in terms of "acres lost" (those which could have been acquired if no inflation had occurred) and loss of purchasing power of the dollar, using 1961 as the base year for calculating decreases in purchasing power. During the period FY 1962-1975, an estimated 1,051,396 acres were "lost" as a result of inflation. Stated another way, 2,857,546 acres could have been acquired instead of the 1,806,150 acres that were purchased, if no inflation occurred. Based on these data, the original 2.5 million acre objective would have been achieved in FY 1974 if the 1961 value of the dollar had continued through 1974. Table 4 presents a summary of appropriation during the accelerated program.

TABLE 2.—ACCOMPLISHMENTS, LAND COSTS, AND AVERAGE COSTS PAID PER ACRE DURING THE FISH AND WILDLIFE SERVICE ACCELERATED WETLANDS ACQUISITION PROGRAM, FISCAL YEARS 1962-75

[Total costs in thousands of dollars, costs per acre in dollars]

Fiscal year	Waterfowl production areas								
	Refuges			Fee			Easement		
	Acres	Cost	Average per acre	Acres	Cost	Average per acre	Acres	Cost	Average per Acre
1962	18,915	\$2,289	\$120.99	11,682	\$361	\$30.88	4,968	\$31	\$6.15
1963	63,253	8,483	134.11	12,554	444	35.36	12,774	82	6.43
1964	49,151	7,400	150.66	16,668	997	59.83	71,575	761	10.63
1965	49,266	8,486	162.32	27,089	1,943	71.73	177,796	2,079	11.69
1966	42,817	7,424	173.38	36,739	2,569	69.92	146,031	1,678	11.49
1967	24,291	5,649	232.36	30,676	2,036	66.36	106,954	1,376	12.87
1968	43,114	7,389	171.38	22,531	1,772	78.64	87,770	1,307	14.89
1969	26,960	5,608	208.02	24,618	2,162	87.82	61,354	951	15.49
1970	16,759	3,714	221.59	42,427	3,855	90.87	100,411	1,750	17.43
1971	21,601	4,904	227.00	50,422	5,365	106.41	60,258	1,481	24.57
1972	18,166	5,153	283.65	32,761	3,840	117.20	41,349	1,235	24.06
1973	8,914	2,932	328.89	26,243	3,405	129.75	58,289	1,506	25.84
1974	21,610	10,906	504.66	13,508	3,007	222.62	57,149	1,648	28.84
1975	3,982	1,569	393.99	17,626	4,285	243.13	35,129	1,622	46.16

¹ A bill to add \$10 million from the loan fund to the migratory bird conservation account in FY 1976 has been passed by the House of Representatives. If this amount becomes available to the Service, funding and accomplishments will be revised accordingly.

TABLE 3.—EFFECTS OF INFLATION ON THE ACCELERATED WETLANDS ACQUISITION PROGRAM, FISCAL YEARS 1962-75

Fiscal year	Acres acquired	Total obligations	Based upon 1961 values		Loss of acres due to inflation	Loss in purchase power
			Acres which could have been acquired	Purchase power related 1961 dollar		
1962	35,565	\$4,278,163	37,343	\$4,074,441	1,778	\$203,722
1963	88,581	10,513,468	97,439	9,557,698	8,858	955,770
1964	137,394	11,657,536	160,751	9,963,706	23,357	1,693,830
1965	254,151	14,720,304	315,147	11,871,212	60,996	2,849,092
1966	225,587	14,164,622	302,287	10,570,613	76,700	3,594,009
1967	161,921	11,757,806	231,547	8,222,242	69,626	3,535,564
1968	153,415	13,218,858	233,191	8,696,617	79,776	4,522,241
1969	112,932	11,424,253	180,691	7,151,408	67,759	4,290,845
1970	159,597	12,744,819	264,931	7,677,602	105,334	5,067,217
1971	132,281	15,433,861	226,201	9,025,650	93,920	6,408,211
1972	102,276	14,276,603	189,211	7,717,083	86,935	6,559,520
1973	93,446	11,844,610	199,974	5,534,864	106,528	6,309,746
1974	92,267	20,061,621	246,353	7,513,716	154,086	12,547,905
1975	56,737	12,034,366	172,480	3,958,673	115,743	8,075,693
Total	1,806,150	178,148,890	2,857,546	111,535,525	1,053,396	66,613,365

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TABLE 4.—ACCELERATED WATERFOWL LAND ACQUISITION PROGRAM, MIGRATORY BIRD CONSERVATION FUND, HISTORY OF APPROPRIATIONS—FISCAL YEARS 1962-75

Fiscal year	Wetlands loan	Duck stamp receipts	Total
1962		\$4,094,874	\$4,094,874
1963	\$7,000,000	3,418,638	10,418,638
1964	10,000,000	4,559,564	14,559,564
1965	8,000,000	4,622,688	12,622,688
1966	7,500,000	4,684,908	12,184,908
1967	6,000,000	5,385,069	11,385,069
1968	7,500,000	5,825,238	13,325,238
1969	7,500,000	5,562,303	13,062,303
1970	5,800,000	6,107,280	11,907,280
1971	7,500,000	7,181,256	14,681,256
1972	7,500,000	7,351,425	14,851,425
1973	7,100,000	10,734,313	17,834,313
1974	3,500,000	10,219,685	13,719,685
1975	1,000,000	11,091,133	12,091,133
Total	185,900,000	90,838,374	176,738,374
1976 (budget)		² 12,000,000	12,000,000

¹ \$19,100,000 remaining in the \$105,000,000 wetlands loan authorization, which expires after fiscal year 1976.

² Estimated. Actual receipts will probably be \$11,000,000.

IMPROVED WETLAND INVENTORY DATA

The last comprehensive national wetland inventory data, on which much of the accelerated acquisition program was based, was conducted in the mid-1950's. Extremely small samples were used to estimate wetland acreages and no statistically designed sampling frame was established. The results of the inventory were highly conservative in some sections of the nation, but particularly so in the glaciated prairie pothole region. Based on these conservative data, the Waterfowl Production Area objective, which was intended to protect 75 percent of the wetland acres most important to waterfowl production in the pothole region, was consequently placed at 600,000 acres in fee (including some 250,000 acres of wetland) and 1,150,000 acres of easement. In 1964, after the program was well underway, a new wetland inventory was conducted in the major prairie pothole counties of the Dakotas and Minnesota, using improved sampling design and techniques. The new inventory data indicated that approximately 2,900,000 acres of the most important wetland types existed in 1964. If average wetland loss rates are used to project the acreage present in 1961 when the accelerated program was initiated and objectives developed, an estimated 3,000,000 acres existed.

Assuming the goal to be preservation of 75 percent of the important wetland types, the WPA objective should be increased to 2,000,000 acres of wetland easements and 600,000 acres in fee including 250,000 acres of wetland. If similar types of waterfowl production habitat acquired in Montana, Nebraska and Wisconsin is added to the WPA objective, the new objective should be 2,750,000 acres rather than 1,750,000 acres.

GOALS AND OTHER CRITERIA DEVELOPED TO DETERMINE FUTURE
ACQUISITION PRIORITIES

During the past 18 months the accelerated acquisition program objectives have been critically reviewed and evaluated in an attempt to determine the direction the program should be taking. An initial step was taken to re-examine the 20-year standing 12.5 million acre national (State-Federal) objective and priorities. This review also looked at the interim 2.5 million acre Service objective, in the context of current Service policies, cost effectiveness, and contemporary land use trends which affect major waterfowl habitats. As a result of this evaluation, the Service has developed a tentative 10-year waterfowl/wetlands habitat acquisition plan. This plan was presented in testimony on H.R. 5608 to the House of Representatives Committee on Merchant Marine and Fisheries, Subcommittee on Fisheries and Wildlife Conservation and the Environment, held May 15, 1975. Basically, the 10-year proposal increases the accelerated acquisition objective from 2.5 million acres to approximately 3.8 million acres, of which 1.9 million acres will have been acquired by September 30, 1976 when the current Wetland Loan Fund authorization is scheduled to terminate. This leaves another 1.9 million acres to be preserved by 1986.

TABLE 5.—PROPOSED U.S. FISH AND WILDLIFE SERVICE MIGRATORY WATERFOWL HABITAT ACQUISITION PROGRAM, BY NATIONAL PRIORITY CATEGORY, FISCAL YEAR 1977-86

Priority	Flyway	Geographic location	Habitat type	Group/species	Primary habitat not protected by public agency	Minimum acres proposed for Fish and Wildlife Service preservation Fiscal year 1977-86 ¹	Estimate cost (1975 prices, millions of dollars)	
1	Central	Prairie Pothole (North Dakota, South Dakota, Montana)	Breeding	Canvasback, Redhead, ² Other ducks	1,000,000	³ 275,000 ⁴ 550,000	\$61.8 24.8	
2	do	do	do	do	do	do	do	
3	Mississippi-Pacific	Prairie Pothole (Minnesota)	do	All	200,000	³ 150,000	37.5	
4	Atlantic	California-Central Valley	Wintering	do	63,000	60,000	11.0	
5	do	Coastal (North Carolina to Massachusetts)	do	Black duck	50,000	40,000	11.5	
6	Pacific	Coastal California	do	All	70,000	60,000	24.4	
7	Mississippi	Mississippi Delta (primarily Arkansas, Mississippi, Louisiana)	do	Wood duck, Mallard	2,000,000	200,000	15.0	
8	Central	Coastal (New England, Texas, Laguna Madre)	do	All	350,000	100,000	13.2	
9	Mississippi-Pacific	Coastal (primarily Louisiana)	do	do	1,300,000	100,000	25.2	
10	do	Great Basin (Utah, Nevada)	Breeding	Redhead	60,000	40,000	10.9	
11	Mississippi	General (Wisconsin, Michigan, Iowa)	do	Ducks	100,000	100,000	24.6	
12	Atlantic	Coastal (Chesapeake Bay, Delaware Bay, Georgia, North Carolina, South Carolina, Florida)	Wintering	do	350,000	50,000	14.3	
13	Central	General (excludes glaciated prairie)	Breeding	do	250,000	100,000	14.1	
14	Pacific	Coastal (Washington)	Wintering	All	13,000	13,000	8.2	
15	do	Coastal (Oregon)	do	do	9,000	5,000	2.5	
Subtotal, categories 1-15							299.2	
Total							1,843,000	

16	Atlantic	Inland (primarily North Carolina, South Carolina, Georgia)	Wintering	Wood duck	2,000,000	7,350	4.3
17	Pacific	Inland (primarily California, Washington, Oregon, Idaho)	Breeding	Ducks	6,000,000	26,750	4.6
18	Atlantic	Inland (scattered bogs, ponds, etc. New England)	do	do	150,000		
19	Mississippi	Inland	Wintering	All	(⁴)	17,100	7.7
20	Pacific	do	do	do	10,000	6,750	3.6
21	Atlantic	Great Basin	Breeding	Geese	(⁴)	6,400	3.1
22	Atlantic	Inland (mostly Virginia south)	Wintering	All	300,000	2,650	.8
23	Central	Inland (Texas, Colorado, New Mexico, Oklahoma, Kansas)	do	do	(⁴)	1,900	.7
24	Pacific	Coastal (Oregon, Washington)	Migration	do	6,000	2,050	1.2
25	Atlantic	Coastal (primarily New Jersey to Maine)	do	do	100,000	8,300	3.1
Subtotal					8,566,000	73,250	26.1
26	Mississippi	Inland	Breeding	Geese	(⁴)		
27	Central	do	do	do	(⁴)		
28	do	Coastal	Migration	All	(⁴)		
29	Pacific	Inland	do	do	(⁴)	1,600	.4
30	Mississippi	Inland (Upper Mississippi and Illinois river valleys)	do	do	(⁴)	1,750	1.1
31	Atlantic	Inland	do	do	(⁴)	13,850	6.1
32	Central	do	do	do	(⁴)	13,600	6.5
33	All	do	Recreation	do			
Subtotal						30,800	14.1
Subtotal, categories 16-33					8,566,000	104,050	40.2
Grand total:							
Priority categories 1-15					5,815,000	1,843,000	299.2
Priority categories 16-33					8,566,000	104,050	40.2
Total, all categories					14,381,000	1,947,050	339.4
Administrative overhead							67.9
Total costs							407.3

1 Combined fee and, in some cases, easement. It is expected that some habitat shown in the lower priority categories (16-33), particularly those not yet approved by MRCC, will not be reserved by Fish and Wildlife Service during 10-yr period. Also, techniques other than fee purchase by Fish and Wildlife Service for maintaining habitat will be considered before Fish and Wildlife Service acquisition 1a.

2 Canvasback and redhead habitat acres for priority No. 1 are included in priority 2.
 3 Fee
 4 Easement
 5 Acreage undetermined.

Habitats which are believed to be most important to the maintenance of species and total population levels, and which are most vulnerable if no action is taken by the Service are placed among the top priority categories. Based on these principal considerations, high quality breeding and wintering habitats will be highest priority for Service acquisition. Aquatic environment, generally the most critical component of waterfowl habitat during the annual cycle, receive the greatest emphasis in the proposed program. Habitat utilized for only short periods during spring and fall migration is considered to be of lesser importance than either breeding or wintering areas and is reflected in the lower priority of the migration habitats in the national list. Additionally, provision of on-site waterfowl-related recreational opportunities for consumptive and nonconsumptive uses is considered to be a primary responsibility of the States and is given a low Service priority ranking. Further details on development of program objectives and priorities are included in the attached document entitled, "Migratory Waterfowl Habitat Preservation." It should be emphasized the goals presented in this proposal are short-range and interim in nature, based principally on expected habitat losses during the next 10 years. The goals do not reflect total waterfowl or wetland preservation needs.

In conjunction with the Service's proposed 10-year acquisition program, an extensive analysis was completed in order that the Administration could analyze the impact of the proposal on the President's economic program. The analysis, of necessity, concentrated on the top 15 priority categories since these represented substantial acreages of habitat not currently associated with on-going Refuge projects, whereas, those acres in categories 16-33 all represent inholdings of existing Refuges. Following are general comments and conclusions drawn from the Service's analysis:

1. While the Service's waterfowl habitat acquisition program has in the past been construed by some to be primarily in support of waterfowl hunting, the analysis clearly demonstrates that many segments of the general public receive substantial benefit from the perpetuation of waterfowl and preservation of their wetland habitat. Table 7 provides an overview of benefits provided by wetlands in the top 15 priority categories.

2. Numerous independent efforts and incentives are operating which contribute to wetland preservation (Table 8). However, sizeable losses of wetlands, in excess of 250,000 acres annually in the top 15 priority categories in recent years, continue to deplete the habitat base despite the various preservation efforts (Table 9). Therefore, Service acquisition while other methods of preservation will be considered first in each case, is clearly desirable and necessary to maintain the most critical habitats.

3. Program priorities focus acquisition efforts on the most productive and most threatened habitat, resulting in the most effective use of available funds to attain habitat preservation objectives.

TABLE 6.—MIGRATORY WATERFOWL LAND ACQUISITION PROGRAM, ORIGINAL AND REVISED FEDERAL GOALS
[Thousands of acres]

	Original ¹ goal	Revised goal	Acquired 1962-76	To be acquired 1977-86	Percent acquired of revised goal
Refuges:					
Breeding.....	250	400	143	257	36
Migration.....	175	100	60	40	60
Wintering.....	325	900	205	695	23
Total.....	750	1,400	408	992	29
Waterfowl production areas:					
Fee.....	600	800	383	417	48
Easement.....	1,150	1,650	1,107	543	67
Total.....	1,750	2,450	1,490	960	61
Total.....	2,500	3,850	1,898	1,952	49
Unscheduled.....	1,220				
Federal water resource projects.....	780	2,500	200	300	
Total.....	4,500	4,350	2,098	2,252	

¹ Includes acreage to be acquired in addition to that already preserved by Fish and Wildlife Service and Federal water resource projects at the initiation of the accelerated program, within the overall 12,500,000 acre State and Federal national goal, excluding Alaska.

² Expected to change significantly as Federal agencies utilize authorities for nonstructural approaches provided by the Water Resources Development Act of 1974.

Revised objectives and program priorities were developed initially according to species, where applicable, and flyway needs and priorities. These were incorporated into a national priority list to direct Service acquisition efforts into areas of greatest importance to the waterfowl resource and those habitats receiving the greatest threat of near-term loss. The proposed national priority list is presented in Table 5. Figure 1¹ illustrates the general geographic locations where the Service proposes to focus acquisition efforts during the period FY 1977-1986, although minor acquisition will occur in other locations. Table 6 summarizes original and revised objectives and projected accomplishments through FY 1976.

Flyway and national priorities were developed using the following principal criteria:

1. Relative importance to waterfowl, based on intensity of use during critical periods, the inherent productivity of the habitat, and published research findings.
2. Relative threat to the habitat indicated by trends in habitat losses, current land use practices, and expected trends in land use.
3. Quantity and quality of habitat type in the flyway relative to the numbers and species of waterfowl that must be supported.
4. Existence of alternative methods of preserving the habitat (both for the general habitat category, e.g., prairie potholes, and on a site by site basis).

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TABLE 7.—OVERVIEW OF WETLAND BENEFITS PROVIDED BY THE TOP 15 FWS, HABITAT PRIORITY CATEGORIES

Service provided	Location where benefits occur		Occurrence of benefits by land acquisition categories															
	On-site	Off-site	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Waterfowl hunting.....	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Nature observation and photography.....	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Commercial fishing.....	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Recreational fishing.....	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Resident game hunting.....	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Trapping.....	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Environmental education and research.....	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Natural area enjoyment/open space.....	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Sediment reduction.....	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Water pollutant abatement.....	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Flood damage reduction.....	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Coastal storm damage reduction.....	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Erosion prevention.....	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Groundwater recharge.....	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Total.....			8	8	8	7	10	9	11	9	9	8	11	10	7	9	6	

TABLE 8.—WETLAND PRESERVATION MEANS, BY ORGANIZATIONAL LEVEL.

Means	Organizations with major involvement						
	FWS	Other Federal	Regional organization	States	Substate	Local	Private
Direct control of wetlands:							
MBCA-refuges.....	×						
MBCA-WPA.....	×						
LWCF.....	×	×		×	×	×	
FAWR (P-R).....	×			×			
Other State acquisition:							
Marine sanctuaries.....		×		×			
Estuarine sanctuaries.....		×		×			
Water bank.....	×					×	
Ecological reserves.....	×	×		×			×
Gun clubs.....							×
Conservation organizations.....							×

See footnotes at end of table.

¹ See p. 178.

TABLE 8.—WETLAND PRESERVATION MEANS, BY ORGANIZATIONAL LEVEL—Continued

Means	Organizations with major involvement						Private
	FWS	Other Federal	Regional organization	States	Substate	Local	
Regulation of land use, direct:							
Land use planning ²				X	X	X	
Wetland zoning				X	X	X	
Traditional zoning				X	X	X	
Regulation of flood plain use				X	X	X	
Planning/review of Federal Power development projects	X	X		X			
Permit/license application reviews:							
Secs. 404, 10	X	X		X			
NPDES (sec. 402)	X	X		X			
Powerplants	X	X		X			
Critical endangered species habitat	X	X					
Regulation of land use, indirect:							
National Land Use Policy Act ¹		X					
National flood insurance program		X					
Comprehensive river basin studies	X	X	X	X			
Coastal Zone Management Act		X					
Supportive (influences incentives for use of wetlands):							
Elimination of tax incentives which encourage wetland destruction:							
Property tax				X		X	
Estate/gift tax ¹		X		X			
Income tax—Capital gains ¹		X		X			
Income tax—Accelerated depreciation ¹		X		X			
Federal executive order ¹		X					
Drainage referrals/Reuss amendment/SCS policy	X	X				X	
Other Federal agency directives (DOT)		X					
Elimination of agricultural subsidies which encourage wetland destruction							
Environmental education	X	X	X	X	X	X	X
Technical assistance	X	X		X			

¹ Proposed.² Includes operational coastal zone management programs.

TABLE 9.—ESTIMATED WETLAND LOSSES AND TRENDS IN 15 WATERFOWL HABITAT PRIORITY CATEGORIES

Habitat category	Period	Average loss rate acres per year	Average annual percent lost	Total acres lost during period
1, 2—Western Prairie potholes:				
South Dakota	1965-74	5,000	0.4	48,900
North Dakota	1965-68	16,800	1.25	67,300
3—Eastern Prairie potholes	1965-74	7,750	2.4	77,500
4—Central Valley	(1)			
5—Atlantic coastal (Black Duck)	1950-69 ²	4,225	.13	84,500
6—California coastal	1950-69 ²	2,310	.6	46,200
7—Mississippi Delta	1950-69 ²	203,150	1.8	4,063,000
8—Texas coastal	1950-69 ²	21,335	.3	426,700
9—Louisiana coastal	(3)			
10—Great Basin Redhead	(4)			
11—Other Mississippi flyway breeding	(5)			
12—Mid and South Atlantic coastal	1950-69 ²	2,115	.3	42,300
13—Other central flyway breeding	Pristine-1968	(6)	(6)	89,500
14—Washington coastal	1950-69 ²	1,050	.1	21,000
15—Oregon coastal	(7)			

¹ Loss rates unquantified; however, expanding agriculture, increasing land costs, and the imminent threat of significantly reduced availability of water supplies for private duck clubs to annually provide wintering waterfowl habitat all pose a severe threat to the continued existence of Central Valley water fowl habitat. With some 65 percent of the Pacific flyway waterfowl wintering in this extremely limited habitat, any measurable losses, or reduced intensity of management, of habitat is expected to result in serious and irreversible reductions in flyway populations.

² Losses from dredging and filling only.³ Included with category 8 as Gulf of Mexico zone.

⁴ Losses not quantified. However, deterioration of marsh habitat conditions and lack of marsh management measures in some areas have resulted in demonstrable declines in redhead production.

⁵ Not quantified on an acreage basis. Pond density (wetlands per square mile), however, decreased 18 percent in the more productive habitat of northwest Wisconsin between 1955 and 1970, or 1 to 2 percent annually. This trend would be indicative also of similar prairie-forest transition zone waterfowl habitat of eastern Minnesota.

⁶ Losses are those in Nebraska only, where the principal breeding habitat outside the prairie pothole region occurs. Losses are those since pristine times, but most have occurred since World War II. Approximately 32 percent of the States' wetland acreage had been destroyed by the mid-1960's, or about 1 percent annually. A 65 percent loss in the Rainwater Basin wetlands, and a 15 percent loss in the Nebraska Sandhills have occurred during the period.

⁷ Included with category 14 as Northwest Pacific zone.

4. Benefits and costs were estimated for five alternative program funding and acreage objective levels, using standard economic valuation methods and two discount rates. Only three benefit categories were quantified for the analysis—waterfowl hunting, waterfowl (bird) watching/nature observation, and flood protection. Other benefits, are believed to be substantial, but were not quantified for this analysis. Table 10 summarized the benefit/cost analyses (costs are in terms of 1975 dollar values discounted over 50 years, and reflect total program costs, including land, development, and operation and maintenance costs) and shows resultant benefit-cost ratios. Based upon waterfowl hunting and bird watching benefits alone, a B/C ratio greater than 1.00 can be demonstrated at all funding levels at the standard Water Resources Council discount rate of 6.125%. When flood protection benefits are included at the proposed program level, the B/C ratio increases to 2.28. This is a preliminary analysis which will be refined, but is believed to represent a minimum level of benefits. The costs are believed to be reasonably accurate projections. Marginal costs for the proposed 10-year, 1.9 million acre program appear to be approaching marginal benefits at the proposed program level suggesting the proposed program level is an optimum.

TABLE 10.—BENEFIT-COST SUMMARIES FOR ALTERNATIVE PROGRAM LEVELS

[In millions of dollars]

Alternative program levels	6.125 percent discount rate			10 percent discount rate		
	Costs	Benefits	B/C	Costs	Benefits	B/C
Proposed program (\$360,000,000, 10 yr):						
Waterfowl hunting and bird watching/nature observation.....	\$345.2	\$407.2	1.18	\$270.6	\$218.1	.81
Waterfowl hunting only.....	345.2	203.6	.59	270.6	109.0	.40
All waterfowl benefits and flood protection.....	345.2	788.2	2.28	270.6	416.1	1.54
Status quo program (\$25,000,000, 10 yr):						
Waterfowl hunting and bird watching/nature observation.....	21.9	37.8	1.73	17.3	17.8	1.03
Waterfowl hunting only.....	21.9	18.9	.86	17.3	8.9	.51
All waterfowl benefits and flood protection.....	21.9	68.8	3.14	17.3	34.8	2.01
Deferred repayment program (\$120,000,000, 10 yr):						
Waterfowl hunting and bird watching/nature observation.....	110.3	211.5	1.92	86.0	115.4	1.34
Waterfowl hunting only.....	110.3	105.7	.96	86.0	57.7	.67
House bill (H.R. 5608) program (\$200,000,000, 7 yr):						
Waterfowl hunting and bird watching/nature observation.....	207.7	295.8	1.42	168.6	160.7	.95
Waterfowl hunting only.....	207.7	147.9	.71	168.6	80.4	.48
\$10 duck stamp program (\$225,000,000, 10 yr):						
Waterfowl hunting and bird watching/nature observation.....	204.0	294.7	1.44	159.4	159.6	1.00
Waterfowl hunting only.....	204.0	147.3	.72	159.4	79.8	.50

5. A brief analysis of program financing sources was undertaken. As previously indicated, the benefits of preserving waterfowl habitat accrue to a large segment of the public. At the present time the waterfowl hunter, in addition to paying general taxes, contributes an additional special fee (duck stamp) in support of the Service's acquisition program. The analysis clearly demonstrates there are other beneficiaries of wetland preservation in addition to waterfowl hunters, only a few of which can readily be singled out. All beneficiaries—direct and indirect—should contribute to the costs associated with perpetuating the flow of benefits from wetlands. General appropriations, as well as special user taxes or fees on nonconsumptive uses, are suggested as means of having these diverse beneficiaries contribute to the preservation of the wildfowl resource. Second, an expanded financial base allows protection for a greater portion of the habitat base.

6. The nature of the wetland and waterfowl resource is such that a Federal role is clearly needed. Benefits yielded from wetlands are public goods yet, for the most part, the wetland base is in private ownership. Frequently the benefit values of wetlands accrue if some distance from the wetland, often beyond State and national boundaries. Such is the case of waterfowl, a resource of greater than local or State concern, which are managed under international treaty obligations with Canada, Mexico, and Japan.

MIGRATORY WATERFOWL HABITAT PRESERVATION

U.S. FISH AND WILDLIFE SERVICE

Overview

Quality and availability of habitat, more than any other factor, holds the key to future abundance and distribution of all wildlife, including waterfowl and other migratory birds, for which the Fish and Wildlife Service has a major responsibility. Wetland ecosystems are particularly crucial. Unfortunately, the traditional view of wetlands is one of wasteland. As such they have been drained or filled for agricultural, industrial, and residential development; degraded by ditching for mosquito control; polluted by pesticides and other chemicals; and used simply as the Nation's dumps. As a result, more than 40 percent of the estimated 127 million acres that originally existed has already been lost. Of the remaining 70 to 75 million acres, less than 20 million are considered of prime importance to waterfowl.

Only in recent years has the general public begun to recognize and appreciate that wetland ecosystems are unique and of vital importance in satisfying human needs as well as those of fish and wildlife.

Far beyond their necessity for the survival of the 45 different species of waterfowl native to the continental United States, wetlands play essential, but often unappreciated, roles in flood control and water purification. They retard the flow of water from the land, moderate flood crests and help purify water by absorbing silt and nutrients that would otherwise degrade downstream domestic water supplies, irrigation reservoirs, estuaries, and other waters. Wetlands play a significant role in maintaining and recharging underground water supplies so vital to agriculture, local communities, and industry.

Hardwood timber production depends on wetland ecosystems in some areas, and they are unique recreational areas, high in esthetic value, with delicate and sensitive flora and fauna. Their importance to the perpetuation of both sport and commercial marine fisheries is undisputed—up to 90 percent of all marine finfish and shellfish depend on coastal marshes and estuaries during some portion of their life cycles. Likewise, freshwater marshes are equally critical to species inhabiting inland waters. Wetlands also provide vital habitat for a variety of other wildlife, including many furbearers, a multitude of shorebirds, and most of the wading species. Yet, destruction of prime waterfowl habitat, particularly wetland ecosystems, continues at an accelerating pace.

The Service has since 1961 been engaged in an accelerated program designed to curb destruction of key waterfowl habitat. Acquisition continues to be a major, and in many cases the only, mechanism which the Service can employ to protect habitat required for the perpetuation and use of waterfowl species and populations. This Federal program is mandated by various statutes and international obligations such as the migratory bird treaties with Great Britain (for Canada), Mexico, and Japan.

In the past Fish and Wildlife Service acquisition objectives have been predicated on the assumption that substantial acreages of habitat would be maintained intact under private ownership. While this is, to a degree, still true, significant acreages of habitat once considered safe are now increasingly threatened. Under these circumstances the Service has found it necessary to reevaluate its acquisition objectives and to specifically pinpoint where the Federal Government should focus its efforts to preserve habitats most critical to our international waterfowl resources.

In its waterfowl habitat acquisition and management programs, the Service has two principal objectives: 1) maintain the habitat capability to produce and sustain recent peak waterfowl population levels for each species and 2) maintain existing distribution patterns of waterfowl to the extent possible unless mutually agreed upon among the affected parties that such changes are biologically necessary. Losses of significant amounts of habitat or over-intensification of management on existing habitat will result in overcrowding on remaining areas, thereby greatly increasing the potential for major waterfowl die-offs from diseases, such as duck plague and avian cholera, and other natural and man-caused environmental disasters, as well as cause a substantial redistribution of

populations. This requires that habitat currently used by significant numbers of waterfowl be maintained in such a way that it continues to support similar populations. A number of tools is available for attaining this objective, including but not limited to fee purchase, easements, leases and donations which the Services hopes to employ as necessary to fit the particular situation.

Other methods of preserving wetlands and other waterfowl habitat will also play an important role in the future. Department of Agriculture programs such as Water Bank, as well as its new authority to acquire perpetual easements on floodplains, shore lands, and other aquatic areas, will become increasingly important as pressures on habitat mount. Review of permit applications for dredging and filling in navigable waters, and enforcement of such unauthorized activities, will receive increased emphasis during the coming years. Wetland protection under the Coastal Zone Management Act and various State zoning laws will take on new dimensions of importance as time goes on, but efficacy of these has yet to be fully tested. Policy statements by other Federal agencies that reflect wetland protection philosophies will also tend to insure the future of wetlands. All these will help preserve the Nation's vital aquatic resources in the future, but they are largely temporary in nature. Outright purchases in fee title, easements or lease must continue to supplement these temporary measures if key habitats, and the species they support, are to be maintained indefinitely.

Basically, the Fish and Wildlife Service will preserve waterfowl habitat on the basis of individual species and flyway needs and priorities. Our efforts will focus on protecting key waterfowl breeding and wintering habitats—breeding areas because data suggest that the magnitude of this type of habitat annually constrains the size of continental waterfowl population levels, and wintering because of the responsibility incumbent on the United States to support nearly the entire international waterfowl resource of some 75 to 100 million individuals for the extended duration of the winter stress period. By contrast, the individual States are expected to provide the majority of migration habitat needed, both to sustain waterfowl populations during their fall and spring migration and to provide on-site opportunities for public use of the resource.

In order to accomplish the preservation of key breeding and wintering habitat that will not be otherwise protected, the Service has revised its objectives for the accelerated waterfowl habitat acquisition program. The more than 20 year old 12.5 million acre goal for combined State and Federal acquisition is being refined. The Fish and Wildlife Service proposes that for the 10 year period beginning with FY 1977 its accelerated wetland preservation goal should be adjusted from 2.5 million to 3.8 million acres, of which 1.9 million will have been acquired by September 30, 1976, when the current Wetland Loan authorization is scheduled to terminate.

Accomplishments during the accelerated wetlands acquisition program

Facilitated by enactment of the Wetlands Loan Act of 1961, the Service initiated an accelerated wetland acquisition program which has as an objective the preservation of 2.5 million acres of high quality breeding and other waterfowl habitat, including traditional refuges and small waterfowl production areas, which was threatened by drainage or other destructive pressures. The Act authorized for appropriation a \$105 million interest-free loan advance to be used, in combination with duck stamp receipts, to offset or prevent the serious loss of important wetlands and other waterfowl habitat. The authorization expires September 30, 1976, after which time the appropriated portion of the loan advance is to be repaid to the Treasury using 75 percent of annual duck stamp receipts. The 2.5 million acre objective was, however, only interim toward meeting the Federal share of a long standing 12.5 million acre national objective for State and Federal ownership. Table 1 illustrates acreage objectives and anticipated accomplishments during the accelerated program (FY 1962-1976). Table 2 illustrates accomplishments by habitat type and flyway (FY 1962-1975). Included in the acres remaining to be acquired is a backlog of approximately 88,000 acres in 46 projects which have received Migratory Bird Conservation Commission approval.

TABLE 1.—FISH AND WILDLIFE SERVICE ACCELERATED WETLANDS ACQUISITION PROGRAM, OBJECTIVES AND ACCOMPLISHMENTS, FISCAL YEAR 1962-76¹

Category	Acreage objective	Anticipated accomplishment fiscal year 1962-76	Percent accomplished	Acres remaining
Refuges:				
Breeding	250,000	143,000	57	107,000
Migration	175,000	60,000	34	115,000
Wintering	325,000	205,000	63	120,000
Total refuge	² 750,000	408,000	54	342,000
Waterfowl production areas:				
Fee	600,000	383,000	64	217,000
Easement	1,150,000	1,107,000	96	43,000
Total WPA	³ 1,750,000	1,490,000	85	260,000
Total	2,500,000	1,898,000	76	602,000

¹ Excludes Alaska.² Based on lists of habitat areas considered most essential to sustain the waterfowl resource at levels and species composition which existed at beginning of program, taking into account vulnerability of each habitat type.³ Represents 75 percent of wetlands most important to breeding waterfowl believed to have existed at program beginning in the Dakotas and Minnesota. More recent inventory data suggest the WPA acreage objective is nearly 1,000,000 acres below that necessary to protect 75 percent of the wetland acreage that existed at the program's initiation.

TABLE 2.—ACCOMPLISHMENTS OF FISH AND WILDLIFE SERVICE, ACCELERATED WATERFOWL HABITAT ACQUISITION PROGRAM, BY FLYWAY, FISCAL YEARS 1962-75

Category	Flyway				Total
	Atlantic	Mississippi	Central	Pacific ¹	
Refuges:					
Breeding	32,800	36,500	45,950	28,150	143,450
Migration	10,000	20,000	24,000	5,400	59,400
Wintering	94,500	31,450	42,350	36,700	205,000
Total refuge	137,300	88,000	112,300	70,250	407,850
Waterfowl production areas:					
Fee	1,150	107,800	256,000		364,950
Easement		31,750	1,023,100		1,054,850
Total WPA	1,150	139,550	1,279,100		1,419,800
Total	138,450	227,550	1,391,400	70,250	1,827,650

¹ Excluding Alaska.

Initially the 2.5 million acre objective, designed as an immediate step to curb extensive wetland losses, particularly in the glaciated prairie pothole region of the United States, was to have been completed in seven years at a cost of \$105 million in loan appropriations plus \$42 million in duck stamp receipts. The authorization was subsequently extended to 15 years when less than 50 percent of the objective had been achieved and a similar percentage of the loan advance had been appropriated by the termination of the initial seven year period. At the expiration of the current loan authorization in 1976, 1,898,000 acres, or 76 percent of the objective, will be acquired at a cost of \$104 million in duck stamp receipts and \$85.9 million in loan advances. There will remain \$19.1 million of the loan unappropriated and about 602,000 acres of the original objective to be preserved.

As an indication of the impact of extending the program over a 15 year period, the Farm Real Estate Index, used to project program costs, increased 123 percent during the period FY 1962-1973. According to that Index, rural land prices increased an average 25 percent during the single year which ended in March 1974; increases were greater than 30 percent in both North and South Dakota, in which the Nation's primary waterfowl production habitat occurs. If the current trend continues through FY 1978, the purchasing power of the dollar for agricultural land will be less than 25 percent its FY 1961 value.

Future objectives

In developing waterfowl habitat acquisition plans, an initial step has been made to reexamine the 20 year old 12.5 million acre national objective and priorities as well as the current 2.5 million acre accelerated program objective in the context of present Service policies and contemporary land use trends which affect major waterfowl habitats. Methods to achieve objectives are also being evaluated and the most effective and ecologically sound techniques will be implemented.

The Service, in reevaluating and refining its habitat acquisition objectives, policies, and methods, has developed a tentative plan which, although requiring refinement, projects waterfowl habitat preservation plans for the next 10 year period. Formulation of objectives and priorities has been done initially according to species, when applicable, and flyway needs and priorities. These have been incorporated into a national priority list which will form the basis for the future habitat preservation program. The current list is produced in table 3.

Figure 1 illustrates the general geographic areas where the Service will focus its waterfowl habitat acquisition efforts over the next decade, although minor acquisition will occur in scattered locations throughout the Nation. Table 4 summarizes original and revised goals and accomplishments through FY 1976.

In developing flyway and national priorities, the principal criteria used include: 1) relative threat to the habitat, as indicated by trends in habitat losses and land use practices; 2) inherent productivity of breeding, migration, and wintering habitat (i.e., importance to waterfowl in its present state); 3) quantity and quality of flyway habitat relative to the numbers and species of waterfowl it must support (i.e., the impact on species or flyway populations if the habitat were lost); 4) known or suspected habitat-related problems associated with individual species; 5) potential for increased losses of waterfowl from diseases and other natural or man-caused catastrophes which may be aggravated by overcrowded conditions; and 6) potential for significant alteration of current distribution patterns.

TABLE 3.—PROPOSED U.S. FISH AND WILDLIFE SERVICE MIGRATORY WATERFOWL HABITAT ACQUISITION PROGRAM, BY NATIONAL PRIORITY CATEGORY, FISCAL YEAR 1977-86

Priority	Flyway	Geographic location	Habitat type	Group/species	Primary habitat not protected by public agency	Minimum acres proposed for Fish and Wildlife Service preservation Fiscal year 1977-86 ¹	Estimate cost (1975 prices, in millions of dollars)	
1	Central	Prairie Pothole (North Dakota, South Dakota, Montana)	Breeding	Canvasback, Red-head ²	1,000,000	\$ 275,000	\$61.8	
2	do	do	do	Other ducks		4 550,000	24.8	
Subtotal							825,000	86.8
3	Mississippi	Prairie Pothole (Winn.)	Breeding	All	200,000	\$ 150,000	37.5	
4	Pacific	California, Central Valley	Wintering	do	63,000	60,000	11.0	
5	Atlantic	Coastal (North Carolina to Massachusetts)	do	Black duck	50,000	40,000	11.5	
6	Pacific	Coastal California	do	All	70,000	60,000	24.4	
7	Mississippi	Mississippi delta (primarily Arkansas, Mississippi, Louisiana)	do	Wood duck, Mallard	2,000,000	200,000	15.0	
8	Central	Coastal (Nebraska, Texas, Laguna Madre)	do	All	350,000	100,000	13.2	
9	Mississippi	Coastal (primarily Louisiana)	do	do	1,300,000	100,000	25.2	
10	Pacific	Great Basin (Idaho, Utah, Nevada)	Breeding	Redhead	60,000	40,000	10.9	
11	Mississippi	General (Wisconsin, Michigan, some Iowa)	do	Ducks	100,000	100,000	24.6	
12	Atlantic	Coastal (Chesapeake Bay, Delaware Bay, Georgia, North Carolina, South Carolina, Florida)	Wintering	do	350,000	50,000	14.3	
13	Central	General (excludes glaciated prairie)	Breeding	do	250,000	100,000	14.1	
14	Pacific	Coastal (Washington)	Wintering	All	13,000	13,000	8.2	
15	do	Coastal (Oregon)	do	do	9,000	5,000	2.5	
Subtotal, categories 1-15							1,843,000	299.2

16	Atlantic	Inland (primarily North Carolina, South Carolina, Georgia)	Wintering	Wood duck	2,000,000	7,350	4.3
17	Pacific	Inland (primarily California, Washington, Oregon, Idaho)	Breeding	Ducks	6,000,000	26,750	4.6
18	Atlantic	Inland (scattered bogs, ponds, et cetera New England)	do	do	150,000		
19	Mississippi	Inland	Wintering	All	(3)	17,100	7.7
20	Pacific	do	do	do	10,000	6,750	3.6
21	do	Great Basin	Breeding	Geese	(3)	400	.1
22	Atlantic	Inland (mostly Virginia south)	Wintering	All	300,000	2,650	.8
23	Central	Inland (Texas, Colorado, New Mexico, Oklahoma, Kansas)	do	do	(5)	1,900	.7
24	Pacific	Coastal (Oregon, Washington)	Migration	do	6,000	2,050	1.2
25	Atlantic	Coastal (primarily New Jersey to Maine)	do	do	100,000	8,300	3.1
Subtotal					8,566,000	73,250	26.1
25	Mississippi	Inland	Breeding	Geese	(3)		
27	Central	do	do	do	(3)		
28	do	Coastal	Migration	All	(3)		
29	Pacific	Inland	do	do	(3)	1,600	.4
30	Mississippi	Inland (Upper Mississippi and Illinois River valleys)	do	do	(5)	1,750	1.1
31	Atlantic	Inland	do	do	(3)	13,850	6.1
32	Central	do	do	do	(5)	13,600	6.5
33	All	do	Recreation	do		30,800	14.1
Subtotal, categories 16-33					8,566,000	104,050	40.2
Grand total:							
Priority categories 1-15					5,815,000	1,843,000	299.2
Priority categories 16-33					8,566,000	104,050	40.2
Total all categories					14,381,000	1,947,050	339.4
Administrative overhead						67.9	
Total costs							407.3

1 Combined fee and, in some cases, easement. It is expected that some habitat shown in the lower priority categories (16-33), particularly those not yet approved by MBCC, will not be preserved by FWS during 10-yr period. Also, techniques other than fee purchase by FWS for maintaining habitat will be considered before FWS acquisition is.

2 Canvasback and redhead habitat acres for priority No. 1 are included in priority 2.

3 Fee.

4 Easement.

5 Acreage undetermined.

U.S. DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

ACCELERATED FEDERAL WATERFOWL LAND ACQUISITION PROGRAM
FISCAL YEARS 1977 THRU 1986

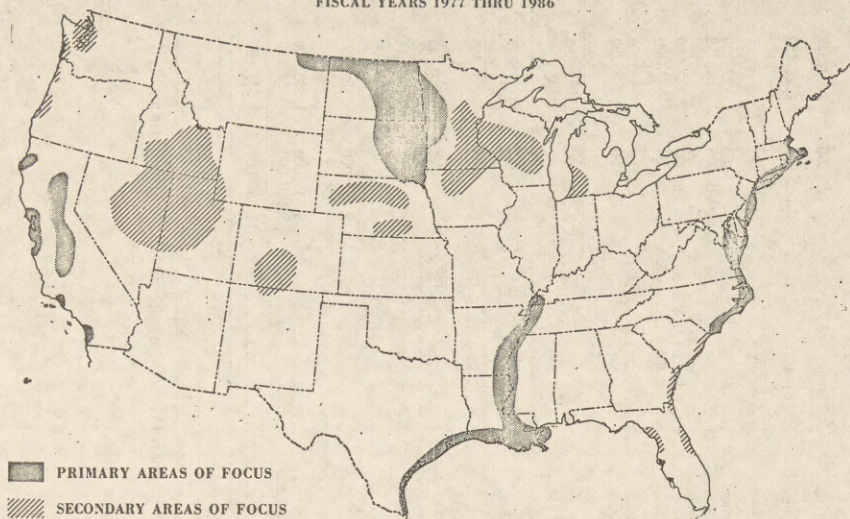


FIGURE 1

U.S. DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

TABLE 4.—MIGRATORY WATERFOWL LAND ACQUISITION PROGRAM ORIGINAL AND REVISED FEDERAL GOALS
[Thousands of acres]

	Original ¹ goal	Revised goal	Acquired 1962-76	To be acquired 1977-86	Percent acquired of revised goal
Refuges:					
Breeding.....	250	400	143	257	36
Migration.....	175	100	60	40	60
Wintering.....	325	900	205	695	23
Total.....	750	1,400	408	992	29
Waterfowl production areas:					
Fee.....	600	800	383	417	48
Easement.....	1,150	1,650	1,107	543	67
Total.....	1,750	2,450	1,490	960	61
Total.....	2,500	3,850	1,898	1,952	49
Unscheduled.....	1,220				
Federal water resource projects.....	780	² 500	200	300	
Total.....	4,500	4,350	2,098	2,252	

¹ Includes acreage to be acquired in addition to that already preserved by FWS and Federal water resource projects at the initiation of the accelerated program, within the overall 12,500,000 acre State and Federal national goal, excluding Alaska.

² Expected to change significantly as Federal agencies utilize authorities for nonstructural approaches provided by the Water Resources Development Act of 1974.

The Service has attempted to focus on preservation of habitats which, at our current level of knowledge, are considered most important to the maintenance of species and population levels and are most vulnerable to loss if no action is taken by the Fish and Wildlife Service. Based on these factors, high quality breeding habitat, where significant numbers of breeding waterfowl occur, and wintering areas, required to sustain a large proportion of continental waterfowl for extended periods, are considered highest Fish and Wildlife Service priority.

As suggested by its lower priority in table 3, the Service considers habitat used for only short periods during fall and spring migration to be of lesser importance to maintaining the waterfowl resource than either breeding or wintering areas; migration habitat serves primarily to distribute birds for public uses except in special situations such as canvasback staging areas. The Service believes the individual States should assume the primary responsibility, as they have in the past, for providing on-site recreational opportunities for consumptive and non-consumptive uses of waterfowl, and as a consequence preserve the majority of migration habitat required by continental populations.

Given the tremendous pressures facing irreplaceable waterfowl habitat during the 1970's, particularly wetlands suitable for conversion to agricultural, urban, recreational, or industrial uses, the Fish and Wildlife Service considers a continued and accelerated habitat preservation effort essential to meeting its wildlife objectives and fulfilling its responsibilities under legislative mandates. The next 10 years will be critical to major waterfowl habitats in all flyways if current trends in losses continue. It is imperative that advantage be taken to preserve a significant proportion of the high quality habitat remaining in private hands before it is lost. It would be preferable, in many instances, to preserve currently productive habitat while allowing existing uses by owners to continue. Judicious use of various types of easements and other incentives would facilitate this approach.

In addition to their importance to waterfowl, wetland ecosystems have gained recognition as one of the most important, yet fragile and often irreplaceable, natural resources in man's environment. Wetlands perform a vital function in providing habitat for numerous game, nongame, commercial and endangered fish and wildlife species; reducing runoff, soil and wind erosion and increasing flood control; improving water quality and significantly reducing stream sedimentation; facilitating recharge of groundwater supplies; and enhancing the natural beauty of the landscape. Wetlands, serving as the lifeblood for the maintenance of most waterfowl species, are the focus of the Service's waterfowl habitat preservation effort. Protecting wetland ecosystems for waterfowl adds materially to the long term assurance of these other public benefits.

Summary of future waterfowl habitat plans

Habitat categories, acreages, and estimated costs to preserve the most critical areas are shown in table 3. Priority categories 1-15 are considered most important over the next 10 year period. In developing acreage needs, attempts were made to project what could feasibly be accomplished and, where possible, the amount of habitat that would either be acquired by other conservation agencies or would be reasonably secure from destruction. The acreages are subject to refinement as the Service continues to pinpoint key units within each habitat category and periodically assess threats within each. The increase in acreage, from the initial 2.5 million acre objective to an additional need within categories 1-15 of 1,843,000 acres (about 600,000 of which includes the unaccomplished portion of the 2.5 million acre goal), reflects a major increase in waterfowl production area objective (categories 1-3) as a result of improved inventory data.

Without this adjustment, over a million acres of productive wetlands will remain unprotected and vulnerable to drainage in the glaciated prairie region. Other areas receiving major increases include the Mississippi Delta, where massive drainage and timber clearing continue to degrade high quality wintering habitat; certain coastal areas in all flyways which, if lost, would have serious impacts on the waterfowl resource; zones of important breeding habitat outside the glaciated prairie pothole region, and certain key inland wintering areas such as California's Central Valley.

The 105,000 acres of projects falling into priority categories 16-33, as a group, will be lower priority for acquisition. There may be some areas added to this group which, through the Service's delineation efforts, are high quality habitat in its current state and which is imminently threatened with destruction; however, it is anticipated that concentration of funds in the first 15 priority categories will be necessary to assure protection of the most important habitat types.

As indicated previously, the Service believes the States should and will accept the major responsibility for migration and public use areas.

Migratory waterfowl habitat needs and priorities in general

Waterfowl habitat preservation by the Fish and Wildlife Service must first consider habitat required for production, migration, and wintering, and secondarily, consumptive and nonconsumptive utilization of the resource.

Production Habitat: Research data have demonstrated a strong relationship exists between (1) the number of ponds in July in the prairie pothole region

and the size of the total continental population of breeding ducks the following spring, and (2) the number of ponds in July in the prairie pothole region and the total number of mallard (the most abundant duck in North America and most important species in the hunter's bag) young produced on the continent the same year. Based on these relationships, it is vital that essentially all wetlands of the most important classes in the glaciated prairie, including the Dakotas, western Minnesota, northeastern Montana, and parts of Nebraska be preserved in order to sustain continental populations at near their current levels. For this reason and the massive drainage that was occurring, the waterfowl production area program in the prairies has received highest priority during the Service's accelerated waterfowl habitat acquisition program. This is necessary in order to meet the current and future demand for the waterfowl resource.

The average distribution of breeding ducks during the period 1961-1973 in the major waterfowl producing regions of the continent, determined from aerial surveys, was as follows:

Area	Number of breeding ducks (thousands)	Percent
Alaska and Old Crow Flats (Canada).....	3,375	9
Southern portion of 3 prairie provinces.....	13,929	37
Remainder of Canada.....	11,916	31
United States:		
Glaciated Prairie.....	6,910	18
Other United States (estimate).....	2,000	5
Total United States.....	8,910	23
Total.....	38,130	100

The future of Canadian production habitat is of vital importance to waterfowl utilization by U.S. citizens, and we are currently making progress in cooperative planning with the Canadian government; however, the greatest losses of major waterfowl production habitat are still in the United States through widespread wetland drainage and intensified land use.

Aerial breeding ground surveys are not suitable for censusing forest nesting species, such as black ducks and wood ducks, and species nesting in low densities such as canvasbacks; other censuses and indirect techniques are required to estimate population status of these species. The table indicates a substantial portion of the North American duck population, more than 20 percent, breeds in the United States. Nearly all continental wood ducks breed in the conterminous United States. Most species of geese breed in northern Canada, including islands in the Arctic Sea, and Alaska. As a general standard, habitat supporting 15 or more breeding pairs per square mile is considered significant production habitat. This compares to an average 20+ pairs per section over the surveyed sections of North Dakota and up to 100 or more pairs in the highest quality areas.

Wintering Habitat: Although 15 to 25 percent of the North American waterfowl population breeds in the 48 contiguous States, some 80 to 90 percent winters here, as suggested by annual winter inventories. Accelerating destruction and despoilation of coastal and floodplain wintering habitat is of increasing concern to waterfowl managers. The extended demand placed on wintering habitat food supplies, both by migrants on their way farther south and by terminus wintering populations, increases the importance of maintaining high quality habitat, particularly as unavoidable wetland losses compress wintering populations into a smaller habitat base.

While wintering waterfowl are naturally gregarious, unnaturally large concentrations for extended periods, either through purposeful management or destruction of traditional habitat, are not desirable from the standpoint of disease potential and depredation problems, and distribution of benefits to the public. Tables 6 and 7 show the relative distribution of total ducks and geese, respectively, in each State during the mid-winter waterfowl inventory.

Migration Habitat: Migration habitat does not appear to be limiting populations or species; however, it does serve to distribute waterfowl and to provide opportunities for public utilization of the resource. Management of migration habitat to attract birds has often resulted in delayed and altered migration flows, contrary to Service policy. An emphasis on preserving habitat considered to be most important to the waterfowl resource will place migration habitat at the lowest Service priority unless unusual circumstances require assignment of higher priority, such as the need to alleviate serious crop depredation problems when other methods fail.

TABLE 6.—AVERAGE NUMBER OF DUCKS CENSED IN MID-WINTER INVENTORY DURING PERIOD 1963-74 AND AVERAGE NUMBER OCCURRING ON FEDERAL REFUGES IN JANUARY 1973
 [In thousands]
 FLYWAY

State	Atlantic			Mississippi			Central			Pacific		
	Number	Percent	State	Number	Percent	State	Number	Percent	State	Number	Percent	State
Florida	530	23	Louisiana	4,719	59	Texas	2,061	52	California	4,271	66	California
South Carolina	396	17	Arkansas	1,301	16	Kansas	568	14	Washington	1,023	16	Washington
Maryland	339	15	Tennessee	423	5	Oklahoma	290	7	Idaho	623	10	Idaho
New Jersey	220	9	Illinois	417	5	Colorado (E)	282	7	Oregon	353	5	Oregon
New York	189	8	Missouri	318	4	Nebraska	244	6	Montana (W)	62	1	Montana (W)
North Carolina	161	7	Mississippi	311	4	South Dakota	206	5	Nevada	45	1	Nevada
Massachusetts	113	5	Iowa	116	1	New Mexico (E)	146	4	Utah	45	1	Utah
Virginia	100	4	Alabama	95	1	Montana (E)	68	2	Arizona	27	tr	Arizona
Georgia	60	3	Ohio	92	1	Wyoming (E)	62	tr	Colorado (W)	13	tr	Colorado (W)
Delaware	54	2	Michigan	52	1	North Dakota	11	tr	New Mexico (W)	11	tr	New Mexico (W)
Connecticut	43	2	Kentucky	42	tr				Wyoming (W)	3	tr	Wyoming (W)
Rhode Island	34	1	Indiana	34	tr							
Pennsylvania	25	1	Wisconsin	26	tr							
West Virginia	21	tr	Minnesota	15	tr							
New Hampshire	5	tr										
Vermont	3	tr										
	2	tr										
Total	2,267			7,956			3,937			6,476		
Average reported on Federal refuges January 1973	396	17		812	10		1,050	27		1,832	28	
1974 winter inventory index	1,669			7,393			4,283			6,784		
Percent occurring on Federal refuges 1974	24			11			25			27		

TABLE 7.—NUMBER OF GEESE AND BRANT (ALL SPECIES) CENSUSED DURING THE JANUARY 1973 MID-WINTER INVENTORY, BY STATE, AND AVERAGE NUMBER COUNTED ON FEDERAL REFUGES
 IN JANUARY 1973
 [In thousands]
 FLYWAY

State	Atlantic			Mississippi			Central			Pacific		
	Number	Percent	State	Number	Percent	State	Number	Percent	State	Number	Percent	State
Maryland.....	464	54	Louisiana.....	450	38	Texas.....	573	61	California.....	483	61	California.....
North Carolina.....	92	11	Missouri.....	307	26	Kansas.....	148	16	Oregon.....	91	10	Oregon.....
Delaware.....	91	11	Illinois.....	249	21	Ohio.....	90	10	Washington.....	71	8	Washington.....
New Jersey.....	67	8	Tennessee.....	42	4	Colorado.....	71	8	Idaho.....	11	1	Idaho.....
New York.....	57	7	Minnesota.....	27	2	New Mexico.....	50	5	Arizona.....	5	1	Arizona.....
Virginia.....	34	4	Kentucky.....	22	2	South Dakota.....	30	3	Nevada.....	4	1	Nevada.....
Pennsylvania.....	28	3	Michigan.....	20	2	Wyoming.....	12	1	Montana (W).....	2	tr	Montana (W).....
South Carolina.....	8	1	Ohio.....	19	2	Montana.....	2	tr	Colorado (W).....	2	tr	Colorado (W).....
Massachusetts.....	7	1	Alabama.....	10	1	North Dakota.....	0	0	Utah.....	1	tr	Utah.....
New Hampshire.....	3	tr	Wisconsin.....	10	1	Wyoming (W).....	0	0	Wyoming (W).....	tr	tr	Wyoming (W).....
Rhode Island.....	2	tr	Indiana.....	9	tr	New Mexico (W).....	0	0	New Mexico (W).....	tr	tr	New Mexico (W).....
Connecticut.....	2	tr	Iowa.....	4	tr							
Florida.....	2	tr	Arkansas.....	4	tr							
Georgia.....	1	tr	Mississippi.....	3	tr							
Maine.....	tr	tr										
Vermont.....	tr	tr										
West Virginia.....	tr	tr										
Total.....	856			1,184			947			670		
Average reported on Federal refuges January 1973.....	141	16		282	24		315	33		247	37	

Flyway management concept

Each flyway is characterized generally by waterfowl originating from common breeding areas and following similar migration routes to respective wintering grounds. Waterfowl habitat types and conditions, and consequently habitat problems, in each flyway are unique to that flyway. The relative discrete nature of flyways and their respective waterfowl populations requires that the Service's habitat preservation program and priorities be established first on a flyway basis and then nationally. Figure 2 illustrates generally the four flyways and the distribution of waterfowl within each. Considerations in determining priorities

WATERFOWL FLYWAYS OF NORTH AMERICA

Atlantic Flyway



Mississippi Flyway



Central Flyway



Pacific Flyway

By returning bands found on banded ducks and geese, thousands of people all over America help wildlife biologists determine the routes, or flyways, used by our waterfowl between their northern nesting grounds and southern wintering areas. Banding records are maintained, and results analyzed, by



UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE



INT: 3971-73

FIGURE 2

for habitat preservation in all flyways include the relative vulnerability as indicated by trends in habitat losses and land use practices; productivity of breeding, migration, and wintering habitat; the quantity and quality of flyway habitat in relation to the numbers and species of waterfowl it must support, i.e., the impact on flyway populations if the habitat were lost; known or suspected habitat-related problems associated with individual species; and where resource management is a primary objective; the proximity of a proposed purchase to other management units of similar purpose. Based on similar criteria, flyway priorities can be translated into national priorities.

MAJOR FLYWAY HABITAT PROBLEMS AND NEEDS

Pacific

The most pressing habitat problems in the Pacific Flyway are considered to be preservation and possibly management of limited wintering habitat in the Central Valley (Butte Sink and Grasslands) of California where about 65 percent of the flyway waterfowl winter, and the maintenance of California, Oregon, and Washington coastal wintering habitat. Increased production of redheads on both public and private lands is also considered a relatively high priority in the face of sharply reduced production levels noted over the past 20 to 30 years. Populations in the Pacific Flyway have remained at relatively high levels even when drought in the glaciated prairie region has severely reduced fall flights in the Central and Mississippi Flyways indicating relatively stable conditions on the Alaskan and western Canadian breeding grounds from which most Pacific birds originate. In contrast, 4 to 5 million wintering ducks and geese are compressed into the extremely small, intensively farmed Central Valley of California. Duck hunting clubs and the few State and Federal waterfowl areas provide the principal habitat; about three-fifths of the current habitat is provided by hunting clubs. Over 90 percent of the natural wetland habitat has already been destroyed; further significant losses are expected to have significant adverse impacts on Pacific Flyway waterfowl populations. The precarious future of water availability, the demand for additional agricultural land, and the continuation of hunting opportunities hold the key to this essential wintering habitat.

Redhead production, because of declining populations, is of concern in the flyway and nationally. The large saline marshes and some freshwater wetlands in the Great Basin region, many of which remain vulnerable to alteration, are important to breeding redheads and warrant further investigation and possible preservation and management. Delineation and biological and land use reconnaissance studies are being carried out to assess the extent and vulnerability of redhead breeding marshes.

Coastal wetlands are few in number but rate relatively high in waterfowl importance and are vulnerable to considerable economic pressure for conversion to noncompatible uses. According to the national estuary study, 62 percent of the southwest Pacific coastal habitat has already been severely modified and another 19 percent moderately so. Tables 8 and 9 show losses and degree of modification of the Nation's coastal habitat. At one time more than 3.5 million acres of wetlands existed in California. By 1960 this had been reduced by 85 percent to about 400,000 acres; coastal marshes have been reduced by nearly 70 percent and a 40 percent loss of the remaining southern coastal habitat is expected to be destroyed during the 1970's. Plans are being developed jointly between the State of California and the Service to share the responsibility for protecting remaining coastal wetlands. The Service encourages this type of cooperative planning in other States and will act as a catalyst to State and local preservation efforts by sharing in the responsibility. Coastal wintering areas in Oregon and Washington, vulnerable to varying degrees of modification, are also important, not only to populations which currently winter there, but also in reducing pressure on already overcrowded wintering areas in California. According to the National Estuary Study, 87 percent of the estuarine habitat in the northwestern United States had already been moderately to severely modified by 1969.

Central flyway

Preservation of continuously threatened glaciated prairie pothole habitat, particularly high quality canvasback and redhead areas, is the most essential need for the Central Flyway. Despite significant Federal and State efforts to preserve this habitat, wetland drainage surveys conducted during the mid-

1960's indicated that between 100,000 and 150,000 acres of wetlands were drained in the Dakotas during that decade. The rate of drainage has been reduced significantly as a result of the Service's aggressive acquisition program. Continuation of the program at a high level, in combination with the USDA's Water Bank, is considered the most effective method unless tax incentives or other approaches can be developed to encourage landowners to preserve their wetlands. Intensive farming practices in the northern prairies have also severely reduced the quality of upland nesting cover. This factor, together with widespread drainage, is identified as causing depressed waterfowl production in the glaciated prairie. This habitat also produces waterfowl which migrate through other flyways, providing widespread recreational opportunities. Attachment A describes in more detail breeding habitat losses in the glaciated prairie region of the United States and Canada.

Texas coastal habitat is considered second in importance to Central Flyway populations. Even though virtually irreplaceable, coastal marshes continue to be encroached upon by housing projects, oil exploration, construction of canals, and other projects and land subsidence due to removal of ground water for industrial and domestic use. An estimated 85 percent of the Gulf Coast estuaries have been moderately or severely modified through dredging, filling, industrial wastes, and other forces. Much of this is located on the Texas Coast.

TABLE 8.—ACRES OF COASTAL MARSH AND ESTUARINE HABITAT IMPORTANT TO FISH AND WILDLIFE, INCLUDING WATERFOWL, ESTIMATED LOST FROM DREDGING AND FILLING OPERATIONS, 1950-69

[In thousands of acres]

Estuarine zone	Degree of estuarine modification (percent)		
	Slight	Moderate	Severe
North Atlantic.....	44	48	8
Middle Atlantic.....	5	68	27
Chesapeake Bay.....	44	50	6
South Atlantic.....	36	60	4
Biscayne and Florida Bay.....	50	50	0
Gulf of Mexico.....	15	51	34
Southwest Pacific.....	19	19	62
Northwest Pacific.....	13	50	37
United States.....	28	50	22

Source: U.S. Department of the Interior, 1970. National estuary study.

TABLE 9.—DEGREE OF MODIFICATION OF ESTUARIES IN THE UNITED STATES, EXCLUDING ALASKA AND HAWAII, BY 1969

Estuarine zone	Degree of estuarine modification (percent)		
	Slight	Moderate	Severe
North Atlantic.....	271	3	0.9
Middle Atlantic.....	2,202	77	.4
Chesapeake Bay.....	603	5	.9
South Atlantic.....	824	42	5.1
Biscayne and Florida Bay.....	922	21	2.4
Gulf of Mexico.....	8,325	427	5.1
Southwest Pacific.....	388	46	12.0
Northwest Pacific.....	2,142	21	1.0
Total.....	15,677	642	4.1

Source: U.S. Department of the Interior, 1970. National estuary study.

Breeding areas outside the glaciated prairie region are of importance locally, such as Colorado's San Luis Valley and are being delineated for preservation at this time.

Most other wintering habitat in the flyway is associated with the numerous reservoir projects and surrounding grain crops and is not seriously threatened at this time.

Mississippi flyway

Highly vulnerable breeding habitat in the glaciated prairie region of Minnesota both wetland and upland, is still considered of primary importance to waterfowl of the Mississippi Flyway. Results from a 1974 inventory of Minnesota's glaciated prairie region indicated that over 40 percent of the number of wetlands that existed in 1964 had since been drained which reduced the wetland acreage by 24 percent. Local pockets of waterfowl production habitat which exist outside the glaciated prairie are currently being investigated as to their productivity and vulnerability and will be preserved by the Service as necessary.

Extensive bottomland forest clearing in the Mississippi River Delta is resulting in heavy losses of wintering habitat used by mallards and wood ducks. Over two-thirds of the original 24 million acres of bottomland hardwood habitat has already been cleared, drained and placed in agricultural production. More than 200,000 acres were lost annually during the 1960's. Table 10 indicates the dramatic losses of bottomland hardwood habitat for agricultural purposes in the Mississippi River Delta region. The pressure is greater today. Much of the best habitat remaining is controlled by private hunting clubs. To insure preservation of a high proportion of this key wintering area will require a major Service preservation thrust. Again, comprehensive basin-wide planning with other agencies, State and Federal, may be the most effective approach, with the Service delineating and preserving key tracts throughout the Delta.

TABLE 10.—COMPARISON OF LOSSES OF BOTTOMLAND HARDWOOD FOREST AS A RESULT OF WETLAND DRAINAGE AND CLEARING AND INCREASES IN CROPLAND IN THE MISSISSIPPI RIVER DELTA, 1950-69

[In thousands of acres]

State	Hardwood forest			Cropland		
	1950	1969	Percent change	1950	1969	Percent change
Arkansas.....	3,967	2,251	-43	4,040	5,608	+39
Louisiana.....	4,762	3,602	-24	1,626	2,566	+58
Mississippi.....	1,983	1,238	-38	2,326	3,145	+35
Missouri.....	503	177	-65	1,781	2,093	+18
Tennessee.....	258	157	-39	162	256	+58
Kentucky.....	47	32	-32	28	42	+50
Total.....	11,520	7,457	-35	9,963	13,710	+38

Source: U.S. Department of Agriculture, 1971. Land use change in the southern Mississippi Alluvial Valley, 1950-69. Economic Research Service. Agricultural Economic Report 215.

Louisiana's coastal marshes are probably the most important habitat, in numbers and diversity of wintering waterfowl, in the flyway and in the Nation. Although relatively secure at this time under the control of oil companies, losses and degradation are increasing and threats from various sources, such as mosquito control advocates, are becoming apparent. The Service should move to preserve additional key areas in the near term and should maintain a capability to protect a large segment of these marshes should they become even more threatened in the future.

Atlantic flyway

Coastal wetlands, under varying degrees of threat, are the primary habitat important to most waterfowl in the flyway, with the notable exception of wood ducks. In particular, northeastern and mid-Atlantic coastal marshes provide wintering habitat for the majority of black ducks in the flyway, a species of high concern to the Service due to its long term decline in numbers and its importance in the hunter harvest. Loss and degradation of wintering habitat and hybridization with mallards, as well as harvest pressure, are considered possible causes for the decline. Preservation of key brackish coastal marshes in the black duck wintering range along the mid-Atlantic seaboard is considered essential to maintaining populations. Black duck breeding habitat in the United States does not appear to be in great jeopardy and may actually be increasing. Other coastal wintering habitat is of high importance to Atlantic Flyway waterfowl and, depending on its relative security under State wetland preservation laws, receives a high priority for preservation within the flyway.

Degradation of coastal habitat from chemical and organic pollutants may be the most serious habitat problem facing Atlantic Flyway waterfowl and will require effective water pollution laws to solve.

Forested habitat of vital importance to breeding wood ducks, as well as a diversity of other waterfowl species during migration and wintering, in the southeast is also being lost as a result of channelization and clearing projects. Since 1950 an estimated 3 to 4 million acres of bottomland hardwoods have been cleared in the southeast by Federally sponsored projects alone. Key roosting, feeding and breeding areas for wood ducks must be delineated and preserved before they are destroyed.

Summary of benefits derived from the National Wildlife Refuge System

At the end of fiscal year 1974 there were 276 refuges specifically for waterfowl and 116 waterfowl production areas, mostly in the prairie pothole region of the United States. Additionally, more than 995,000 acres of wetlands had been preserved through easements and leases, mainly to compliment the waterfowl production areas owned in fee title.

Although the majority of national wildlife refuges has been acquired or otherwise set aside to protect and support waterfowl, they also provide tremendous benefits to other game and nongame migratory birds, big game and small mammals, sea birds and endangered species. More than 160 species of birds depend on wetland eco-systems alone found on refuges. A portion of some waterfowl refuges has been set aside as wilderness in a natural state. In addition, 168 areas have been designated as research natural areas to promote ecological studies.

In addition to the 1.7 million waterfowl produced and 1.6 million waterfowl use days occurring on refuges in 1974, there were 142 million use days by threatened and endangered species, which included at least 39 endangered wildlife species.

Outdoor recreation, a very small percentage of which is associated with waterfowl hunting (about five percent), is an important benefit of refugees. In 1974 about 21.5 million visitors spent 72 million activity hours engaged in various types of outdoor recreation on refuges including among others, fishing, hunting, wildlife observation and photography. Outdoor interpretive programs provided 2.3 million activity hours of learning experience. Environmental education on refuges is growing in demand.

Although they must be compatible with the primary wildlife objectives of refuges, economic uses, concessions and mineral extraction on refuges provide substantial sums to the Federal Government, most of which is returned to counties for schools and roads. In 1974 \$4.2 million were generated from economic uses.

HABITAT LOSSES AND TRENDS IN THE MAJOR WATERFOWL PRODUCING AREAS OF NORTHCENTRAL UNITED STATES AND CANADA

Primary Glaciated Prairie and Parkland Region

Wetland loss through artificial drainage has been the most obvious factor which adversely affects waterfowl production in the primary glaciated prairie and parkland sections of North Dakota, eastern South Dakota, western Minnesota, southwestern Manitoba, southern Saskatchewan and Alberta. Comparable data from standard drainage surveys over the entire area during similar years are not available; however, independent surveys carried out in the various States and Provinces provide indications of wetland losses and trends.

Data from a survey of private (non-Federally subsidized) drainage during the period 1966-1968 were projected to determine wetland losses over the prairie pothole portion of North Dakota, South Dakota, and Minnesota between 1965 and 1968. The data indicated that of 2.7 million acres of types III (inland shallow, fresh marsh), IV (inland deep fresh marsh), and V (inland open fresh) wetlands present in 1964 in the tri-state area, 48,000 acres (14 percent) in Minnesota, 67,300 acres (5 percent) in North Dakota, and 9,200 acres (2 percent) in South Dakota were drained during the period 1965-68. The 1964 wetland acreage was comprised of 50 percent type III, 32 percent type IV, and 18 percent type V wetlands.

More recently, a wetland inventory completed in western Minnesota in 1974 compared status and losses (number and acres) during the 10 year period since 1964. The number of total undrained wetlands (types III, IV and V) decreased

from 64,275 in 1964 to 38,271 in 1974, a loss of 40.5 percent. The acreage of wetlands decreased during the period from 323,252 acres to 245,733 acres, a loss of 24 percent. In that composition of wetland types in the complexes may be the most important factor in determining their attractiveness to breeding ducks, it is noted that the number of type III wetlands decreased 56.6 percent (from 54,669 to 23,169), while the number of type IV marshes increased 86.5 percent (from 6,628 to 12,360). The number of type V marshes decreased 7.9 percent. The acreage of type III wetlands decreased 50 percent (from 161,358 to 80,732 acres), while the acreage of type IV increased 16 percent (from 94,734 to 109,999 acres). The acreage of type V marshes decreased 18 percent. Comparable data are not available from North and South Dakota, but it is feasible to assume that the change in composition of wetland types would be similar or even more drastic than in Minnesota.

Prior to 1964 Federally subsidized drainage alone eliminated approximately 64,000 potholes (188,000 acres) in the three States in the two years of 1949 and 1950. Another 72,000 potholes (79,000 acres) were drained in the same area during the eight year period 1954-1961 with Federal assistance, about 39 percent of which were of semipermanent types, 58 percent were seasonal (dry up in late spring) and 3 percent were deep marsh types.

Drainage has occurred in virtually all parts of the prairie pothole region of Canada, but the greatest share has been in regions having higher average precipitation and lower evaporation rates. This combination coincides generally with the parkland region, including central Alberta, central and southeastern Saskatchewan, and southwestern Manitoba. South and west of this region and to the Rocky Mountains, water is a greater asset to the economy and agricultural programs there have probably created more permanent water areas (dugouts and stock dams) than have been destroyed by drainage. At least through 1960, wetland losses in Saskatchewan were greater than in either Manitoba or Alberta.

Intensive ground studies of waterfowl and habitat have been conducted in the Minnedosa District of southwestern Manitoba, possibly some of the best waterfowl habitat in the province, since 1946. During that period, both land clearing and wetland drainage have had significant adverse affects on the parkland waterfowl habitat. Between 1930 and 1964 the acreage of land cleared and placed under cultivation increased from 48 percent of the area to 69 percent, an increase of 21 percent. During the period 1949-1964, 37 percent of the sampled ponds within the intensive study area were altered by land clearing activities, with over 50 percent of the alteration occurring the last four years (1961-1964). Drainage during the same period partially or completely eliminated 15 percent of the wetland acreage and 16 percent of the ponds; again over 50 percent occurred during the last four years. Twenty-three percent of all temporary ponds and 10 percent of the semi-permanent wetlands in the study area were affected by the drainage. Road construction also adversely affected wetlands on the study area with 13 percent of the ponds being altered, either through filling with soil or drainage. Over half the wetland destruction resulting from road construction occurred during the last four years.

A preliminary study was recently undertaken to compare wetland losses and gains since "pristine times" (about 1945) to the present (1970) in the black soil zone of Canada, which approximated the parkland regions of Albert, Saskatchewan and Manitoba. Results suggested a net loss of wetland acreage over the entire parkland region of 13.7 percent and a 6.4 percent loss of ponds since 1945. When wetland gains, from extra inflow and creation of dugouts, were considered, an overall net loss of 12.9 percent of acreage and 4.5 percent of ponds was indicated. By Province, Manitoba had a 16.3 percent and 5.8 percent decrease in acres and numbers of ponds, respectively; Saskatchewan showed 10.4 percent and 6.2 percent decreases in pond acreage and numbers, respectively; and Alberta had respective decreases of 16.4 percent and 7.3 percent in wetland acreage and numbers as a result of partial or complete drainage.

Secondary habitat peripheral to primary glaciated prairie/parkland region

Peripheral to the primary waterfowl production habitat of the glaciated prairie and parklands is habitat which produces significant numbers of ducks in certain zones, but because of the limited amount of suitable habitat, either inherently or due to alteration by man, is of less importance over the national and international scene. Included herein are the Sandhills and Rainwater Basin of Nebraska, the once extensive prairies pothole region of northwest and southeast/central portions of Wisconsin.

During the period 1959-1968 wetland losses which had occurred since pristine times were determined for the Rainwater Basin and Sandhills regions of Nebraska, which together contain 97 percent of the State's wetlands. In the Rainwater Basin, characterized by intensive agriculture cropping and irrigated pasture, 3,907 wetland basins existed originally, and 3,203 were destroyed, mostly by drainage, by the mid-1960's, a loss of 82 percent. Of 94,041 acres originally in the Basin, 61,515 acres were determined to have been destroyed, for a loss of 65 percent in total acreage. In contrast, the Sandhills, characterized by high, rolling hills of sand and larger wetlands, is unsuitable for cultivation and cattle grazing and haying on native pastures predominates. Of 13,525 wetland basins originally in the Sandhills, only 184, or 1 percent, have been destroyed. Of the original 183,391 acres of wetlands in the Sandhills, 28,010, or 15 percent, have been destroyed. Overall losses in the two regions indicate that 19 percent of the wetlands and 36 percent of the wetland acreage have been destroyed, mostly by direct draining and filling or through reductions in water tables.

The glaciated section of Iowa experienced the earliest intensive drainage efforts in the major waterfowl producing area of the United States. Historically, the northeast and northcentral pothole region of Iowa contained an estimated one million or more small wetlands. According to the national wetland inventory conducted in 1953-54, the glaciated portion of Iowa contained only 35,000 acres of wetland types III, IV, and V. Recent estimates place the remaining figure at 50,000 acres, for a loss of at least 95 percent.

Sections of Wisconsin having the highest densities of breeding waterfowl during the last half of the 1960's included the northwest and southwest/central portions of the State. There existed approximately 200,000 acres of types III, IV and V wetlands in those sections in the mid-1950's, according to the published national wetland inventory. Another 375,000 acres of types I and II wetlands were also estimated to be in the two regions. Prior to 1958, an estimated 54 percent of the total wetland base in 14 southeastern counties had been drained and another 7 percent drained between 1958 and 1968. A study completed in 1970 attempted to determine the decrease in wetland density since 1955. In the southeast/central region, the number of ponds per square mile increased from 2.6 to 2.9 (11.5 percent), while in the northwest area the density decreased from 8.7 to 7.1 (18 percent) ponds per section between 1955 and 1970. In the southeast/central region about a third of the type V marshes appeared to be man-made. In the low breeding duck density area, which included most of the remainder of the State, the density decreased from 4.4 to 4.2 (5 percent) per square mile. The study concluded that the density of types III-V wetlands (and apparently the net losses from drainage) has stabilized in the better waterfowl production zones of the State. In contrast, wetland habitat, in the form of beaver ponds and flowages, in the northern forested sections of the State is experiencing a rapid increase, with an estimated increase from 22 beaver flowages in 1969 to 34 in 1970, or 55 percent.

Summary of trends in habitat quality as it relates to waterfowl production in the glaciated prairie region

There has been a gradual decline in waterfowl nesting success, particularly upland nesting dabbling species, in the glaciated prairie pothole region during the past 40 years, especially in intensively farmed regions. Data collected by numerous investigators in the region indicate that duck nesting success in the northcentral United States and southern Canada has decreased from an average 63 percent during the 1930's to an average 29 percent in the 1950's and is continuing to decline in the 1970's. This decline is attributable primarily to the influences of intensified agricultural practices which result in a gradual decrease in the habitat base and, consequently, increased mammalian predation.

As a result of conversion of formerly uncropped acreages of wetlands, native grassland, and parkland into land suitable for grain crop production, at least 70 percent of the 300,000 square miles of land in the United States and Canadian prairie pothole region are tilled annually. This has resulted in greatly reduced quantity and quality of upland nesting cover, especially for early nesting species such as mallards, as well as a much lower value of the remaining wetland basins to breeding waterfowl. Data from intensive nesting studies in North Dakota provide an indication of the impact contemporary agricultural practices have on upland nesting waterfowl production.

On lands tilled annually in the intensively farmed drift prairie study areas, only four nests per square mile were found, of which 17 percent hatched suc-

cessfully. In contrast, in non-tilled upland in the same area, 53 nests per square mile were found, of which 25 percent hatched. According to crop and livestock reports, some 90 percent of the drift prairie of North Dakota is tilled annually and 30 to 40 percent is so tilled in the Missouri du Coteau, with the remainder in native pasture, wetlands, tame hayland, etc. The practice of intensive summer fallowing and repeated fall plowing further aggravate the nesting cover problem by completely eliminating residual cover which could be available for nesting the following spring.

Cropland retirement programs in the United States have, until recently, provided significant acreages of quality upland nesting cover since the 1950's under the Soil Bank, Agricultural Conservation, and Cropland Adjustment Programs. These programs resulted in up to 60 million acres of retired cropland at their height, with up to 20 million occurring in the upper midwest. Until 1973 some 10 to 15 percent of the Nation's cropland had been retired annually since 1961. During this period 20 to 25 percent of the retired acreage had some type of grass and/or legume perennial cover, suitable for nesting purposes, while most of the remainder was summer fallowed and had almost no cover at all. The beneficial impact that such high quality cover can have on waterfowl production has been documented through nesting and production studies on land retired under the Cropland Adjustment Program in the Dakotas.

In such idled cropland up to six times more nests per unit of area were found than in active agricultural land. Nest success, without predator control, approached the 70 percent level; over 90 percent nest success was noted for ducks nesting in idled cropland in areas where predators were controlled. Under today's pressures for all out food production, cropland retirement programs have been eliminated and only remnant acreages remain under the recent Cropland Adjustment Program. The only other farm program which is still actively providing suitable nesting cover is the Water Bank, under which less than 100,000 acres of upland are provided.

In addition to severely reduced quality of upland nesting cover, current trillage practices also significantly lower the value of wetlands to breeding waterfowl. This relationship was observed during intensive studies of the ecological distribution of waterfowl in North Dakota during the late 1960's. Results indicated that only 11 percent of the total breeding population of ducks in the State was found on wetlands having tilled bottoms (mostly temporary and seasonal wetland classes), even though tilled wetlands comprised 52 percent of the total number of all wetlands. Apparently related to differences in the production of high protein invertebrate foods required by laying hens made possible by a "hay infusion", ponds having stubble mulch or standing stubble in them were of significantly greater value to breeding ducks than were ponds having little or no vegetation in the basin. These relationships would be expected to be applicable through the prairie breeding areas of the United States and Canada.

5(B). The Department of the Interior's report on H.R. 5608 has been submitted under separate cover.

6(A). The waterfowl hunting regulations that are established in any year result from a series of biological surveys and administrative actions that encompass a nine-month period. These surveys and actions are reviewed in the sections that follow:

Biological surveys

The annual cycle of biological surveys begins with a winter survey of waterfowl each January. This survey provides information on the distribution of waterfowl on the wintering grounds, a subjective measure of wintering habitat, and an estimate of population trends for those species of waterfowl that nest outside the areas covered by the later breeding ground surveys. Winter survey data are also useful in interpreting recoveries from banded birds.

Waterfowl breeding ground surveys were developed to provide statistically sound measurements of annual changes in breeding populations and production. The breeding ground surveys became operational in 1951. The continental breeding range has been divided into units of a size that can be conveniently surveyed on one aerial crew in a short period of time; the southern half of Alberta for example.

Nine of these units cover all of the major breeding grounds. These survey units are further divided into strata; that is, areas with similar characteristics of habitat and waterfowl density and transects. Nearly 33,000 miles of transect are covered during each of two surveys, in Many and in July. Observations of ducks,

water areas, broods, etc., on these transects are recorded separately along the census lines to facilitate analysis of data. The crew, consisting of a pilot-biologist and an observer, flies the same straight line transects every year during both the May and July surveys. Data are then used to determine the average number of ducks per square mile which is expanded to the total number present in each survey stratum.

The breeding population survey, which begins early in May and ends in mid-June, determines the number of potential breeding birds for the various species and also indicates the ratio of single drakes to pairs which gives an index to nesting progress. The number of water areas present in May throughout the prairie pothole country of southern Canada, Montana, the Dakotas, and western Minnesota is also determined from the early survey. Aerial count of ducks are corrected with "visibility rates" derived from sample transects which are censused from both the air and on the ground. This procedure determines the proportion of ducks not seen by the aerial survey crew. Some species are less visible and harder to identify from the air than others. Scaup and canvasbacks, for instance, are at the top of the visibility scale whereas green-winged teal are the most difficult to see. Waterfowl breeding populations in several States are determined either from aerial surveys or ground counts made by State personnel. These population estimates are added to the Service's to determine the size of breeding populations of the various species of ducks on a continental basis.

In the production survey conducted during July, not only are broods counted, but the number of adult birds still on nesting territory as well. The latter gives an indication of how much nesting is still in progress. Data on age class and number of young per brood are recorded to determine the progress and success of the season. The number of water areas remaining in July compared with the number present in May gives an index of the relative stability or deterioration of the habitat.

Particularly with mallards, data such as the size of the breeding population, the number of broods observed, and the number of water areas in May and in July, can be used to predict production prospects and the size of the fall flight for a given year. These data are analyzed statistically in a prediction formula which yields an estimate of the number of mallard young that will be produced.

Because breeding ground surveys for geese, wood and black ducks, which breed in remote areas or heavily forested habitat are too expensive or have not yet been perfected, fall flights of these species must be estimated using the results from the winter survey, banding, and hunter kill surveys, plus limited observation on breeding grounds. During recent months considerable progress has been made in exploring the nature, availability, and suitability of satellite imagery for assessing breeding habitat conditions for arctic nesting geese. Successful arctic goose production depends largely upon the timely disappearance of snow, ice and melt water from goose nesting colonies and other traditional nesting areas. The disappearance of snow and ice cover does not necessarily assure satisfactory goose production; however, little or no production can be anticipated if key nesting areas are unavailable to breeders by critical egg laying dates. With experience, use of satellite imagery may allow forecasts of probable production for arctic nesting geese in terms of low production, average production, or high production. These forecasts can be obtained prior to the establishment of hunting regulations.

Additional information bearing on production and probable fall flights is obtained from Canadian Wildlife Service and U.S. Fish and Wildlife Service personnel at key points throughout the duck and goose breeding areas as well as from Ducks Unlimited, and private and State conservation agencies, all of which conduct various types of waterfowl surveys. All of this information is used in developing a fall flight forecast.

The results of a mail questionnaire survey of waterfowl hunters, a duck-wing and goose-tail collection survey and banding of waterfowl provide an "after-the-fact" check on the aerial surveys. By mid-July of each year the answers to a mail questionnaire sent to hunters, the study of duck wings sent in by cooperating hunters, and the analysis of recoveries of ducks banded the previous summer have been completed. This work provides information on the numbers of ducks bagged by hunters as well as the species, age and sex of the birds killed. Along with band recovery data, which gives a measure of the different vulnerability of young versus old ducks to hunting, the young adult ratio in the previous fall population can be determined. The young adult ratio

reflects the production of the previous summer. Thus, after the fact, the accuracy of the prediction of production made from the May and July aerial surveys is checked. In this manner the accuracy of the fall flight forecasts can be refined from year to year.

Administrative actions

The development of annual hunting regulations are a result of a series of exchanges of information which occur throughout the year. These hunting regulations may be separated into basic and harvest regulations.

Basic regulations are generally not changed annually but when changes are made these are not dependent on the results from the annual surveys of the waterfowl breeding grounds. Basic regulations are reviewed early in the calendar year to allow more time for consideration of harvest regulations at mid-year.

Prior to the establishment of harvest regulations for waterfowl it is necessary to consider the results of the biological surveys. The status of most geese and certain ducks is determined largely by winter surveys and forecasts of production. As a result regulations for this group can be developed earlier than those for other ducks. The hunting regulations for other ducks are developed following the summer surveys and are most critical in terms of available time.

The administrative actions involved in the development of hunting regulations are outlined in calendar order below and diagrammed in Attachment 1.¹

JANUARY

The Service provides the States with an activities schedule for development of migratory bird regulations for the coming year. Also, during January the Service's Migratory Bird Regulations Committee meets to consider proposed changes in basic hunting regulations and certain annual regulations relating to special waterfowl seasons, limits for mergansers, and seasons and limits for sea ducks, coots, swans, cranes, most geese and brant.

FEBRUARY

Changes recommended by the Service Migratory Bird Regulations Committee are forwarded to States, Flyway Councils, and Waterfowl Advisory Committee for review and comment.

MARCH

A proposed rulemaking is published in the *Federal Register* inviting public comments on proposed regulation changes.

MARCH-APRIL

The Service staff recommendations sent to the States and Flyway Councils in February are subject to discussion at the Flyway Council meetings held in conjunction with the North American Wildlife and Natural Resources Conference.

APRIL

The Service reviews recommendations from Flyway Councils, States, Waterfowl Advisory Committee members, Regional Directors and the public for amendments to the basic migratory game bird hunting regulations. Proposed amendments will be developed and published in the *Federal Register* as a "Notice of Proposed Rule Making." Flyway Councils may convene meetings as necessary to consider the regulations proposals developed in February, and other matters relating to policies, population objectives, and waterfowl regulations for the coming season. Council recommendations on the Bureau staff proposals must be in Washington, D.C., by April 15. States are notified of final recommendations on February proposals.

MAY

The Service considers all comments received as a result of publication in the *Federal Register* of proposed changes in basic regulations, and will submit those changes recommended for adoption to the Secretary for approval and publication in the *Federal Register*.

¹ Attachment 1 was not reproducible.

Decisions are reached on frameworks for season lengths, bag limits and shooting hours for swans, cranes, and sea ducks along the eastern coast, and migratory game birds in Alaska. These are forwarded to the States for their selection within the frameworks.

JULY-AUGUST-SEPTEMBER

In late July, the Service adopts, by publication in the Federal Register, the amendments establishing dates, bag limits and shooting hours for the swans, cranes, and sea ducks along the eastern coast, and migratory game birds in Alaska.

The Service's Migratory Game Regulations Committee and representatives of the Flyway Councils and the Director's Waterfowl Advisory Committee hold meetings to review data on the status of waterfowl populations and the fall flight forecasts which are developed from survey and census data collected up until the time of the meeting. A detailed review of the process leading to final establishment of the waterfowl hunting regulations is contained in Attachment 2. A status of waterfowl and fall flight forecast is distributed to Flyway Council representatives, Waterfowl Advisory Committee, and others to assist them in developing recommendations on annual regulations (Attachment 3).

ATTACHMENT 2

ESTABLISHMENT OF HARVEST REGULATIONS

A Fish and Wildlife Service Regulations Committee consisting of a chairman and four members works with representatives of the Flyway Councils (one from each Council) in the development of regulations proposals as outlined below. Proposals are developed for review by the Director, FWS, and the Director's Waterfowl Advisory Committee. Participants shall have such staff support as needed for their deliberations.

A. Committee Meeting No. 1—Waterfowl Status Meeting—Denver, Colorado—July 25-26.

Purpose: Session 1. (Open meeting) Review past management experience in terms of objective accomplishment. This will include a review of the objectives for harvest and spring population goals established the previous years and the degree to which these were achieved for both ducks and geese. (FWS Staff)

Session 2. (Open meeting) Current year waterfowl status. (Ducks and Geese)
a. Breeding populations, b. Water conditions, c. Production ration, d. Fall flight forecast (FWS Staff), e. Resume of Canadian Waterfowl Regulations (CWS Representative).

Session 3. (Open meeting) General discussion of Continental waterfowl population objectives for the next year and current season harvest opportunities. This may be accomplished by use of population plots or other means of assessment for various species. (FWS Staff)

Session 4. (Executive Sessions of Flyway Representative) Meeting break into Flyway Groups to consider specific population and harvest objectives for each flyway. The Service provides its best appraisal of this for each flyway, and by species to the extent possible.

Session 5. (Executive Session of Regulations Committee) Committee will reconvene and consider recommendations from Flyway Groups for harvest and population objectives for each flyway. These should be expressed in terms of (a) allowable harvest (total mallards & total other ducks) for each flyway; (b) total mallards and other ducks to be returned to the breeding grounds the following spring.

The Committee discusses and approves these recommendations for each flyway. The Committee further discusses and approves special protective regulations for species such as canvasbacks and establish definite harvest framework criteria.

B. Flyway Council Meetings—Various locations—July 28—August 2. At these meetings flyway harvest and population objectives established at the Denver meeting will be presented to the Councils. Other pertinent information necessary to formulate specific Flyway regulations proposals will be discussed. A representative from the Service Regulations Committee will attend each Flyway meeting, along with other necessary Service personnel.

1. Technical Committee Meeting :

a. The Fish and Wildlife Service will review status and other information presented at the Denver meeting.

b. The Council representative to the Denver meeting will present the flyway harvest and population objectives developed at that meeting.

c. The Technical Committee will discuss and formulate specific recommendations and alternatives on how these objectives can be accomplished in the flyway. These need not be done in the form of resolutions—a simple listing of recommendations and alternatives for each specific item will suffice. Where necessary reasons for the recommendations can also be attached.

2. Council Meeting :

The Council will meet to consider the Technical Committee recommendations along with necessary background material from the Denver meeting. Council will approve a set of specific harvest regulations proposals for the flyway to be transmitted to the Regulations Committee. The representative from the Service Regulations Committee will participate in all discussions.

C. Regulations Committee Meeting (Executive Session)—Washington, D.C.—August 4.

1. The Committee will reassemble in Washington, D.C., to consider specific recommendations for harvest regulations formulated by each Flyway Council.

2. It will be the responsibility of the FWS Migratory Bird Office to review all proposals and identify those in each flyway which they feel may conflict with previously defined harvest and population objectives.

3. The Committee will discuss specific points identified by the Migratory Bird Office staff and finalize recommendations on these and all other items for presentation to and review by the Director and the Director's Waterfowl Advisory Committee.

D. Director's Waterfowl Advisory Committee (Open Meeting)—Washington, D.C.—August 5.

The Service Staff will present status and fall flight reports, objectives, and recommended harvest regulations to the Advisory Committee and record their comments to the Director.

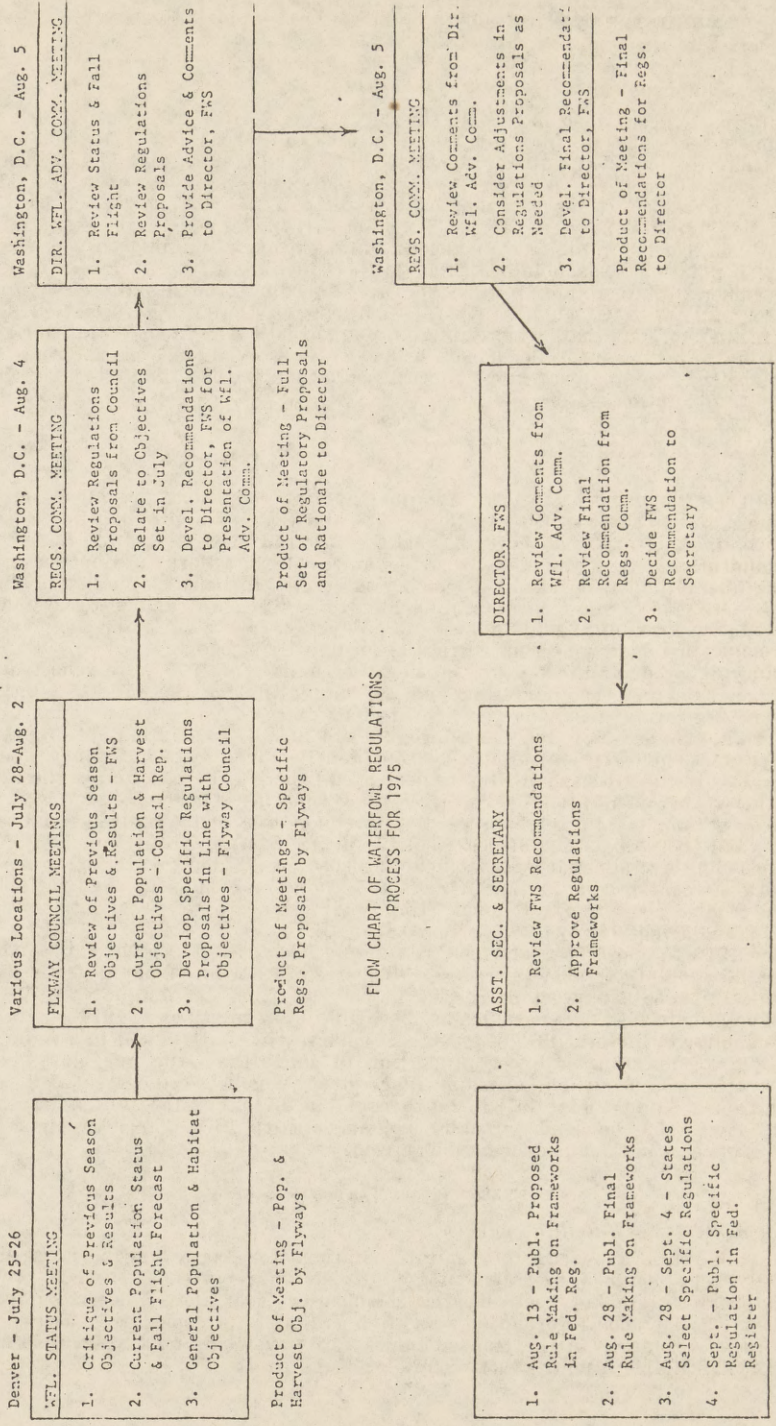
E. Regulations Committee Meeting, Executive Session)—Washington, D.C.—August 5.

The Committee will reassemble immediately after the Director's Waterfowl Advisory Committee meeting to consider comments and advice provided at that meeting. These will be considered in relation to previously formulated recommendations. The Committee will make its final recommendations to the Director, FWS.

F. The Director, FWS will review the final recommendations of the Committee and make decisions on FWS recommendations to the Secretary. This information will be transmitted promptly to the Councils.

G. FWS will publish proposed rule-making on waterfowl regulations frameworks as approved by the Secretary in the Federal Register on August 13, and final rule-making on August 28. States will be informed on proposed and final rule-making promptly so that they can make season selections.

H. States will inform FWS on their specific regulatory selections no later than August 28–September 4 and these will be published in the Federal Register no later than September 15.



FLOW CHART OF WATERFOWL REGULATIONS PROCESS FOR 1975

THE STATUS OF WATERFOWL AND 1975 FALL FLIGHT FORECAST—
U.S. FISH AND WILDLIFE SERVICE

INTRODUCTION

Information contained in this Status Report was derived chiefly from air and ground surveys of waterfowl and habitat conducted each winter, spring and summer; harvest surveys; and for the first time, satellite imagery. The data are the result of cooperative efforts by many individuals and organizations. The majority of the effort has been supplied by the U.S. Fish and Wildlife Service, the Canadian Wildlife Service, various State and Provincial conservation organizations, and Ducks Unlimited. In general, information pertaining to goose and brant populations was obtained from fall production surveys, winter surveys (December 1974, or January 1975), localized breeding ground surveys, satellite imagery and vertical photography. The majority of the duck information was obtained from May and July breeding ground surveys. The report is intended to serve as a management document, primarily to provide information for the development of annual waterfowl harvest regulations in the United States during the 1975-76 hunting season.

Geese

INTRODUCTION

Unlike 1973 when uniformly favorable habitat conditions prevailed across northern North America, the Arctic in 1974 above a line approximating 70° N. Lat. retained ice and snow cover beyond the date that nesting had to commence. Consequently, little production occurred among far-northern nesting geese in 1974. Black brant also had disappointing success even though some key nesting areas were free of snow cover. Wrangel Island, USSR, was known to be under heavy snow cover until late June so the production failure of lesser snow geese which nest there and winter in central California was expected.

Differing production conditions during the summer of 1974 were reflected in the age ratios of geese harvested by U.S. hunters during the 1974-75 hunting season. Age ratios of Canada geese in the four flyways, expressed as immatures per adult, changed as follows: Atlantic, 2.16 in 1973-74 to 1.42 in 1974-75; Mississippi, 1.04 to 1.46; Central 1.12 to 0.59; and Pacific, 0.28 to 0.19. Snow goose age ratios in the Mississippi Flyway decreased from 1.37 to 0.74, and in the Central Flyway, from 1.54 to 0.70. The age ratio of snow geese in the Pacific Flyway decreased from 1.60 to 0.08 because of nil production by the Wrangel Island segment, and poor production of geese nesting in the western Arctic, chiefly Banks Island. High-Arctic nesting geese, including both brants and greater snow geese, experience poor production because of tardy breakup conditions. Age ratios of white-fronted geese in the Central Flyway harvest decreased from 1.41 to 0.38, and in the Pacific Flyway harvest from 0.87 to 0.62.

The 1974-75 goose harvests by U.S. hunters decreased 7 percent for Canada geese, 16 percent for snow geese, and 42 percent for white-fronted geese. The overall U.S. goose harvest decreased 13 percent, from 1.6 million in 1973-74 to 1.4 million in 1974-75. Inasmuch as goose hunting regulations in 1974 generally were similar to those in 1973, the decreased harvest was attributed to a reduced fall flight containing a lower proportion of immatures—the age class most vulnerable to hunting. The Canadian harvest of Canada geese decreased 9 percent, from 286 thousand in 1973 to 261 thousand in 1974; the harvest of other geese in 1974 was 152 thousand, virtually unchanged from 1973. The harvest of all species of geese in Canada decreased 5 percent.

WEATHER AND HABITAT CONDITIONS

Implementation of Satellite Imagery

In past years, knowledge of habitat conditions for Arctic nesting geese has usually been confined to fragmentary information reported from field crews situated at certain key goose nesting colonies, or from limited aerial surveys. Although fairly good information was often available for some easily accessible locales—particularly in the Hudson-James Bay area—only superficial information was available from the vast remainder of the Arctic.

During the past few months, considerable progress was made in exploring the nature, availability, and suitability of satellite imagery for assessing goose breeding habitat conditions. Successful Arctic goose production largely depends upon the timely disappearance of snow, ice, and melt water from goose nesting colonies and other traditional nesting areas. The disappearance of snow and ice cover does not necessarily assure satisfactory goose production; however, little or no production can be anticipated if key nesting areas are unavailable to breeders by critical dates.

Two satellite sensing systems presently afford means for indirectly producing black and white photographs useful for monitoring the progress of Arctic breakup.¹ The first of these is the VHRR (Very High Resolution Radiometer) system of National Oceanic and Atmospheric Administration's TIROS Satellite. From this weather monitoring system; we received images of seven locations strategically located across the North American Arctic, from Greenland west to Wrangel Island, and from James Bay north to Ellesmere Island. Eleven pictures were scheduled for each site on the following dates: 1 through 3 June; 14 through 18 June, and 29 June through 1 July. The outside dates bracket the time period so crucial to most Arctic nesting geese.

The second satellite system brought into utilization this year was the MSS (Multi-Spectral Scanner) of the Earth Resources Technological Satellite (ERTS) of the Earth Resources Observational System (EROS), U.S. Department of the Interior. Imagery from MSS coverage of Canada during June was received daily at Laurel, Maryland, 4-5 days after satellite passage by means of ERTSFICHE cards. Images from the MSS system depict squared areas measuring approximately 100 miles on the side, or 10,000 square miles. In contrast, images from the VHRR sensor measure approximately 1,000 miles on the side, and encompass an area approximately 1,000,000 square miles. ERTS images are better for ascertaining details of habitat conditions whereas VHRR images are more useful for quickly assessing superficial habitat conditions over wide areas. VHRR imagery of a given ground location is available on a daily basis but several days separate the MSS coverage due to its narrower viewing band. Both systems are equally affected by the impact of storm systems and fog, which commonly occlude the Arctic in June.

Several dozen VHRR images were interpreted jointly by biologists of the Canadian Wildlife Service and the U.S. Fish and Wildlife Service. Both agencies had similar access to ERTS imagery and more than 3,000 images were viewed at Laurel alone. Satellite imagery for monitoring goose habitat conditions is presently regarded as an experimental tool; however, we believe that it will become an increasingly useful management tool as data accumulate from satellites and ground studies.

Evaluation of Current Conditions

Both VHRR and ERTS imagery indicated on 2 June that an early breakup was underway over much of the Arctic, with coastlines and lowlands on southern Ellesmere, southern Axel Heiberg, southern Melville, northern Devan, and eastern Somerset Islands being free of snow and ice. The Southampton Island lowlands and southern Bylot Island were snow-free by 5 June. All key areas in the Hudson-James Bay area were available to nesting geese approximately two weeks earlier than normal. Exceptions to the early breakup were limited to portions of the western Arctic, notably the North Slope of Alaska, and Wrangel Island, USSR. The disappearance of snow cover progressed rapidly over the North American Arctic during June. Snow accumulations of short duration were observed in northern Labrador, northern Ungava, and Banks Island. By the end of the month, snow cover was limited to the higher elevations of Ellesmere, Axel Heiberg, Devan, Baffin, and Bylot Islands; most of these areas have perennial icecaps. Unfortunately, Wrangel Island, U.S.S.R. was still half-snow covered on 18 June, one-third snow-covered on 2 July, and one-tenth snow-covered on 6 July.

The generally optimistic outlook from satellite images was supported by reports from most ground crews. In the eastern and Mid-Arctic the season was estimated to be 2-3 weeks earlier than normal. The first goose nest at Cape Henrietta Maria was found on 18 May, the earliest date on record.

¹ Reeves, Henry M., F. Graham Cooch, and Robert E. Munro. 1975. *Potentials of Satellite Imagery for Monitoring Goose Productivity*. Unpublished report. 13 pp., 1 table, 3 figs.

In contrast to field crews in the Canadian Arctic, biologists in Alaska reported variable habitat conditions; goose production in Alaska is expected to be no better—and perhaps poorer than average. Canadian biologists reported that nesting habitat was available at McConnell River by 15 May and Southampton Island by 6 June. The Foxe Basin of Baffin Island, Banks Island, and Bylot Island were all at least 50 percent free of snow by 10 June. From 20–25 June a CWS survey of principal Hudson Bay and Foxe Basin colonies of snow geese, brant, and lesser Canada geese confirmed satellite data available as early as 6 June that the phenology of 1975 was nearly as early as that of 1973, and was one of the earliest Arctic nesting seasons on record. Vertical photography indicated that colony sizes of lesser snow geese in survey areas were comparable with those measured in 1973. In summary, conditions for most Arctic nesting geese were regarded as being unusually good—if not exceptional.

MAJOR POPULATIONS—STATUS, PRODUCTION, AND FALL FLIGHT

In recent years, the emphasis in goose management has shifted from flyways to identifiable populations having discrete breeding and wintering areas. A number of goose management populations—each having unique patterns of distribution and harvest—are now recognized. Our knowledge of these populations varies greatly. The fall flights of a few populations can be predicted with reasonable accuracy, while for others, the geographical ranges are not yet clearly defined. Because of their morphological variation and widespread distribution, Canada geese can be divided into several major management populations.

"Large" Canada Geese

Atlantic Population.—Once divided into the North Atlantic and South Atlantic Populations, for practical purposes these can now be considered as a single management unit. Atlantic Flyway Canada geese bred in Newfoundland, Labrador, and the Ungava Peninsula. Although members of the population winter as far north as New York and coastal New England and south to coastal North Carolina, the great bulk of the population in recent years has concentrated in the Delmarva Peninsula. The population in January of 1975 numbered 819,000 birds, an 8 percent increase above the 760,000 tallied the preceding January. The U.S. harvest in the 1974–75 season was 303,200 compared to 348,600 in the 1973 season. The 1974 fall flight, mid-winter population level, and harvest exceeded the flyway objectives of a fall flight of one million birds, a mid-winter inventory of 750,000, and a harvest of 250,000. Because of favorable habitat conditions on the breeding grounds, another large fall flight is anticipated.

Mississippi Valley Population.—Northern Ontario, especially the coastal lowlands west of James Bay and south of Hudson Bay, comprises the principal breeding range of this large population. Most of the fall flight migrates southward west of Lake Michigan, while a smaller segment migrates east of Lake Michigan. The population winters in south Illinois, and adjacent portions of Kentucky and Missouri. The mid-December of 1974 population estimate was placed at 304,000 birds, 10 percent above the 1973 inventory, and slightly above the mid-winter population objective of 300,000 geese. Early snow and ice disappearance from the breeding grounds of this population suggests that production was above average. A large fall flight is anticipated.

Tennessee Valley Population.—This modest population nests in western Ungava and the southern extremity of Baffin Island. Although some members winter as far south as the Atlantic Coast of South Carolina and southwestward to western Florida, the bulk of the population winters on impoundments in the mid-South. According to the 1974 December survey the population contained 103,000 geese, a decrease of about 24 percent from the previous year. The stated population objective is 150,000 birds. Favorable breeding conditions in the eastern Arctic are expected to result in excellent production and an increased fall flight.

Eastern Prairie (Swan Lake) Population.—This relatively large population, most of which winters in the vicinity of Swan Lake, Missouri, breeds along the Hudson Bay coastal lowlands west and north of the Mississippi Valley Population. The mid-December of 1974 population was estimated at 197,000 birds, 4 percent below the 1973 level, and near the wintering population goal of 200,000 geese. Excellent habitat conditions and a large breeding population portend a strong fall flight which may include 300,000 birds. This would be the largest number in many decades.

Giant Canada Geese.—"Maximas" have been re-established over wide areas of the north-central United States and the eastern Canadian prairies. No systematic attempt is made to assess the size of most population segments; however, the overall number is less than those of most Canada goose management population nesting far north of the United States. Nonetheless, "maximas" are extremely important in certain locales, and their numbers are increasing. In the Mississippi Flyway alone, 57,000 Giant Canada geese were inventoried; this number was comparable to 1973's but well below the flyway goal of 100,000 birds. Satisfactory production was reported for a number of scattered nesting areas.

Western Prairie Population.—This modest population contains a mixture of medium to large-size Canadas that breed in the south-central Northwest Territories, northern Saskatchewan, and northwestern Manitoba. The Missouri River, South Dakota, is a major wintering area; however, a few birds winter from Kansas to the central Gulf Coast of Texas. In recent years, the population has been diluted with increasing numbers of small geese, presumably from the Tall Grass Prairie Population. The population in mid-December of 1974 was estimated at 36,000 birds. No population objectives have been developed for these geese. Good production and an increased fall flight are anticipated.

Great Basin Population.—Canada geese of this management population nest in southern Alberta, southwestern Saskatchewan, southeastern British Columbia, eastern Washington and Oregon, northeastern California, Idaho, Montana, Wyoming, northern Utah and Nevada. The *Intermountain Population* segment migrates to southern California, Arizona, and central New Mexico, whereas other members may winter near their breeding areas. This segment of the Great Basin Population was estimated at 49,000 birds last winter, no change from a year ago and 18 percent above average. The target population is 50,000 wintering birds. Another population segment that breeds and winters east of the Continental Divide in Montana, Wyoming, Colorado, and New Mexico has been designated as the *Hi-Line Population*. Geese of this population totaled 47,000 in January of 1975. The goal is for an increasing population to occupy the available winter habitat. Despite a delayed spring, average production is being reported.

Dusky Canada Goose Population.—The Copper River Delta in southeastern Alaska is the major breeding area of this relatively small population which winters principally in the Willamette Valley of western Oregon. Last year's population estimate was 25,500 birds, 42 percent above 1974 and 36 percent above the 10-year average. The population objective is 20–25,000 wintering geese. Despite favorable habitat conditions and a satisfactory breeding population, production was below average. Major ecological changes induced by the earthquake uplift of the Copper River Delta include invasion of the lowland flats by willows and alders, and the subsequent influx of coyotes and bears—both important goose predators and nest destroyers. An average of slightly above fall flight is anticipated.

"Small" Canada Geese

Tall Grass Prairie Population.—This population of "small" Canadas breeds on the western edge of the Eastern Arctic, migrates through the eastern tire of Central Flyway States, and winters in Oklahoma, along the Texas Coast, and in northeastern Mexico. The population goal, as measured by the mid-December inventory, is 200,000. The estimated population in December of 1974 stood at 133,500, well below the goal. Excellent habitat conditions and anticipated high production should result in substantial recovery of this population.

Short Grass Prairie Population.—This modest population breeds on the eastern edge of the western subarctic, migrates through the "shortgrass zone" of the Great Plains, and winters in southeastern Colorado, northeastern New Mexico, and the Oklahoma and Texas Panhandles. The population objective for this group of geese is expressed as a 5 percent increase per year. The estimated population in mid-December of 1974 was 103,000 birds. Satisfactory habitat conditions indicate that an improved fall flight can be expected.

Cackling Goose Population.—This, the smallest of all Canada geese, nests along the Bering Sea between the Yukon and Kuskokwim Rivers and winters in the Central Valley of California after lingering in the Klamath Basin in Oregon and northern California. Winter surveys for the race are usually incomplete or indefinite because of identification problems; consequently the population is usually grouped with other "dark" geese of the Pacific Flyway. Because they

nest at higher elevations than black brant, the population which breeds on the Y-K Delta, Alaska, was not affected by adverse habitat conditions. Production is thought to be average, or a little above, and a satisfactory fall flight is anticipated.

"Light" Geese Group (including Blue Geese)

Greater Snow Geese.—No hunting season has been allowed in the United States since 1931. This subspecies nests on Bylot Island, northern Baffin Island, Ellesmere Island, and adjacent Greenland. The past May survey placed the population returning north at 154 thousand birds. Snow vanished early from the major nesting area on southern Bylot Island. Excellent production is anticipated because of favorable habitat conditions and the fact that the population returning north this spring contained few birds of non-breeding age. The fall flight will probably be the highest in many decades.

Lesser Snow Geese.—Lesser snow geese, including the "blue" color morph, breed extensively through the Arctic and subarctic, with major colonies (in excess of 300,000 breeding birds) located at Bowman Bay on Baffin Island and at McConnell River in the Keewatin District. Intermediate-sized colonies are found at Cape Dominion on Baffin Island and on Banks Island. Snow geese follow various migration routes into the three western flyways, and winter in California, the Gulf Coast of Texas and Louisiana, and Mexico. No population objectives have been stated for lesser snow geese; however, the overall population has generally increased during the past two decades. The estimated mid-continent population in December of 1974 was placed at 1.1 million. The Pacific Flyway population segment, including an undetermined number of Ross' geese, was estimated at 447,000 in January of 1975, at approximately the same level as the 20 year means. We are optimistic about large fall flights containing high proportions of young departing from the Canadian Arctic this year; however, satellite imagery suggests that poor production may have occurred on Wrangel Island, USSR.

Ross' Geese.—Most of these geese, which nest in the western Arctic, winter in the Pacific Flyway, chiefly central California. The number estimated last winter was 22,000 representing a decrease of 20 percent from the preceding year and 10 percent below the 10-year average. Breeding habitat conditions were very good this year because of early disappearance of snow and ice cover; consequently a satisfactory fall flight is anticipated.

White-fronted Geese.—These geese which breed throughout the western Arctic and Alaska are composed of two population segments. One is associated with the Pacific Flyway and winters in California. The other segment—the mid-continent population—migrates through the western part of the Mississippi Flyway and the eastern tier of Central Flyway States to winter along the Texas-Louisiana Gulf Coast, and coastal and interior Mexico. The population goal for the mid-continent segment is 250,000 birds as assessed during the March surveys. The estimated mid-continent population in March of 1975 was 173,500. An average or poorer fall flight to the Central Flyway is anticipated because of late snow disappearance on the North Slope. Other white-fronts nesting on the Y-K Delta and other western Alaska locations are thought to have fared better.

Brant

Atlantic Brant.—Nesting in the eastern Arctic from Southampton Island north to Ellesmere Island and northern Greenland, these geese migrate via the seacoast to winter chiefly along the Atlantic Coast from New Jersey south to Virginia and North Carolina. The population experienced very poor production in 1971 and 1972, followed by excellent nesting success in 1973. Nesting success in 1974 was again poor. Hunting has been prohibited during the past three seasons. The 1974-75 winter survey placed the population at 88,400; an estimated 37,000 breeding pairs returned north this spring. Excellent habitat conditions prevailed throughout the species' breeding range and we anticipate that production was excellent and that an increased fall flight will occur.

Black Brant.—These geese nest in the western Arctic and western Alaska and migrate along the coast to Baja California, Mexico. In recent years some have migrated to the Mexican mainland coast. Black brant now have a tendency to forego stops in Washington, Oregon, and California during fall migration. The survey last winter placed the population at 123,500, representing a 5 percent decrease from 1974 and 13 percent below the 20-year average. The management goal is to maintain the population above 110,000 birds as measured by the Janu-

ary mid-winter survey. Production on the Yukon-Kuskokwim Delta was poorer than normal because flooding last fall adversely affected traditional nesting areas, causing breeders to shift into new habitats along the coast. This factor, plus the lack of information on possible losses from storm tides, and inability to determine the cause of disappointing production in 1974, causes us to be cautious in forecasting the fall flight. Consequently we predict it to be no better than average and perhaps below.

SUMMARY OF FALL FLIGHT FORECASTS

The production and fall flights of Arctic and subarctic nesting geese are expected to compare favorably with the outstanding flights of 1973. Population responses should be particularly evident among the populations nesting in the high Arctic. Because of poor production in 1974, these populations returning north this year were comprised chiefly of breeding age adults. Uniformly good production is expected among the various Canada goose populations, lesser snow geese, Ross' geese, and Atlantic brant nesting in Arctic and subarctic Canada. In contrast, average or less production and fall flights are expected for Alaska nesting white-fronts destined for the Central and Pacific Flyway. Prospects are not good for black brant nesting in Alaska although flights of Canada geese originating from Alaska should be at least average. The disappearance of snow from Wrangel Island was again tardy and below average production is anticipated from there.

Ducks

The fall flight forecasts from 1969 through 1972 were high when compared to those of the early and mid-1960's. However, they were below those of the late 1950's. The fall flight was smaller in 1973 than in other recent years and the mediocre flight resulted in little change in breeding duck numbers in 1974. The waterfowl breeding season in 1974 was accompanied by the best habitat conditions in many years. Although the number of ponds in prairie Canada is not as high as last year, habitat conditions remain excellent. A slight increase in duck breeding populations from 1974 and good production prospects indicate a larger fall flight in 1975 than in 1974. However, the increase is less than 10 percent. The 1975 fall flight is expected to be near the 1969-74 average fall flight.

WEATHER AND HABITAT CONDITIONS

May

The fall and winter of 1974-75 was generally dry and open in the north central United States and prairie Canada. The initial outlook was for rather poor waterfowl habitat conditions in 1975, but early spring storms markedly improved the habitat; April and May were colder and much wetter than normal in nearly all prairie survey units. Despite the late and abundant precipitation this spring the May pond index in 1975 for prairie Canada was 17 percent below the 1974 figure (May 1974 was the second wettest year in twenty years of survey records). A better indication of habitat quality in 1975 is that the number of May ponds this year was 36 percent above the long term average for prairie Canada.

Precipitation in southern Alberta was average in May and the pond index was 36 percent below the record number of ponds tallied there in 1974, but was 30 percent above the long term average. Although April and May were very wet months in southern Saskatchewan, widespread flooding, common in 1974, did not occur this spring. May was cool in Saskatchewan, the season was late and field work was delayed. Upland cover was generally poor, but over-water nesting cover was judged to be good to excellent. Pond counts in southern Saskatchewan in May 1975 were 4 percent below 1974 and 64 percent above the long term average. The southern Manitoba May pond index in 1975 declined 27 percent from the very high counts obtained in 1974, but was near the average level (-1 percent). May was cool in southern Manitoba with average precipitation. The phenology was near normal, upland cover was considered fair to good and, overwater nesting cover good.

March blizzards deposited over 20 inches of snow in parts of North Dakota and were followed by rain in April and May. The result was extensive flooding in North Dakota with the heaviest floods in the Red River and Souris valleys. In spite of the abundant precipitation, May ponds declined slightly (-3 percent) from 1974 levels, but remained 81 percent above the 1960-69 average. The season was late, as a result of the cool wet spring, and field work was far behind schedule. South Dakota also received abundant moisture this spring, and the 1975

pond index was 40 percent above that of 1974 (a dry year) and 28 percent above the 1960-69 average. Field work proceeded normally and nesting cover was only fair, due to the intensive agricultural operations. Winter and spring in Montana was similar to other areas with an open winter followed by a very wet spring. The 1975 water index for eastern Montana was 3 percent above that of 1974 and 41 percent above the long term average. May was a cool month and the season was delayed, agricultural operations were perhaps two weeks behind schedule.

Biologists in the northern portions of Alberta, Saskatchewan and Manitoba reported conditions similar to those in the prairies to the south. The winter was relatively mild and open, but the spring was cold and wet. Water levels were lower this spring than the extremely high levels experienced in 1974. There was far less flooding this year and habitat conditions in 1975 were considered favorable for nesting waterfowl. The phenology this May in these northern forests was about two weeks later than normal. In the Northwest Territories spring was late in the southern portions of the survey unit, but normal in the more northern areas. Habitat conditions were thought to be satisfactory for nesting waterfowl.

Conditions in Alaska this year were near normal in the interior areas, but spring was delayed on the northwest coast. Flooding was not extensive on most rivers and it was felt conditions were such that good waterfowl production was possible.

July

The generally wet weather of April and May continued through June in southern Canada. At the beginning of July the growing season precipitation (that since April 1) averaged well above normal at nearly all stations in the three Prairie Provinces. In contrast, July was hot and dry on the prairies, and despite the very wet June there was the usual disappearance of shallow water areas. Fifty percent of the ponds were lost between May and July 1975, the average rate of water loss for prairie Canada. The pond index for July 1975 for prairie Canada was 2.4 million, a decrease of 12 percent from that recorded in July 1974 and 40 percent above the long term average (Table 2).

The southern Alberta survey unit experienced a substantial water loss in the lower three survey strata between May and July. The northern portion of this unit remained wet, and this improved the production outlook for the entire area. July ponds in 1975 were down 42 percent from 1974, but were above average for the area. Summer water conditions in both Saskatchewan and Manitoba in 1975 were very similar to those found in 1974. July ponds this year in Saskatchewan were 2 percent above the 1974 counts and 81 percent above the long term average. Water is considered to be good to excellent across Saskatchewan, except for some drying in the west. In southern Manitoba pond counts this July were 2 percent below those of a year ago and 8 percent above average levels. Brood water was widely available in southern Manitoba.

North Dakota was waterlogged by the end of June as a result of spring blizzards and continuous rains. July was hot, but recurring storms brought substantial precipitation to the area. Consequently, July pond numbers in North Dakota in 1975 were 59 percent higher than in 1974, and 37 percent above the long term average. Parts of North Dakota have been designated disaster areas as a result of flooded waters and saturated fields. South Dakota did not receive the rains that soaked North Dakota and July was hot and dry. Despite generally dry conditions, the number of water areas in South Dakota this July was 39 percent above 1974 (a very dry year) and 13 percent below average. Brood water is scattered and not everywhere available and habitat conditions are disappointing after the wet May of 1975. Montana was hot and dry in July, but there was good carryover of water from the wet spring. July ponds in Montana were 52 percent above the 1974 counts and 39 percent above the long term average. Brood water was generally available throughout this survey unit.

The forested areas north of the Canadian prairies had more nearly normal water levels this year than in 1974, when flood conditions were common in many areas. Vegetation was reported luxuriant in some regions this year as a result of the low water levels. Weather conditions were judged to be favorable for waterfowl production this year. Habitat and weather conditions in Alaska were considered satisfactory for duck production.

In summary, habitat conditions in prairie Canada and the north-central United States are favorable for waterfowl production. Brood water is widely available and emergent vegetation is lush. There has been a minimum of burning this summer but an unusual amount of haying was observed during the surveys. Weather conditions in general were conducive to good waterfowl production.

POPULATION STATUS, PRODUCTION AND FALL FLIGHT FORECAST

Duck Breeding Populations

Procedures used in the 1975 survey were little changed from those employed in 1974 and were limited to the relocation of some air-ground transects. The 1975 duck breeding population was only 2 percent above that of 1974 and 3 percent above the 1955-73 average (Table 3). The long term trend in total duck breeding populations is shown in Figure 2. Substantial increases in breeding populations, compared to 1974, were recorded in Montana, Colorado, South Dakota and California. Smaller increases, in terms of percentage changes, were recorded in the Northwest Territories and southern Saskatchewan. Alaska-Old Crow Flats was the major survey unit reporting a substantial decrease in breeding duck numbers. All other survey areas reported relatively small gains or losses. The size and distribution of the breeding duck population in western Canada in 1975 was not unlike that of 1974. The major difference was an increase in breeding duck numbers in the north central United States and a decrease in Alaska. Long term breeding population estimates for ten important species of ducks are given in Table 4 and trends are shown in Figures 3-5. Increases from 1974 were indicated for all species except wigeon (-17 percent), green-winged teal (-6 percent) and pintail (-5 percent). Substantial increases were indicated for redhead (+35 percent), canvasback (+22 percent) and blue-winged teal (+18 percent). In those survey units with material numbers of breeding mallards increases were recorded in 1975 in Montana and both Dakotas and a decrease was reported in Alaska. Breeding duck populations in 1975 for eight of the species listed in Table 4 are above the long term average. Only wigeon (-20 percent) and mallard (-10 percent) breeding population remain below average levels. No direct estimates of black duck numbers are available from the breeding ground surveys, but the January 1975 winter survey (Figure 6) records a small increase in black duck numbers compared to 1974. The black duck population remains below the long term average population level. In the Atlantic Flyway black ducks in January 1975 were 3 percent below the 1974 level and 19 percent below the long term average. Mississippi Flyway black ducks were 47 percent above the 1974 and 19 percent below the ten year average. Banding and harvest data indicate the eastern wood duck population remained at a satisfactory level.

Production Indices

July waterfowl surveys are conducted to obtain information about the probable success of the duck nesting season and anticipated production. The primary indicators are the brood index and the late nesting index. In addition, predictions of the probable mallard production ratio have been made annually since 1967. The accuracy of the estimated mallard production ratio may be determined the following year by adjusting the age ratio in the United States mallard harvest for differential vulnerability, as calculated from band recovery rates.

The 1975 brood index of 285 in the southern Prairie Provinces of Canada is 6 percent below the 1974 index and 23 percent below the 1955-74 average. It is equal to the average number of broods recorded from 1969-1974 during the recent generally favorable Prairie habitat conditions. The 1975 late nesting index, an indication of possible late summer broods, is 20 percent higher than 1974 and 96 percent above the long term average. This indicates a late hatch but the apparent difference from the long term average may be confounded by earlier summer surveys in recent years. The sum of the brood index and the late nesting index is an indicator of total expected broods in 1975. The sum of the brood index and the late nesting index this year is 9 percent above that of 1974 and a duck production in the southern Prairie Provinces is expected to be similar to that of a year ago and near the long term average production for the area.

Production indexes in North Dakota are substantially better this year than last, and breeding populations are similar to those of 1974. Improved duck production is expected from North Dakota in 1975. In South Dakota and Montana the production indexes are very similar to those of a year ago, but breeding populations in 1975 are nearly 50 percent larger than those of 1974. As a result of the increased breeders, there should be a larger fall flight from these States.

In northern Saskatchewan and northern Manitoba breeding populations are similar to those of last year but production indexes are better than in 1974. The fall flight from this area in 1975 should be larger than that of 1974. In northern Alberta and the Northwest Territories breeding populations increased in 1975 compared to 1974, and with average production the fall flight from that area is expected to be increased in 1975. Conditions in Alaska are reported to be favorable for duck production, however, breeding populations in 1975 were much reduced from 1974 and are substantially below average; this will limit the fall flight from the area.

Predictions of the mallard production ratio are made each year. In 1974 the estimate was 1.4 immatures per adult and later analysis of wing survey and banding data also indicated a 1.4 production ratio. The mallard production rate in 1975 is predicated to be 1.3 immatures per adult. The 1975 estimate is 7 percent below last year's age ratio and 30 percent above the 1955-74 average.

Fall Flight Forecast by Major Production Areas

Alaska.—Duck breeding populations were reduced from 1974 and are below average. Spring weather and habitat conditions were favorable this year. The fall flight of ducks from this area will be smaller than that of 1974.

Northern Alberta and the Northwest Territories.—The 1975 duck breeding population was larger than last year's population. Production was estimated to be average and the fall flight from this area is expected to be larger than that of last year.

Northern Alberta and the Northwest Territories.—The 1975 duck breeding population was unchanged from that reported in 1974 and production is slightly greater than in 1974. An increased fall flight is expected from this area.

Southern Alberta.—Breeding duck numbers were little changed from 1974, and the production index was slightly higher than a year ago. However, the fall flight from this unit will be similar to that of 1974.

Southern Saskatchewan.—Duck breeding populations increased and production was similar to that of last year. There will be an increased fall flight from southern Saskatchewan in 1975, however, it will be less than 10 percent greater than 1974.

Southern Manitoba.—There was a small decrease in the duck breeding population but production in this unit is better this year, resulting in a fall flight similar to that of 1974.

North and South Dakota.—A large increase in breeding ducks occurred in the Dakotas in 1975. The combined production for the two States is better than that of 1974 and the fall flight from the Dakotas this year is expected to be substantially larger than a year ago.

Others.—The 1974 duck breeding population in *Montana* was much higher than in 1974. Production was average this year, and we anticipate an increased fall flight from *Montana* in 1975. Fall flights from *Colorado* and *California* are expected to be larger than a year ago. The predicted 1975 fall flights from *Minnesota* and *Nebraska* are similar to those of 1974. The 1975 fall flight from *Wyoming* should be smaller than that of 1974. A general over-view of the 1975 fall flight forecast compared to the 1974 forecast is shown in Figure 7.

Fall Flight Forecast by Flyways

Pacific Flyway.—Duck flights from southern Alberta will be similar to last year while those from northern Alberta and the Northwest Territories will be slightly larger than in 1974. The flight from Alaska will be substantially less than last year. Although increases are expected from California and Montana, the overall fall flight of ducks to the Pacific Flyway will be similar to that of 1974 (Figure 8).

Central Flyway.—Fall flights of ducks from the Northwest Territories, northern Alberta, Montana, Colorado and the Dakotas will increase significantly this year. A slight increase is expected from Saskatchewan. Decreased fall flights are expected from Wyoming and Alaska. The resulting fall flight in the Central Flyway will be larger than that of 1974 (Figure 9).

Mississippi Flyway.—The fall flights from the Northwest Territories and northern portions of the Prairie Provinces will be greater this year than last. These increases and improved conditions in the Dakotas should lead to a larger fall flight than last year. The fall flight of ducks from Alaska will be smaller than last year. A slight increase is expected from southern Saskatchewan and the 1975 fall flight of ducks to the Mississippi flyway should be greater than in 1974 (Figure 10).

Atlantic Flyway.—Fall flights of ducks from northern survey areas will be increased from 1974 with the exception of Alaska, where a decreased fall flight is expected. The 1975 fall flight from southern Saskatchewan will be slightly greater than in 1974, but the fall flight from the southern Prairie Provinces will be similar to last year. The 1975 fall flight of ducks into the Atlantic Flyway is predicted to be similar to last year (Figure 11).

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TABLE 1.—GOOSE AND BRANT WINTER POPULATION INDICES, 1973-75

Species	[In thousands]					
	Pacific flyway			Atlantic flyway		
	January		Percent change	January		Percent change
1974	1975	1974		1975		
Canada geese:						
Intermountain.....	49	49	(1)	760	819	+88
Dusky Canada geese.....	19	27	+42			
Other dark geese: White-front, Canada, lesser, cackling.....	280	326	+16			
Snow geese.....	² 443	² 447	+1	³ 136	³ 154	+13
Ross' geese.....	(27)	(22)	+19			
Black brant, brant.....	⁴ 130	⁴ 123	+5	88	88	(1)
	Mississippi flyway			Central flyway		
	Mid-December		Percent change	Mid-December		Percent change
	1973	1974		1973	1974	
Canada geese.....	677	662	-2	457	389	-15
White-fronted geese.....	43	40	-7	49	40	-20
Snow geese.....	529	442	-16	674	682	+1
	Midcontinent					
	1973	1974	1975	Percent change		
White-fronted geese (March).....		201	174	-14		
Snow geese (mid-December).....	1,202	1,123		-7		

¹ No change.

² Count believed to be incomplete.

³ Based on May surveys in St. Lawrence River area of Quebec.

⁴ Includes Mexico.

TABLE 2.—SUMMARY OF THE NUMBER OF MAY AND JULY PONDS IN THE SOUTHERN PORTIONS OF ALBERTA, SASKATCHEWAN, AND MANITOBA, 1955-75

Year	May ponds (thousands)	July ponds (thousands)	Percent of ponds remaining
1955	7,303	3,352	45.9
1956	4,857	2,218	45.7
1957	3,325	1,391	41.8
1958	3,241	1,415	43.7
1959	1,955	1,271	65.0
1960	3,647	1,437	39.4
1961	1,654	562	34.0
1962	2,275	814	35.8
1963	2,475	1,813	73.2
1964	2,743	1,308	47.7
1965	3,536	2,231	63.1
1966	3,724	1,979	53.1
1967	3,782	1,498	39.6
1968	1,636	803	49.1
1969	2,963	1,658	56.0
1970	4,389	2,613	59.5
1971	3,865	2,017	52.2
1972	3,435	1,313	38.2
1973	1,888	1,736	91.9
1974	5,563	2,736	50.8
1975	4,623	2,397	51.8
1956-62 average	2,993	1,301	43.5
1955-74 average	3,413	1,708	50.0
Percent change in 1975 from:			
1974	-16.9	-12.4	+2.0
1956-62 average	+54.5	+84.2	+19.1
1955-74 average	+35.5	+40.3	-3.6

TABLE 3.—DUCK BREEDING POPULATION ESTIMATES ADJUSTED FOR BIRDS PRESENT THAT WERE NOT SEEN BY AERIAL SURVEY CREWS 1974-75 (EXCLUDES SCOTERS, EIDERS, OLUSQUAWS AND MERGANSERS).

[Estimates in thousands]

Survey area	1974	1975	Percent change
Alaska—Old Crow	4,199	2,752	-34
North Alberta—Northwest territories	7,450	8,427	+13
North Saskatchewan—North Manitoba—West Ontario	3,431	3,515	+2
South Alberta	7,265	7,012	-3
South Saskatchewan	9,313	10,240	+10
South Manitoba	1,730	1,616	-7
Montana	872	1,278	+47
Wyoming	318	283	-11
Colorado	127	157	+24
North Dakota	3,452	3,246	-6
South Dakota	1,080	1,610	+49
Nebraska	166	154	-7
Minnesota	580	600	+3
California	112	156	+39
Total	40,095	41,046	+2

TABLE 4.—BREEDING POPULATION ESTIMATES FOR 10 SPECIES OF DUCKS, 1955-75

[In thousands]¹

Year	Mallard	Gadwall	American wigeon	Green-winged teal	Blue-winged teal	Northern shoveler	Pintail	Red-head	Canvas-back	Scaup
1955.....	10,309	1,106	3,334	2,054	6,436	1,965	9,252	701	595	7,100
1956.....	11,675	1,202	3,713	1,899	6,268	2,084	10,124	896	692	6,595
1957.....	9,905	1,102	3,208	1,294	5,449	1,744	6,857	652	601	6,535
1958.....	12,885	688	3,372	1,619	5,799	1,515	6,889	492	713	6,040
1959.....	10,292	683	3,779	3,154	5,300	1,649	7,228	642	482	8,220
1960.....	8,206	873	3,165	1,630	4,303	1,860	5,770	542	575	5,567
1961.....	8,290	1,422	3,219	2,216	4,823	1,625	4,860	437	396	6,764
1962.....	6,144	1,610	2,721	1,119	3,890	1,633	4,310	664	385	6,399
1963.....	7,360	1,578	2,209	1,754	4,587	1,435	4,361	396	524	6,564
1964.....	6,974	1,223	2,630	2,072	4,944	1,685	4,111	561	658	6,326
1965.....	5,948	1,693	2,695	1,527	4,628	1,607	4,301	569	505	5,383
1966.....	7,402	1,976	2,901	2,219	5,616	2,272	5,777	747	683	5,422
1967.....	8,205	1,637	2,637	1,944	4,715	2,244	5,881	846	556	5,877
1968.....	7,586	2,098	2,783	1,805	3,697	1,811	4,225	502	557	5,971
1969.....	8,066	1,837	3,192	1,992	4,515	2,151	6,390	759	530	6,339
1970.....	10,379	1,698	3,752	2,260	5,634	2,270	6,999	834	602	6,930
1971.....	9,844	1,733	3,425	2,352	5,426	2,052	6,291	693	441	6,149
1972.....	9,867	1,776	3,428	2,407	5,674	2,505	7,876	489	429	9,527
1973.....	8,687	1,198	3,666	2,444	4,867	1,657	5,114	754	696	7,535
1974.....	7,468	1,461	3,000	2,137	4,871	2,034	7,160	688	550	7,109
1955-74 average..	8,775	1,430	3,141	1,995	5,072	1,890	6,189	643	558	6,618
1975.....	7,897	1,544	2,503	2,016	5,751	2,068	6,818	930	670	7,600
Percent change in 1975 from:										
1974.....	+6	+6	-17	-6	+18	+2	-5	+35	+22	+7
1955-74 average....	-10	+8	-20	+1	+13	+9	+10	+45	+20	+15

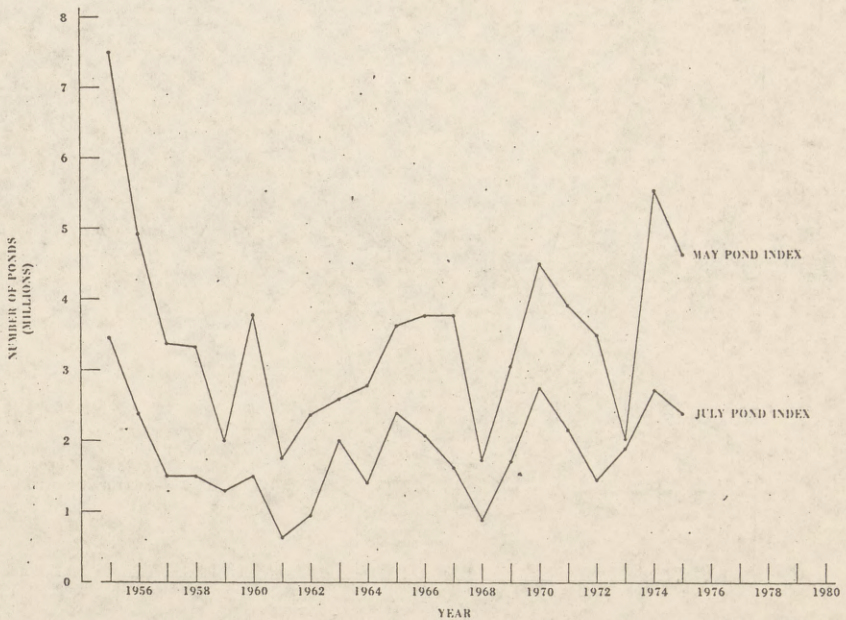
¹ All duck indices adjusted for visibility bias.

FIGURE 1.—Numbers of water areas in the southern portions of Alberta, Saskatchewan, and Manitoba, 1955-75.

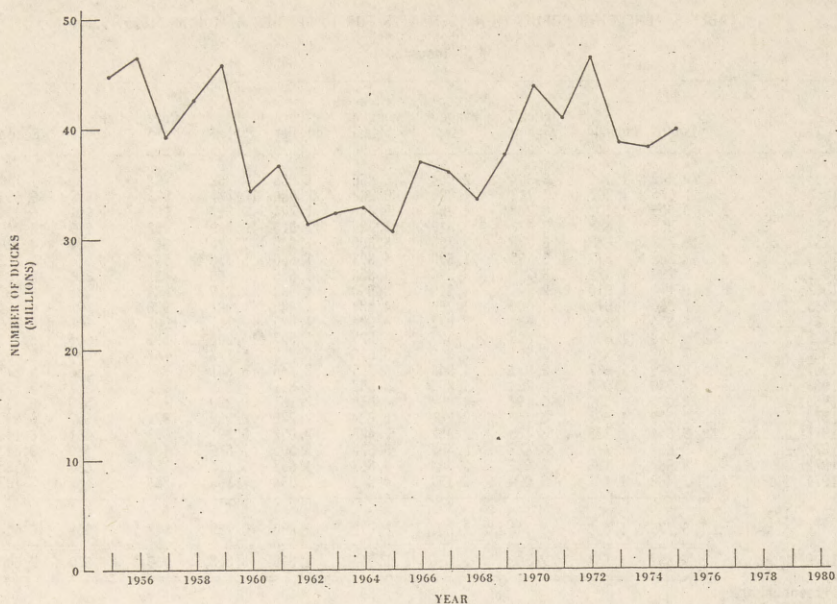


FIGURE 2.—Duck breeding populations in North America, 1955–75 (adjusted for birds not recorded by aerial crews; includes areas with comparable annual surveys; excludes scoters, eiders, mergansers, and oldsquaws).

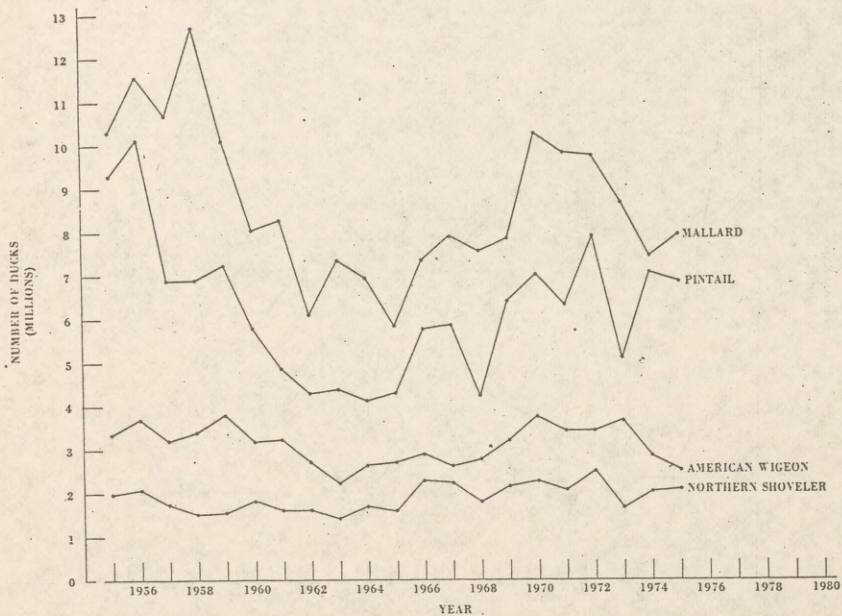


FIGURE 3.—Mallard, pintail, American wigeon and northern shoveler breeding population estimates, 1955–75 (adjusted for birds not recorded by aerial crews; includes areas with comparable annual surveys).

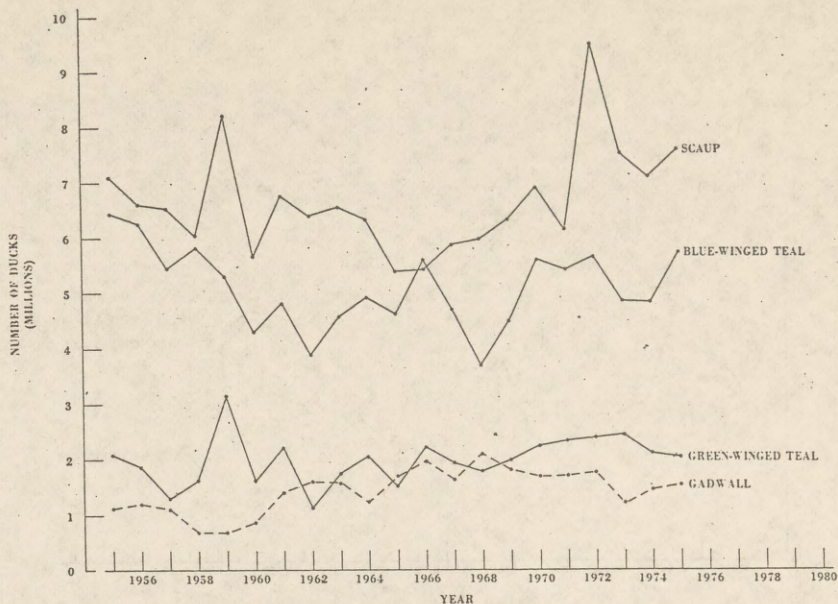


FIGURE 4.—Scaup, blue-winged teal, green-winged teal and gadwall breeding population estimates, 1955-75 (adjusted for birds not recorded by aerial crews; includes areas with comparable annual surveys).

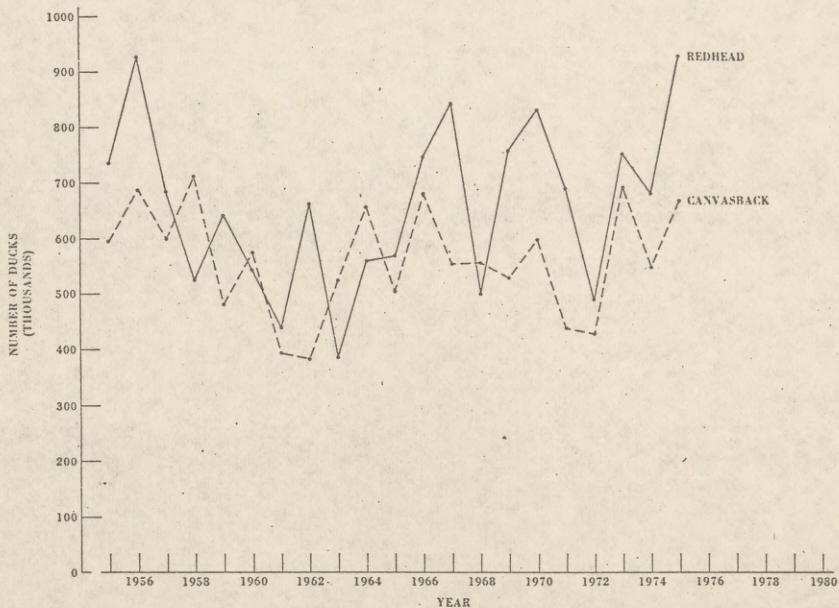


FIGURE 5.—Redhead and canvasback breeding population estimates, 1955-75 (adjusted for birds not recorded by aerial crews; includes areas with comparable annual surveys).

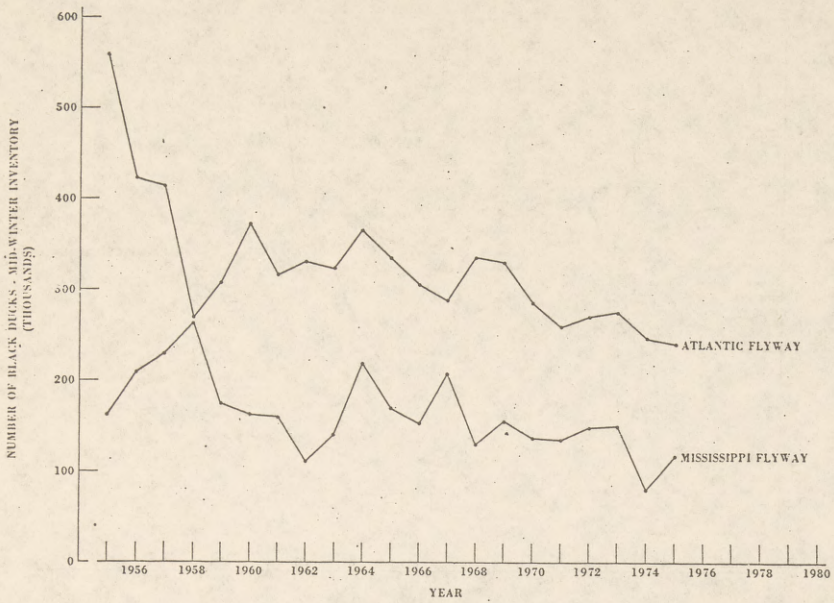


FIGURE 6.—Trends in black duck populations as shown by the winter survey, 1955-75.

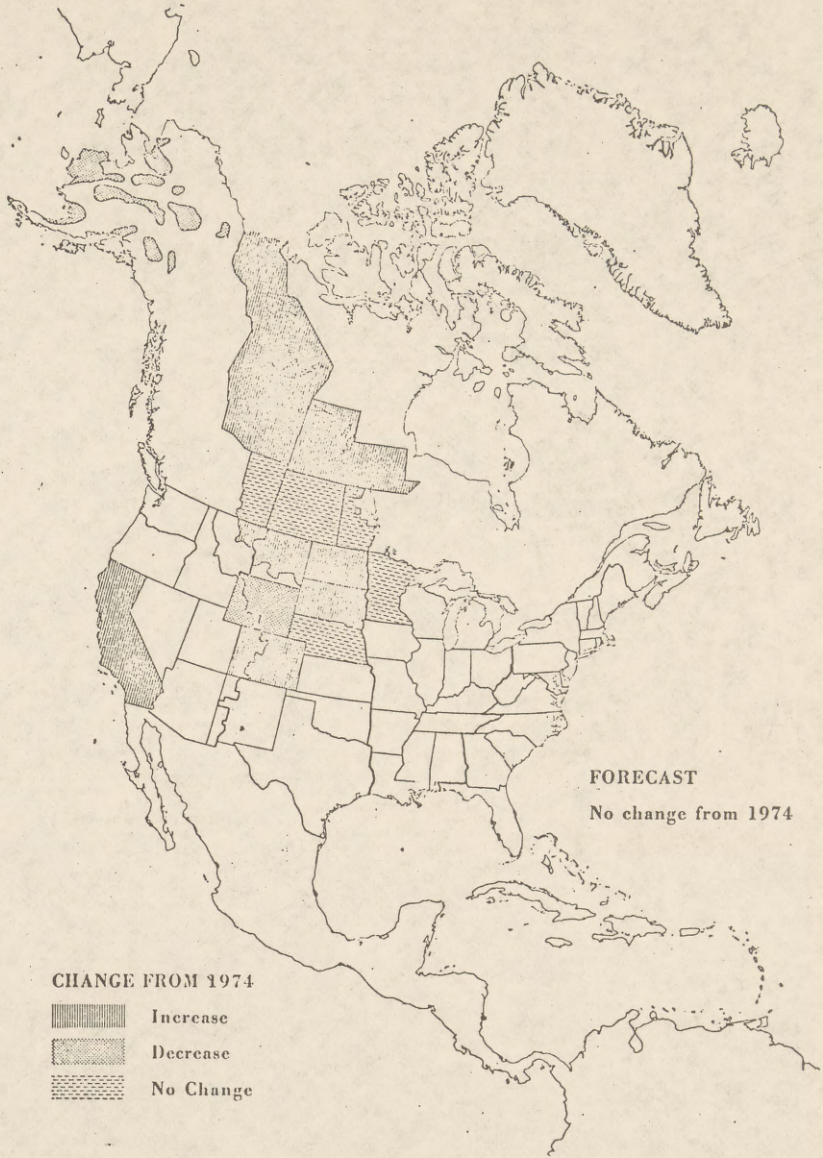


FIGURE 7.—Duck flight forecast, 1975.

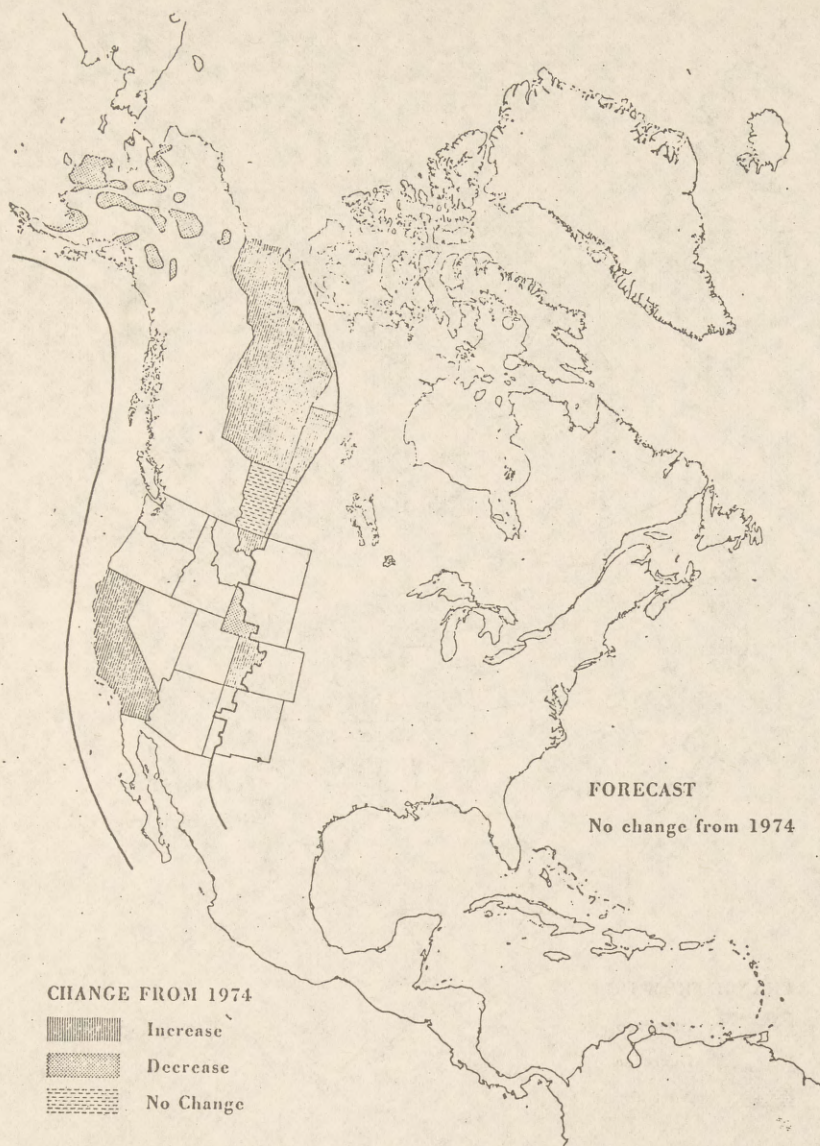


FIGURE 8.—Pacific flyway duck flight forecast, 1975.

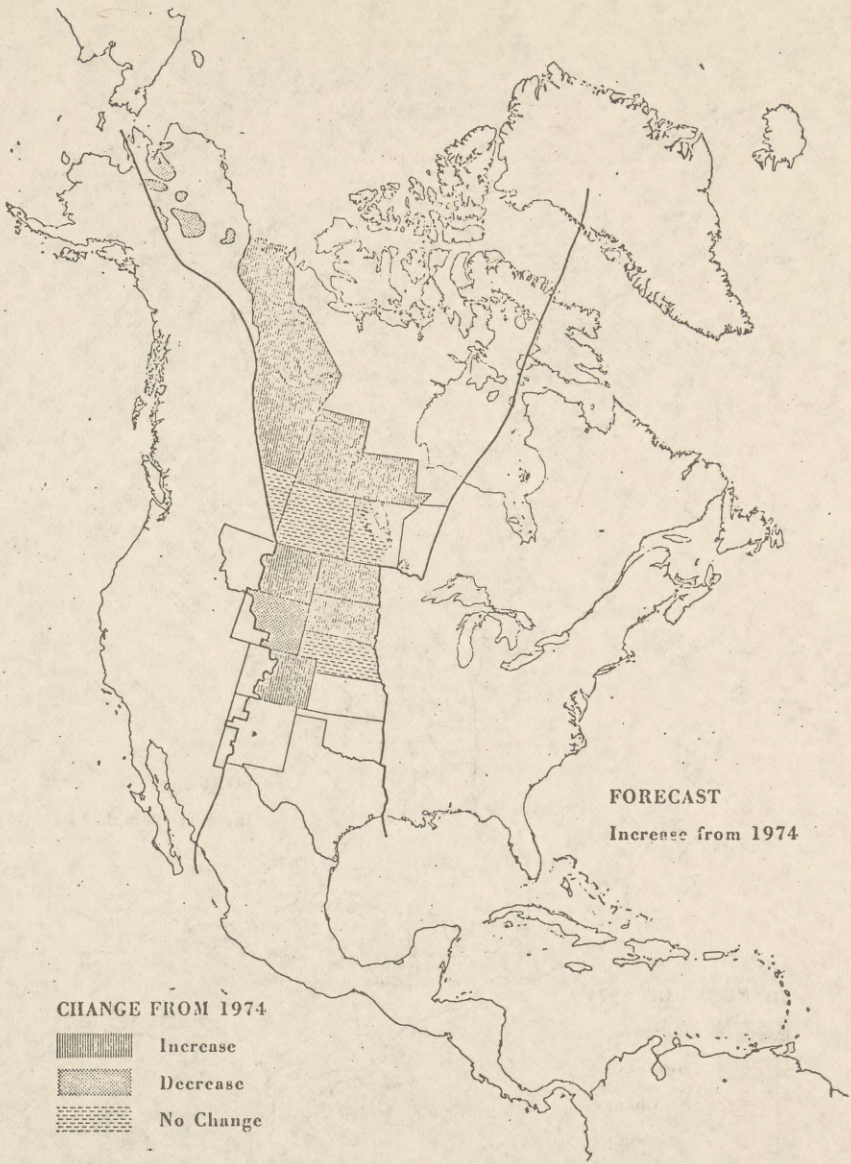


FIGURE 9.—Central flyway duck flight forecast, 1975.



FIGURE 10.—Mississippi flyway duck flight forecast, 1975.

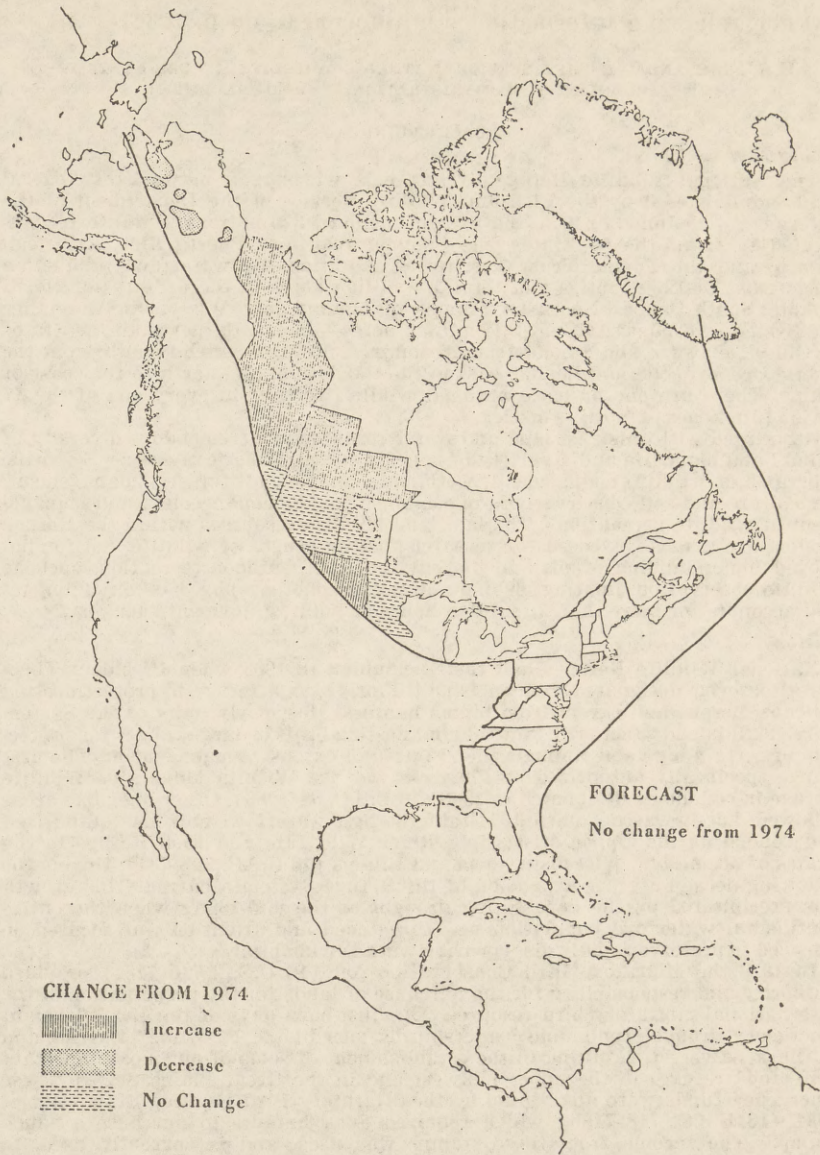


FIGURE 11.—Atlantic flyway duck flight forecast, 1975.

[The following information was referred to on p. 123:]

U.S. FISH AND WILDLIFE SERVICE, NATIONAL WILDLIFE REFUGE SYSTEM—
ESTABLISHMENT, ADMINISTRATION, AND MANAGEMENT

BACKGROUND

Description

The National Wildlife Refuge System is a widespread network of Federal lands administered by the Fish and Wildlife Service of the Department of the Interior. As of June 30, 1975, the System included 379 national wildlife refuges located in 49 of the 50 States, the Commonwealth of Puerto Rico, American Samoa, and the Pacific Trust Territories. Additionally, waterfowl production areas exist in 127 counties and total 1.4 million acres in the 6 States of North Dakota, South Dakota, Nebraska, Minnesota, Montana and Wisconsin. Altogether the System encompasses almost 34 million acres—an area larger than the States of Ohio, Delaware and Rhode Island combined. Refuges extend south from the Arctic Ocean to the mid-Pacific, east to the Caribbean, and north to the coast of Maine. There are one or more national wildlife refuges in every one of the 17 major Life Zones of North America.

Associated with this vast land and water resource is a tremendous diversity of animal and plant life and a variety of benefits for the American people. Scientific programs of wildlife management, wetlands management, forestry management, agriculture and soil conservation are combined for the enhancement and management of wildlife populations. The land and wildlife resources within the Refuge System are extensively used for research for the benefit of wildlife and for improved understanding of man in his environment. Outdoor recreation, such as wildlife observation, hunting, fishing and nature photography, has major impact and accounts for more than 75 million hours of public enjoyment each year.

History

National Wildlife Refuges had their beginning in 1903 when President Theodore Roosevelt designated Pelican Island, Florida, as a refuge to protect nesting pelicans, herons and egrets from plume hunters. Most early units of the System were small island sanctuaries for colonial nesting birds or large ranges for protection of certain big game animals then in need of extensive management. The first refuge specifically authorized by Congress was the Wichita Mountains Wildlife Refuge in Oklahoma designated in 1905 (16 U.S.C. 684-686). Other big game areas followed, but it was not until 1924 that the first waterfowl unit was authorized and funded as the Upper Mississippi River Wild Life and Fish Refuge in the States of Minnesota, Wisconsin, Iowa and Illinois (16 U.S.C. 721-731). During the following decade a great expansion of the Refuge System occurred. This growth was precipitated by the devastating drought of the mid-1930's when the entire continental waterfowl population was threatened and attention was focused on the need to preserve rapidly disappearing waterfowl habitat.

In 1929 the Migratory Bird Conservation Act (16 U.S.C. 715-715s) provided authority and responsibility for the purchase of lands for the perpetuation of the international migratory bird resource. The dust-bowl days of the 1930's brought emergency drought funds and leadership by men like J. N. "Ding" Darling and J. Clark Salyer II, resulting in the establishment of some of our most important waterfowl refuges in the upper midwest and in the Great Plains States. These emergency funds were augmented by the Migratory Bird Hunting Stamp Act of 1934 (16 U.S.C. 718-718h) which required duck hunters to purchase a "duck stamp." The income from these stamps was used, and is currently used, to acquire waterfowl refuges.

In 1956 the Fish and Wildlife Act (16 U.S.C. 742a-742j) authorized the acquisition of refuge lands for all kinds of wildlife. The widespread drainage in the prairie pothole region in the 1950's resulted in the Wetlands Loan Act of 1961 (16 U.S.C. 715k-3-715k-5) for accelerated acquisition of migratory waterfowl habitat. The Service has used this Congressional advance and the proceeds from migratory bird hunting stamps to purchase in fee and easement some 1.4 million acres of waterfowl habitat in the prairie pothole country of the upper midwest.

More recent Acts have granted authority to provide and effectively manage a national network of lands and water to meet the needs of wildlife for the benefit of people. The Refuge Recreation Act of 1962 (16 U.S.C. 460k-1) provided policy and administrative guidelines for recreation. The Wilderness Act of

1964 (16 U.S.C. 1131-1136) required the Secretary of the Interior to review every roadless area of 5,000 acres or more and every roadless island on refuges for suitability as wilderness. Congress has to date formally designate 36 wilderness areas which encompasses 575,620 acres on 41 national wildlife refuges; another 63 recommendations are before the Congress for consideration. The National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee) gave official designation to national wildlife refuges as a System. The Land and Water Conservation Fund Act of 1965 (16 U.S.C. 4601-4-4606-11) and the Endangered Species Act of 1973 (16 U.S.C. 1531-1543) provided funding and authority to establish refuges for threatened and endangered species.

The Alaska Native Claims Settlement Act of 1971 (43 U.S.C. 1601) and the Marine Mammal Protection Act of 1972 (16 U.S.C. 1361, 1362, 1371-1384, 1401-1407) are recent Acts that have and will continue to play major roles in the growth and accomplishments of the System. Under the Alaska Native Claims Settlement Act the System is being considered for expansion by 31.6 million acres in 9 units.

Program Management

In 1970 recognition of the vast scope and complexity of the National Wildlife Refuge System led to the development of a unique management system which is still in use. It is an output oriented system based on the standard program planning, budgeting and evaluation (PPBE) concept. It consists of five components: objective setting, program scheduling (budgeting), cost accounting, output reporting, and evaluation.

The objective setting portion defines in specific terms the objectives for each individual refuge through a six-year planning period. Program scheduling anticipates the costs, including capital investment, operations and maintenance and manpower required to produce these planned accomplishments. The cost accounting portion captures actual costs while the output reporting section captures actual accomplishments. Development of this planning system included a lengthy process of defining and stating the mission and objectives of the National Wildlife Refuge System, identifying and defining System outputs, and devising a method to evaluate a wide variety of outputs on a common basis.

Recently, with the approval of Congress, the Fish and Wildlife Service changed its overall administrative and budget structure. Beginning in fiscal year 1974, the Service began to budget and manage activities by "programs" using a management-by-objective approach. (A program is a set of diverse, ongoing activities and functions—all aimed at accomplishing a specified goal, or set of goals). Program management allows the bringing together of all the various inputs and processes of the Service wherever they occur, and these can be used as an aid in achieving the objectives of specified programs. It implies that the various divisions, branches or other organizational entities of the Service may be used by any or all programs as required. The current program structure, which includes all the activities of the Fish and Wildlife Service, is as follows:

1. Environmental Contaminant Evaluation.
2. Land and Water Resource Development Planning.
3. Biological Services.
4. Migratory Birds.
5. Mammals and Nonmigratory Birds.
6. Animal Damage Control.
7. Wildlife Cooperative Research.
8. Coastal Anadromous Fisheries.
9. Great Lakes Fisheries.
10. Inland Fisheries and Reservoirs.
11. Fishery Cooperative Research.
12. Endangered Species.
13. Interpretation and Recreation.
14. Executive Director.
15. Administrative Support.
16. Grants-in-Aid.

The Service is presently in the process of meshing the refuge PPBE system with the Service-wide program approach. Prior to the onset of program management, the National Wildlife Refuge System set its objectives independently of the rest of the Service. Now the Refuge System's objectives reflect the ob-

jectives and policies of the broader Service programs from which money and manpower are allocated. Communication and coordination across program lines are being developed. Service programs communicate to the Refuge System the Servicewide objectives and the role refuges can play in accomplishing those objectives; they also indicate in the form of targets how much money and manpower will be available. The Refuge System in turn provides programs with information on how much land-based capacity it has to offer and how much public demand there is for refuge outputs.

Implementing program management presents some very real challenges to all Service personnel. Personnel who have thought about the Refuge System in isolation in the past must now think about the Fish and Wildlife Service as a whole and about the role refuges must play in meeting the overall mission of the Service. Many key Service employees who have never been involved with the Refuge System now find themselves with new responsibilities related directly to the National Wildlife Refuge System.

OBJECTIVES

The mission of the Fish and Wildlife Service is:

"To assure maximum opportunity for the American people, consistent with their needs and desires, to benefit from fish and wildlife resources as part of man's natural environment."

Each of the Service programs support this mission in a different way, through different goals. The organizational components such as refuges represent processes through which program goals are achieved. The possession of land in itself is not a mission of the Service, but in order to reach the goals of the endangered species program, the migratory bird program, the marine and non-migratory bird program and public wildlife oriented recreation it is necessary and desirable to possess in fee or easement certain lands and water.

The main contribution of the refuge System occurs in four programs, each of which is described below:

Endangered Species Program

The goal of this program is to preserve, restore and enhance all species of animals and plants that are endangered or are threatened with becoming endangered. The National Wildlife Refuge System supports this goal by providing habitat, sanctuary, isolation, intensive management or other particular management needs of these species on refuge lands.

Currently the quantified objective for the National Wildlife Refuge System under the Endangered Species Program is to provide for 176 million use days by threatened and endangered species on existing refuge lands. (A use day is the presence of one individual animal on a refuge for one day.) This number will change from year to year as new refuges are acquired and as species are added or deleted from the list. At the present time 44 endangered and threatened species of fish and wildlife are found on one or more of 139 refuges (attachment 1). Examples of new refuges established for endangered species include Attwater Prairie Chicken National Wildlife Refuge in Texas, Columbian White-tailed Deer National Wildlife Refuge in Washington, and Hopper Mountain National Wildlife Refuge (for the California condor) in California.

The Endangered Species Program is a likely growth area for the System because many such species require extreme protection, specialized manipulation of habitat, controlled research areas, assured preservation of remaining habitat or other similar actions common to refuge management. To fill these needs, new refuges may be established and existing refuges may be used as release sites, locations for hatcheries, study areas, or whatever is needed to restore these species to their niche in the Nation's environment.

Migratory Bird Program

The goal of this program is to perpetuate the international migratory bird resource for the benefit of people throughout the world. The National Wildlife Refuge System supports this goal by providing breeding, resting, and watering habitat sanctuary and other needs of migratory birds. Units of the System serve as islands of habitat throughout the United States where waterfowl (ducks, geese and swans) and other migratory birds nest, rest and feed.

The current quantified objectives of this program for the National Wildlife Refuge System are:

To produce 2.5 million waterfowl on existing refuge lands

To provide for 1.8 billion use days by waterfowl on existing refuge lands, and

To provide for 4 billion use days by other specially-recognized migratory birds on existing refuge lands (specially-recognized migratory birds include hawks, owls, mourning doves, marsh and water birds and others in which the American people, for various reasons, show special interest).

To produce these outputs requires substantial investments of time and funds: to build dikes for flooding marshlands, to grow agricultural crops for waterfowl food, to plant nesting cover, to regulate hunting, etc. Refuge personnel may trap and band birds, enforce waterfowl hunting regulations, conduct studies on migratory birds, administer grazing programs, or perform a myriad of other tasks directed toward enhancing the migratory bird resource.

Of the four programs, it is with this one that the Refuge System is most closely aligned, utilizing approximately 65 percent of the funds and manpower required to operate the National Wildlife Refuges.

Mammals and Non-Migratory Bird Program

The Service's goal for this program is to maintain a natural diversity and abundance of mammals and non-migratory birds on refuge lands. The current qualified objective for the Refuge System is to provide for 11.3 million use days by 9 species of specially-recognized mammals on existing lands. Specially-recognized mammals include such species as the mountain lion, kodiak bear, caribou and bighorn sheep. Certain refuges have been established specifically to protect such species.

The Mammals and Non-Migratory Bird Program includes much more than just refuge activities alone. Enforcement of provisions of the Lacey Act (16 U.S.C. 701), Airborne Hunting Act (16 U.S.C. 742) and Marine Mammal Protection Act (16 U.S.C. 1361 *et seq.*) comes within this program.

Research on mammals and non-migratory birds is included, as is technical assistance provided to other agencies and organizations concerning habitat and populations of mammals and non-migratory birds.

Interpretation and Recreation Program

The goals of this program are to expand understanding and appreciation of fish and wildlife ecology and man's role in his environment, and to provide visitors at Service installations with high quality, safe, wholesome and enjoyable recreational experiences oriented toward wildlife.

Within these goals, seven quantified objectives have been developed for the National Wildlife Refuge System:

(1) *Scientific Studies.*—To encourage scientific knowledge by making refuge lands available for 1,200 scientific studies by colleges, universities, professional organizations, scientific societies and individuals. Research projects cover a wide variety of topics ranging from wildlife population surveys to studies of refuge visitor attitudes.

(2) *Environmental Education.*—To encourage environmental understanding by making refuge lands available as study areas for use by schools (elementary through university levels) and for formal environmental education activities concerning wildlands ecology and man's role in his environment.

The quantified objective is to provide for 1.7 million activity hours of environmental education on existing refuges each year. Environmental education programs are usually set up on refuges situated near population centers. Specific sites are established on the refuge for the teachers' use as "outdoor classrooms" where the students study various aspects of the environment within the site, such as plants, soil, wildlife or water. Refuge personnel may assist in developing lesson plans, setting up and conducting teacher workshops and reviewing materials for technical accuracy.

(3) *Interpretation.*—To enhance the general public's understanding of fish and wildlife and their habitat through interpretive programs on refuge lands. The quantified objective is to provide for 13.2 million activity hours of interpretation on existing refuges each year. Interpretation is a blend of education and recreation in which informal teaching techniques are used to give understanding and meaning to ecological relationships.

(4) *Dedicated Areas.*—To preserve and protect outstanding ecological and scenic areas through the establishment of wilderness areas, natural landmarks, scenic rivers, etc., and to preserve our historic and cultural environment through the establishment of historic sites and historic landmarks. For the National Wildlife Refuge System the quantified objective is to preserve 1,000 areas on existing refuges. New refuges are not acquired for this purpose, but where outstanding areas or sites occur on existing refuges, efforts are made to give them official recognition.

(5) *Fish and Wildlife Information.*—To create public awareness and to promote a fish and wildlife conservation ethic by providing information about fish and wildlife and their relationship to man. This information is provided through news releases, radio programs and many other types of informational "professional services." The objective for the National Wildlife Refuge System is for refuge personnel to provide 22,000 information-type professional services annually.

(6) *Recreation.*—To provide high quality fish and wildlife oriented recreation activities on refuge lands that are compatible with fish and wildlife programs. Quantified objectives are to provide 53 million activity hours of fish and wildlife oriented recreation (e.g., hunting, fishing, birdwatching, etc.) and 20 million activity hours on non-fish and wildlife oriented recreation on existing units of the National Wildlife Refuge System each year.

In fiscal year 1974, people throughout the Nation made more than 21 million visits to units of the National Wildlife Refuge System—a 10 percent increase over the year before.

(7) *Youth Programs.*—To support the Youth Conservation Corps (YCC) and Job Corps programs to the extent authorized by Congress. Fiscal year 1976 objectives for the National Wildlife Refuge System are to support 851 YCC enrollees and 336 Job Corps enrollees. In fiscal year 1975, the YCC program involved 37 refuges in 29 states at a total cost of \$1.1 million, funded primarily through the Department of Agriculture.

At present there are two Job Corps Centers located on refuges: Mingo and Treasure Lake. The two centers have a total budget for FY 1976 of \$2.5 million and a total staff of 90 employees. The centers are funded entirely by the Department of Labor but are staffed with employees of the Fish and Wildlife Service.

In both programs youth receive education and on-the-job training, and they serve as a work force for accomplishing needed construction and maintenance projects on the refuges where they are located.

Goal Formulation and Evaluation

The quantified objectives for the National Wildlife Refuge System are developed through the refuge PPBE system using information gathered at the field level. In the program planning portion of the PPBE system, individual managers examine their refuges from the standpoints of demand, capacity and reasonable costs. For a given refuge there may be high public demand for an objective (output) but little capacity to produce it. The reverse may be true at another refuge which may have high capacity to produce the output but little demand for it. After resolving any time/space conflicts between different objectives, the refuge manager sets the lesser of either demand or capacity as the quantified objective for that refuge.

The quantified objectives for all refuges in the System are calculated and their sums become the quantified objectives for the National Wildlife Refuge System as a whole. For budgeting purposes these objectives are adjusted to reflect the most efficient production level for the System.

These goals and objectives are transformed into actual programs on the individual refuges. From each Service program, annual "program advice" documents are forwarded from Washington to the Regional Directors of the Service. The program advices include the major goals, objectives and tasks to be accomplished during the fiscal year as well as major policy guidance and fund allocations. Regional Directors translate the program advices into "annual work plan advices" for all the field stations and organizations in the region. The annual work plan advices provide the same kinds of information to the field stations as the program advices provide to Regional Directors—including specific jobs to be done and fund and manpower targets with which to operate.

Based on the annual work plan advice, individual refuge managers plan the work to be done at their refuge that year and the outputs (quantified objectives)

to be produced as a result of this work. This planning effort results in an annual work plan for work units and an annual plan for output production, both of which are computer input documents. The documents and the resulting computer printouts transmit to the regional and Washington offices the overall management plan which each refuge manager intends to carry out during the fiscal year.

As the year progresses, refuge managers report the kinds and amounts of work accomplished and the kinds and amounts of outputs produced. The reports are in computer format and are standard for the entire Refuge System. For example, work accomplishments are reported in standard units such as "acres of cropland farmed", "number of wildlife surveys made", etc. Outputs are reported in standard units such as "number of waterfowl produced" and "activity hours of public use." The data can be summarized for the entire System so that answers can be obtained to such management questions as: "How much work did we do?" and "How many outputs did we produce?"

The remaining question is, "What did it cost?" This question is answered by a cost coding system in which managers report the cost (in both man-hours and dollars) of doing each kind of work and of producing each kind of output.

All these data are computerized, and the computer matches the actual work accomplishments, outputs and costs with the amounts originally planned. Various computer printouts show summaries of this information for individual refuges, regions and for the National Wildlife Refuge System as a whole. These printouts, plus narrative reports of activities and other internal communications, provide the means by which all levels of management can evaluate the degree to which programs on individual refuges conform to overall goals.

Conformance of the Refuge System to program goals generally has been good. However, the Service is currently in the transition period from management by organizational units to management by programs. With any such fundamental change involving revised objectives and policies and different lines of communications, areas of non-conformance to program goals are likely to occur. Conformance by the Refuge System is improving along with the other organization of the Service as methods of program evaluation become more standardized.

Since the Service has only recently adopted the program approach to management, it is likely that the program goals and objectives will be further refined. As the stockpile of information about each program grows, evaluations and adjustments can be made to align program goals and Refuge System quantified objectives more closely with needs.

No major changes or shifts in goals and objectives are anticipated except as may be necessary to accommodate the large impact of lands which may be added to the System under the Alaska Native Claims Settlement Act.

MANAGEMENT ACTIVITIES

The operation of a national wildlife refuge involves a myriad of on-the-ground activities: From improving nesting habitat to counting ducks, from picking up litter to managing water levels of a marsh.

Successful management involves the appropriate *blending* of such activities into a cohesive, ongoing operation. If the blending is successful, both wildlife and people benefit. To present a better picture of these diverse activities a summarization is presented in the following paragraphs.

Wildlife Populations Management

Wildlife is the principal commodity and fulfilling their needs is the primary responsibility of the National Wildlife Refuge System. All other assignments are subordinate to the stewardship obligation. The success of refuge operations must be measured in the responses of wildlife to management of habitat and public use. These operations interact with other management activities, such as wildlife food production and land management, wildlife cover and habitat preservation, wildlife protection and public use. Wildlife censusing to monitor population levels and trends, banding and marking, control, surplus disposal, and introduction and reintroduction of certain wildlife species are types of work involved with population management.

Wildlife Inventory

A series of records obtained by comparable counting and monitoring methods for several consecutive seasons provides basic wildlife information. Refuge personnel cooperate with other Service and State conservation department personnel in scheduling censuses and in the exchange of data.

Waterfowl inventories are made during periods of major waterfowl use and with sufficient frequency at other times to determine population trends. The degree of coverage and the frequency of the counts are governed by waterfowl movements, weather conditions, sight limitations, accessibility of the censused areas, and need for information.

Surveys are conducted annually at the beginning of the breeding seasons for the purposes of estimating the number of breeding pairs of waterfowl, evaluating nesting cover conditions, and other factors which affect nesting success.

Brood counts are conducted periodically to estimate the number of waterfowl raised on refuges. Over the years, these records are used to determine the factors affecting local production, such as changes in vegetation, water levels and predation, and to permit comparisons of population trends that are directly influenced by management practices. Censuses may also be conducted on refuges for upland game birds, shorebirds, marsh and wading birds, mammals, and other species of wildlife.

Wildlife Marking

Animal marking includes banding, color marking and tagging of birds, mammals, and reptiles. Usually this activity is in the form of migratory bird banding from which useful information in evaluating wildlife management programs on both a local and continental scale are obtained.

Principal migration routes and flight patterns have been determined for most waterfowl species but continuing information is needed on seasonal movements, local migration patterns, distribution of harvest, harvest rates, hunting pressure, and survival rates.

Most of the trapping for marking purposes is done with cannon-nets, conventional cage, and/or mist nets. Occasionally birds may be color dyed, fitted with radio transmitters, or have neck collars or colored leg bands placed on them to permit easier identification or tracking.

Population Control

It is the policy of the National Wildlife Refuge System to engage in animal control upon proof of need. The Service realizes that animal control may be a necessary management function when a species is causing economic damage, is overly abundant, or is endangering human health or safety. Whenever possible, control measures are applied selectively to problem individuals and conducted in ways to minimize mortality to non-target species.

Surplus Animal Disposal

Surplus animal disposal is used on refuges as a management tool. The Refuge System has four big game refuges where unique species of animals including buffalo, elk and longhorn cattle are kept to provide an opportunity for people to see them in their natural habitat. These refuges are National Bison Range, Montana; Sullys Hill, North Dakota; Fort Niobrara, Nebraska; and Wichita Mountains, Oklahoma.

Some introductions or reintroductions of wildlife to refuges include: tule elk to the San Luis Refuge in California; trumpeter swans from Red Rock Lakes Refuge in Montana to the Lacreek Refuge in South Dakota; and the Mexican duck to the Bosque del Apache Refuge in New Mexico. All of these activities have been successful.

A more recent example of wildlife reintroduction involving refuges was the airlift of muskox from Nunivak Refuge in Alaska to Siberia. They were flown there as partial fulfillment of the U.S.-USSR Environmental Protection Agreement of 1972. The Service, in cooperation with the State of Alaska, has a management program that contributes toward maintaining the population of muskox within the carrying capacity of the Nunivak Refuge.

Land Management

Since wildlife population management is basically habitat management, most significant practices conducted on refuges relate to manipulation of the land and water resources. These include management of croplands, forest lands, grasslands and marshes.

Cropland Management

The primary objective of cropland management is to provide food and cover for wildlife using the refuges and on some areas to help alleviate wildlife dep-

redations on adjacent private lands. Secondary purposes include making economic opportunities available when compatible with primary wildlife goals, and fulfilling commitments made when lands were acquired.

The magnitude of farming varies significantly between refuges and depends on operations which are conducted by refuge personnel or by permittees. Commonly, under a permittee arrangement the refuge share is taken as mature grain and left standing in the fields for wildlife use.

Conservation practices, including contour farming, green manure crops, stubble mulching, strip farming, summer fallowing, shrub planting and sod waterways are used to maintain or improve soil stability. Fertilizers are used to assure optimum yields of adapted crop varieties on a minimum number of acres.

Site selection is restricted to those areas where runoff and soil erosion will be minimal. The primary crops include wheat, corn, barley, rye, sorghum, soybeans, buckwheat, rice, millet, alfalfa and clover.

Refuge land management practices are used in some areas by Soil Conservation Districts to demonstrate desirable practices to local farming organizations and youth groups.

In 1974, some 221,000 acres were cultivated on 131 refuges and 12 wetland management districts. Of this total, refuge personnel cultivated approximately 50,000 acres, and nearly 800 cooperators cultivated the remaining 171,000 acres. Co-operative farming permits, renewed annually, specify the crop to be grown, chemical/fertilizers authorized, equipment to be used and any other appropriate conditions to be met.

Forest Management

Forest management on refuges, as opposed to the traditional concept of timber management, is predicted on the thesis that silvicultural practices should be designed to produce greatest benefits for wildlife.

Forest lands on 65 refuges total approximately 2.5 million acres. However, only about one-half million acres are capable of growing trees as a sustained crop. Timber management practices conducted on these lands are governed by the specific needs of a given refuge.

Grassland Management

Management of grasslands is directed toward maintaining or improving the soils, vegetation and various wildlife populations associated with this cover type. Such practices as grazing, haying, burning, fencing, seeding, weed control and fertilizing are used in varying degrees on most grasslands throughout the System to improve wildlife habitat.

Haying and grazing, as conducted, have a secondary value involving utilization of a renewable natural resource for its economic benefit. Such use is permitted only if it enhances or does not conflict with wildlife management objectives.

The Fish and Wildlife Service's objective is to emphasize only those economic uses that generate benefits for wildlife with regard to grazing, it is being used to discourage undesirable species of grass and to promote tall, dense, rank vegetation that is preferred by nesting waterfowl and other ground-nesting birds.

Water and Marsh Management

All terrestrial wildlife populations have three basic requirements for survival—food, shelter, and water. Although required in varying amounts by different species, none can survive if one of these ingredients is eliminated. Management of the living resources on individual refuges must consider these basic requirements and provide for them in proper combinations.

Water is the most important single resource on a refuge, especially on areas where management for waterfowl is the primary objective. Quantity and quality of water provide parameters within which management of fish and wildlife populations are established.

Marshes are extremely important to waterfowl management. An individual marsh is constantly undergoing change in plant and animal succession. The proper level of succession is what makes a particular marsh attractive to various wildlife species. On some refuges natural change is the principal factor which maintains marshes in favorable condition. On others, planned developments have created highly productive marshes with man-made controls.

Actions used in marsh management include manipulation of water levels, muskrat and nutria management, vegetation control, and mechanical developments including dike, island and pond construction.

Other Land Management

Not all refuge lands are intensively managed; some are retained perpetually in their natural state for several reasons, among them are their inaccessibility, legal restrictions, or for the purpose of maintaining naturalness. They provide diversity and act as control areas for other management programs. Wilderness areas, scientific sites, and natural areas are examples of lands preserved in a natural condition.

The small wetlands acquisition program, as authorized by Congress in 1958, was initiated in 1961 to preserve natural wetlands that were rapidly being lost to agricultural drainage and other destructive practices. Approximately 362,000 acres have been purchased within the States of Minnesota, North Dakota, South Dakota, Nebraska, Wisconsin and Montana. Forty-four percent of these lands are covered by water.

An additional 995,000 acres of wetlands are being administered in these States under an easement program whereby the Service purchased certain perpetual rights. The landowner retains ownership, continues to farm the land as in the past, and maintains control over trespass, but agrees not to level, drain fill or burn.

Management of Public Use

One of the most demanding phases of refuge operation is management of public use. This incorporates any activity affecting the human component of the environment, but most often it is in the form of public use. It is the policy of the Fish and Wildlife Service that public use on refuges should be allowed if not in conflict with the primary purpose of management for wildlife and if adequately funded.

There is much variation throughout the Refuge System to the extent which public use is incorporated into management plans. Some refuges attract little or no recreational demand, receiving only a few hundred visits annually by the public. Other refuges—particularly those situated in highly populated areas of the East—have become oriented to mass recreation.

Most serious visitors are attracted to refuges because of their wildlife-oriented interests including hunting, fishing, photography, wildlife observation and nature appreciation. These interests are among the fastest growing forms of recreation in the United States.

To the bird watchers and photographers living in large metropolitan areas, particularly on the eastern seaboard, National Wildlife Refuges provide unique opportunities for enjoying birdlife. Virtually all of the 813 species of North American birds occur during at least one season of the year on one or more refuges throughout the System.

Hunting, fishing, and trapping are managed to utilize the renewable resource, provide an outdoor recreational experience, and hold populations in harmony with available habitat. In 1974, limited hunting was conducted on 170 refuges in 44 States. (See Attachment II for a list of refuges open to hunting in 1974.)

Hunting on refuges is set within the limits of State and Federal regulations. Migratory bird hunting regulations are established by each State within Federal guidelines. Likewise, bag limits and regulations for resident wildlife species are set in cooperation with the State, although refuge regulations may be more restrictive.

Fishing was permitted on 171 National Wildlife Refuges in 1974, but is frequently limited during the seasons of waterfowl use to minimize interference with nesting or wintering bird populations. Fishing programs are also structured in accordance with State regulations.

Fur trapping was permitted on 36 National Wildlife Refuges in 1974. The primary species trapped were muskrat and nutria; those taken in lesser numbers include raccoon, mink, and beaver. Species such as raccoon are sometimes removed from specific areas because of excessive egg predation on nesting waterfowl, shorebirds, and sea turtles. As with hunting and fishing, refuge trapping is conducted in accordance with State regulations.

Another category of public use on National Wildlife Refuges involves non-wildlife oriented recreation. Boating, camping, swimming, picnicking, water skiing, surfing, scuba diving, ice-skating, horseback riding and bicycling are major types of use recorded in this category.

On areas where non-wildlife oriented recreation does not seriously conflict with the refuge's primary purpose, public use has greatly increased in recent years. Most of this type of use requires facility development which includes boat ramps, picnicking and camping areas, trails and access roads, sanitary facilities, parking areas, and sometimes concessions.

Non-wildlife oriented recreational visits to National Wildlife Refuges in 1974 approached the 5.2 million mark. Picnicking accounted for about 27 percent of the total. Other popular uses were swimming, 22 percent; boating, 19 percent; camping, 16 percent; and water skiing, 6 percent.

Cooperative Management

Refuge management is an effort that is not exclusively a Federal one. The management of selected activities on national wildlife refuges, such as hunting at the San Luis Refuge in central California, camping in the San Juan Islands Refuge in Puget Sound, Washington, and mosquito control operations on many of the refuges in the Northeast Region, is shared with States, counties and the municipalities through cooperative agreements. These cooperative agreements are sought where the activity is either low priority from a Service standpoint, the benefits are more local in nature, or for reasons of efficiency. However, recent experience has shown that large scale, immediate changes in activities provided on refuges cannot be expected but that increased cooperation and some local cost sharing is being achieved on a continuing selective basis.

Private concessions are encouraged where public use is sufficient to make such ventures possible. Examples can be found on the high public use refuges, such as boat rentals at Havasu Refuge (Arizona-California), beach and camping operations at Crab Orchard Refuge (Illinois), airboat tours at Loxahatchee Refuge (Florida), boat tours, and boat/canoe rentals at Okefenokee Refuge (Georgia), and tram tours at the Chincoteague Refuge (Virginia).

Savings in land management operations are often achieved through cooperative use permits with private individuals. In 1974 habitat management alone involved 3,300 cooperators on 17.3 million acres of land and a return of \$1.8 million to the Treasury in the National Wildlife Refuge Fund.

The Service continues to explore ways to cooperate with State and local agencies and the private sector to efficiently and effectively carry out National Wildlife Refuge System management activities, especially in the lower priority areas of resident wildlife management and non-wildlife recreation.

ATTACHMENT I

ENDANGERED AND THREATENED ANIMALS FOUND ON NATIONAL WILDLIFE REFUGES

- | | |
|--|--------------------------------|
| 1. Lahontan cutthroat trout | 23. Arctic peregrine falcon |
| 2. Humpback chub | 24. Hawaiian gallinule |
| 3. Colorado River squawfish | 25. Hawaiian coot |
| 4. Pecos gambusia | 26. Hawaiian stilt |
| 5. Pahrump killifish | 27. Nihoa millerbird warbler |
| 6. Aleutian Canada goose | 28. Laysan finch |
| 7. Laysan duck | 29. Nihoa finch |
| 8. Hawaiian duck | 30. Red-cockaded woodpecker |
| 9. Mexican duck | 31. Dusky seaside sparrow |
| 10. California condor | 32. Salt marsh harvest mouse |
| 11. Florida everglade kite | 33. Delmarva fox squirrel |
| 12. Southern bald eagle | 34. Florida manatee |
| 13. Attwater's greater prairie chicken | 35. Indiana bat |
| 14. Whooping crane | 36. Eastern timber wolf |
| 15. Mississippi sandhill crane | 37. Red wolf |
| 16. Yuma clapper rail | 38. San Joaquin kit fox |
| 17. California clapper rail | 39. Florida panther |
| 18. Lightfooted clapper rail | 40. Key deer |
| 19. California least tern | 41. Columbia white-tailed deer |
| 20. Eastern brown pelican | 42. Sonoran pronghorn |
| 21. California brown pelican | 43. American alligator |
| 22. American peregrine falcon | 44. Blunt-nosed leopard lizard |

ATTACHMENT II

NATIONAL WILDLIFE REFUGES OPEN TO HUNTING IN 1974

The types of hunting permitted on the following refuges are migratory bird (m) upland game (u) and big game (b).

Alabama:

- Enfaula (m)
- Wheeler (m, u, b)

Alaska:

- Aleutian (m, u, b)
- Arctic (m, u, b)
- Bering Sea (b)
- Clarence Rhode (m, u)
- Izembek (m, u, b)
- Kenai (m, u, b)
- Kodiak (m, u, b)
- Nunivak (m, u)

Arizona:

- Cabeza Prieta (b)
- Cibola (m, u)
- Havasú (m, u, b)
- Imperial (m, u, b)
- Kofa (u, b)

Arkansas:

- Big Lake (u)
- Holla Bend (m, b)
- Wapanocca (m, u)
- White River (u, b)

California:

- Clear Lake (m, b)
- Colusa (m, u)
- Delevan (m, u)
- Havasú (m, u)
- Imperial (m, u)
- Kern (m, u)
- Kesterson (m)
- Lower Klamath (m, u)
- Merced (m, u)
- Modoc (m)
- Sacramento (m, u)
- Salton Sea (m)
- San Luis (m, u)
- Sutter (m, u)
- Tule Lake (m, u)

Colorado:

- Alamosa (m, u)
- Browns Park (m, u, b)
- Monte Vista (m, u)

Delaware:

- Bombay Hook (m, u, b)
- Prime Hook (m, u, b)
- Supawana Meadows (u)¹

Florida:

- Chessahowitzka (m)
- Lake Woodruff (b)
- Loxahatchee (m)
- Merritt Island (m)
- St. Marks (u, b)
- St. Vincent (u, b)

Georgia:

- Blackbeard (u, b)
- Eufaula (m)
- Piedmont (u, b)
- Savannah (m)
- Wassaw (u, b)

Idaho:

- Bear Lake (m, u, b)
- Camas (m, u, b)
- Deer Flat (m, u, b)
- Grays Lake (m, b)
- Kootenai (m, u, b)
- Minidoka (m, u)

Illinois:

- Chautauqua (m)
- Crab Orchard (m, u, b)
- Mark Twain (m, u, b)
- Upper Mississippi (m, u, b)

Indiana:

- Muscatatuck (u)

Iowa:

- DeSoto (b)
- Mark Twain (m, u, b)
- Upper Mississippi (m, u, b)

Kansas:

- Flint Hills (m, u, b)
- Kirwin (m, u, b)
- Quivira (m, u)

Kentucky:

- Reelfoot (u)

Louisiana:

- Catahoula (u, b)
- Lacassine (m)
- Sabine (m)

Maine:

- Moosehorn (b)

Maryland:

- Blackwater (b)
- Chincoteague (b)
- Eastern Neck (b)

Massachusetts:

- Parker River (m)

Michigan:

- Seney (m, u, b)
- Shiawassee (m, b)

Minnesota:

- Agassiz (b)
- Rice Lake (u, b)
- Sherburne (m, u, b)
- Tamarac (m, u, b)
- Upper Mississippi (m, u, b)

¹ Formerly Killcohook.

Mississippi:

Noxubee (m, u, b)
Yazoo (m, u, b)

Missouri:

Clarence Cannon (m, u, b)
Mark Twain (m, u, b)
Mingo (b)
Swan Lake (m, u)

Montana:

Benton Lake (m)
Bowdoin (m, u)
Charles M. Russell (m, u, b)
Lake Mason (m)
Medicine Lake (m, u, b)
Ravalli (m, u, b)
Red Rock Lakes (m, b)
Swan River (m)
U L Bend (m, u, b)

Nebraska:

Crescent Lake (u, b)
DeSoto (b)
Valentine (u, b)

Nevada:

Charles Sheldon (u, b)
Desert N.W. Range (u, b)
Fallon (m, u)
Pahranagat (m, u)
Ruby Lake (m)
Stillwater (m, u)

New Jersey:

Brigantine (m)
Great Swamp (b)
Supawana Meadows (u)¹

New Mexico:

Bitter Lake (m, u, b)
Bosque del Apache (m, u, b)
San Andreas (b)

New York:

Iroquois (m, u, b)
Montezuma (m, u, b)
Oyster Bay (m)

North Carolina:

Mattamuskeet (m)
Pungo (b)

North Dakota:

Arrowwood (u, b)
Audubon (b)
Chase Lake (b)
Des Lacs (b)
J. Clark Salyer (m, u, b)
Slade (b)
Tewaukon (u, b)
Upper Souris (b)

Oklahoma:

Salt Plains (b)
Sequoyah (m, u)
Tishomingo (m, u, b)
Washita (u, b)
Wichita (b)

Oregon:

Ankeny (m, u)
Baskett Slough (m, u, b)

Oregon—Continued

Charles Sheldon (m, u)
Columbia White-tailed Deer (m)
Cold Springs (m, u)
Hart Mountain (u, b)
Klamath Forest (m, u, b)
Lewis and Clark (m)
Lower Klamath (m, u)
Malheur (m, u, b)
McKay Creek (m, u)
Umatilla (m, u)
Upper Klamath (m)
William L. Finley (m, u, b)

Pennsylvania:

Erie (m, u, b)

South Carolina:

Cape Romain (m, u, b)
Carolina Sandhills (m, b)
Santee (m)
Savannah (m)

South Dakota:

LaCreek (m, u, b)
Sand Lake (m, u, b)
Waubay (b)

Tennessee:

Hatchie (u)
Lake Isom (u)
Reelfoot (u)
Tennessee (m, u, b)

Texas:

Aransas (b)
Brazoria (m)
Hagerman (m, u)
Laguna Atascosa (m, u, b)

Utah:

Bear River (m, u)
Fish Springs (m)
Ouray (u, b)

Vermont:

Missisquoi (m, u, b)

Virginia:

Chincoteague (b)
Presquille (b)
Great Dismal Swamp (b)

Washington:

Columbia (m, u, b)
Columbian White-tailed Deer (m)
Lewis and Clark (m)
Little Pen Oreille (b)
McNary (m, u)
Ridgefield (m)
Toppenish (m, u)
Umatilla (m, u, b)
Willapa (m, u, b)

Wisconsin:

Horicon (m, u, b)
Necedah (u, b)
Upper Mississippi (m, u, b)

Wyoming:

National Elk (b)
Pathfinder (m, u, b)
Seedskadee (m, u, b)

¹ Formerly Killcohook.

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