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# *REPORT TO THE CONGRESS*

## **Opportunities For Improvement In Policies For Acquiring Migratory Waterfowl Refuges**

B-114841

Bureau of Sport Fisheries and Wildlife  
United States Fish and Wildlife Service  
Department of the Interior

***BY THE COMPTROLLER GENERAL  
OF THE UNITED STATES***

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WASHINGTON, D.C. 20548

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

This is our report on opportunities for improvement  
in policies for acquiring migratory waterfowl refuges by the  
United States Fish and Wildlife Service, Department of the  
Interior.

Copies of this report are also being sent to the Direc-  
tor, Bureau of the Budget, and to the Secretary of the  
Interior.

Comptroller General  
of the United States

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## D I G E S T

### WHY THE REVIEW WAS MADE

To conserve migratory waterfowl--ducks, geese, brant, and coots--by preventing serious loss of habitat, or their native environment, Congress in 1961 authorized an accelerated wetlands acquisition program.

It was expected that an additional 4.5 million acres of wetlands, such as marshes, bogs and swamps would be needed under Federal control to conserve the waterfowl. Funds to acquire wetlands are available from the sale of duck hunting stamps and from \$105 million authorized for the accelerated program.

The General Accounting Office (GAO) review was undertaken because of the significant amount of land and funds involved. GAO sought an answer to the basic question:

--were program plans and controls adequate to ensure that a reasonable need existed for the type and quantity of waterfowl refuge lands acquired or proposed for acquisition?

### FINDINGS AND CONCLUSIONS

The Department of the Interior's Bureau of Sport Fisheries and Wildlife has established an overall objective to preserve a specific amount of the wetlands within the United States and has defined national waterfowl population goals. However, the Bureau is acquiring wetlands as they become available without relating individual purchases to migratory waterfowl population goals and habitat requirements or assuring itself that such land is of high value to the waterfowl.

At June 30, 1967, about 2.7 million of the 4.5 million acres of the additional wetlands expected to be needed under Federal control had been acquired or scheduled for acquisition by the Bureau under the accelerated program at an estimated cost of \$206 million.

The program is administered under four geographical areas: the Pacific, Central, Mississippi, and Atlantic Administrative Flyways. A flyway is the traditional path taken by migrating birds. (See charts on pp. 66 through 73.)

GAO believes that increased benefits can be realized from the funds available for wetland acquisition by establishing improved goals and guidelines for determining the quantity, quality, and location of needed lands.

Not having adequate goals and guidelines, the Bureau has acquired or scheduled for acquisition:

- greater quantities of suitable habitat than needed for waterfowl in particular geographical areas;
- substantial amounts of biologically unessential lands to gain control of suitable habitat;
- refuges in areas of low value to waterfowl.

Existing refuges have not been reevaluated to identify lands not needed for program purposes, which might be sold or exchanged.

#### RECOMMENDATIONS OR SUGGESTIONS

GAO is recommending to the Secretary of the Interior that:

- waterfowl population goals be established by specific geographical areas and related land investment guidelines be provided;
- cooperative agreements with States and private owners of wetlands be sought;
- consideration be given to limiting future wetland acquisitions until goals and guidelines are developed;
- prior acquisitions be reevaluated in light of the goals and guidelines to be established.

#### AGENCY ACTIONS

The Department advised that consideration will be given to the GAO recommendations in the development of policies and procedures necessary to achieve the goals and objectives of the Bureau with which a recently issued report of the Secretary's Advisory Board on Wildlife and Game Management was concerned.

#### LEGISLATIVE PROPOSALS

None.

## INTRODUCTION

The General Accounting Office has made a review of the migratory waterfowl refuge land acquisition program of the Bureau of Sport Fisheries and Wildlife, United States Fish and Wildlife Service, Department of the Interior. We undertook this review because of the significant amount of land and funds involved. Our review was made pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

Our review, which was completed in June 1968, was directed primarily toward evaluating whether the Bureau's plans and controls were adequate to ensure that a reasonable need existed for the type and quantity of waterfowl refuge land acquired or proposed for acquisition in certain geographical areas and at selected refuge sites.

We reviewed applicable laws and implementing regulations and directives pertaining to the organization, functions, and objectives of the Bureau. We examined records pertaining to the migratory waterfowl refuge land acquisition program at the Bureau's Central Office in Washington, D.C., and at four of the five regional offices--Portland, Oregon (Region 1), Albuquerque, New Mexico (Region 2), Minneapolis, Minnesota (Region 3), and Atlanta, Georgia (Region 4).

We reviewed records relating to the acquisition of land at 28 waterfowl refuges located within these regions and visited 12 of these refuges to observe the use made of various tracts of land. We discussed the issues included in this report with appropriate Central Office and regional officials and obtained comments from the Department of the Interior on these matters.

Our review included an analysis of data pertaining to (1) estimates provided by the Regions' Divisions of Wildlife Refuges on waterfowl-carrying potential or expected use at Federal refuges and production areas (see footnotes on p.6) and (2) waterfowl population counts and graphical presentations, provided by the Bureau's flyway representatives, on duck and goose migration patterns for the United States part of each flyway and for certain specific geographical areas therein.

The refuges we selected for review consisted primarily of established and new refuges where lands were acquired or proposed for acquisition after October 1961. These refuges were established principally to support ducks and geese. For this reason we related, to the extent practicable, the existing or expected capability of these Federal refuges to the approximate duck and goose use that occurred during the Bureau's stated waterfowl population goal periods. (See p. 16.)

The principal officials of the Department of the Interior, the Fish and Wildlife Service, and the Bureau of Sport Fisheries and Wildlife responsible for the activities discussed in this report are listed in appendix I.



## BACKGROUND INFORMATION

### ORGANIZATION AND RESPONSIBILITIES

The Bureau of Sport Fisheries and Wildlife was created as a separate entity in the overall reorganization of the United States Fish and Wildlife Service, as authorized by the Fish and Wildlife Act of 1956 (16 U.S.C. 742a). Under this act, the Bureau was delegated the responsibility for the development, management, advancement, conservation, and protection of wildlife resources through acquisition of refuge lands and development of existing facilities.

The National Wildlife Refuge System includes wildlife refuges, wildlife ranges, game refuges, wildlife management areas, and waterfowl production areas. As of June 30, 1967, the system consisted of 484 wildlife conservation areas comprising about 29.1 million acres of land within the United States and its territories. Of these totals, there were 357 Federal migratory waterfowl refuges and production areas comprising about 4.5 million acres of land within the contiguous United States.

The Bureau's Central Office has delegated to its regional offices the primary responsibility for locating, evaluating, proposing, and acquiring suitable habitat to meet the needs of migratory birds, subject to approval by the Director of the Bureau. Migratory birds include wild ducks, geese, brant, and coots, as defined in 50 CFR 10.1.

During migration, waterfowl follow traditional paths, commonly referred to as flyways, across the North American Continent. (See apps. IV, VI, VIII, and X.) Since these paths overlap to a certain extent, the Bureau, for administrative purposes, has divided the United States into four geographical areas known as administrative flyways. (See apps. V, VII, IX, and XI.) The term "flyways," as used throughout this report, refers to the administrative flyways.

The Director of the Bureau has assigned a representative to each of the four administrative flyways--Pacific, Central, Mississippi, and Atlantic. Flyway representatives are responsible for conducting investigations and surveys

of migratory game birds throughout the flyways, correlating waterfowl management activities of the State game departments, developing flyway management plans, and acting as a liaison between the flyway councils and the Bureau's Central and regional offices.

The flyway councils were established at the request of the International Association of Game Fish and Conservation Commissioners--an association composed largely of State fish and game administrators--for the purpose of coordinating Federal, State, and private waterfowl conservation programs. The flyway councils are independent of the Federal establishment and include representatives from the game departments of each State in the flyway. Each council has a flyway technical committee, composed largely of State waterfowl biologists, that serves as technical advisor to the council on matters such as selection of suitable waterfowl areas.

The evaluations of areas containing suitable habitat include studies performed by the Bureau's regions to determine location, biological environment, water supply, approximate cost, availability of the land for acquisition, and habitat development potential. The Bureau's Central Office is responsible for reviewing and approving waterfowl refuge<sup>1</sup> proposals submitted by its regional offices. The purpose of these reviews is to ensure that the refuge proposals are technically sufficient with regard to such matters as water supply and engineering plans, together with cost estimates for habitat development and realty problems. The proposals are then submitted to the Migratory Bird Conservation Commission for their approval. (See p. 7.) Commission approval is not required for waterfowl production areas<sup>2</sup>.

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<sup>1</sup>Waterfowl refuges are those areas where extensive development and intensive management are undertaken to improve habitat conditions for waterfowl.

<sup>2</sup>Waterfowl production areas are small wetlands and potholes that because of their limited opportunity for habitat manipulation are not intensively managed or developed.

The Division of Realty in each region is responsible for negotiating the purchase of waterfowl refuge sites and production areas. As required by law, the Governor or appropriate agency of the State in which lands proposed for acquisition are located must consent to the acquisition.

### LEGISLATION AND FINANCING

Federal responsibility for the conservation of migratory waterfowl originated in 1916 with the ratification by the Congress of a treaty with Great Britain (for Canada) for the protection of birds that migrate between Canada and the United States. A similar treaty was entered into with the United Mexican States in 1936. The Migratory Bird Treaty Act of 1918, as amended in 1936 (16 U.S.C. 703-711), implements provisions of these treaties and provides for regulations to control taking, transporting, and importing migratory birds. Although 61 Federal bird refuges had been established by 1929, the impetus to purchase lands for the preservation and management of habitat came with passage of the Migratory Bird Conservation Act in 1929 (16 U.S.C. 715-715r).

The Migratory Bird Conservation Act authorized the Secretary of the Interior to locate, recommend, and purchase, rent, or otherwise acquire, with funds appropriated by the Congress, areas, suitable for use as inviolate sanctuaries, which he considered necessary for the conservation of migratory game birds and other birds that he might define in the Federal Register as being threatened with extinction; provided that the States in which the lands were located consented by law to the acquisition by the Federal Government.

This act also created the Migratory Bird Conservation Commission which is responsible for considering and passing upon any such areas of land, water, or land and water (except waterfowl production areas) that may be recommended for purchase by the Secretary of the Interior and for fixing the prices at which such areas may be purchased or rented. The Commission consists of the Secretaries of the Interior, Agriculture, and Transportation and two members each from the Senate and the House of Representatives.

The principal source of funds for the acquisition of waterfowl refuge lands is the Migratory Bird Conservation

Fund. The fund was established pursuant to the Migratory Bird Hunting Stamp Act (Duck Stamp Act) of 1934, as amended (16 U.S.C. 718-718h). The Duck Stamp Act provided for the sale, by the United States Post Office Department, of Migratory Bird Hunting Stamps (duck stamps) to waterfowl hunters.

Duck stamps are currently sold for \$3, and moneys collected are deposited in the Migratory Bird Conservation Fund. The fund is administered by the Secretary of the Interior; and, upon specific appropriation by the Congress, the Secretary is authorized to make expenditures from it for locating, ascertaining, and acquiring areas suitable for migratory bird refuges, in accordance with provisions of the Migratory Bird Conservation Act of 1929, as amended.

The Bureau was also authorized by other acts to purchase limited areas of land for recreational and other purposes. These acts include the act of September 28, 1962 (16 U.S.C. 460-460K4), the Land and Water Conservation Act of 1965 (16 U.S.C. 460L-4 to 460L-11), and the Rare and Endangered Species Act of October 15, 1966 (80 Stat. 926). The latter act consolidates, restates, and modifies authority relating to the administration of the National Wildlife Refuge System.

In addition to direct acquisition of lands, the Bureau is authorized, by such acts as the Wildlife Restoration Act (16 U.S.C. 669), the Coordination Act (16 U.S.C. 661-666c), and the Lea Act (16 U.S.C. 695-695c), to provide matching funds to the States for purchase of migratory waterfowl refuge areas.

Special legislation, designed to accelerate the wetlands acquisition program, was approved by the Congress on October 4, 1961, and is discussed in the following section.

## CIRCUMSTANCES LEADING TO ACCELERATED WETLANDS ACQUISITION PROGRAM

Migratory bird refuges were established prior to 1929 either by Executive order or by special acts of the Congress. The Migratory Bird Conservation Act of 1929, as amended, authorized the Secretary of the Interior to acquire land and delegated to him the responsibility for defining suitable lands and determining the area needed for waterfowl refuge purposes.

Since 1929, the waterfowl refuge land acquisition program has been directed toward placing in public ownership an estimated amount of the total wetlands available in the United States. The term "wetlands," as used in the wildlife field, generally refers to lowlands covered with shallow and sometimes intermittent waters, which are commonly given such names as marshes, swamps, bogs, and sloughs. Available wetlands have been identified by several wetland inventories. According to officials of the Bureau of Sport Fisheries and Wildlife, the Bureau of Agricultural Economics Wetlands Inventory of 1922 was the most comprehensive.

On February 13, 1940, a Special Committee on the Conservation of Wildlife Resources of the United States Senate reported that about 7.5 million acres of marshland properly distributed throughout the continental United States would take care of the existing population of migratory waterfowl and a considerably increased population, and thus would ensure the return of a breeding stock to the northern nesting grounds sufficient to maintain the population.

In the early 1950's, the Bureau recognized that drainage and other reclamation activities had depleted in area the wetlands identified in the 1922 inventory and that no suitable and comprehensive information was available to show the area, distribution, and quality of remaining wetlands in relation to their value to wildlife.

Therefore, in the early 1950's, the Bureau in cooperation with various State fish and game agencies reinventoried wetlands available in the contiguous United States and classified them into four categories: high, moderate, low, or negligible in value to waterfowl. The reinventory

report, Circular 39, "Wetlands of the United States" (Wetlands Inventory), issued in 1956, identified about 74 million acres of wetlands in the United States, exclusive of permanent water areas,<sup>1</sup> including about 22.4 million acres classified as having a high or moderate value for waterfowl.

The report contained a Bureau estimate that 12.5 million acres of the high- or moderate-value wetland, or about 56 percent of the total, should be in public ownership (Federal and State) to provide a system of waterfowl refuges. About 1958, the Bureau, in cooperation with the flyway councils, established lists of sites that should be considered for acquisition at various locations within each flyway. The lists set forth total acreages desired, by State, and assigned priorities for the acquisition of certain areas. The Bureau concluded that 12.5 million acres in Federal and State control, together with the wetlands that would remain in private ownership, would be sufficient to carry out Department of the Interior waterfowl management policy.

On the basis of informal agreements with the States, arranged through the flyway councils, the Bureau established, in April 1961, an objective of placing a minimum of 8 million acres of high- or moderate-value wetlands under Federal control and 4.5 million acres under State control. At that time, about 3.5 million acres of the Federal share and 2 million acres of the States' share had already been acquired.

The Bureau thereupon allocated the 8-million-acre Federal share among the flyways as follows:

<u>Flyways</u>	<u>Acres</u>		
	<u>Acquired</u>	<u>Estimated to be acquired</u>	<u>Total</u>
Pacific	765,000	675,000	1,440,000
Central	955,000	1,800,000	2,755,000
Mississippi	1,155,000	1,350,000	2,505,000
Atlantic	<u>625,000</u>	<u>675,000</u>	<u>1,300,000</u>
Total	<u>3,500,000</u>	<u>4,500,000</u>	<u>8,000,000</u>

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<sup>1</sup>Areas permanently inundated by water, such as deep lakes, streams, and reservoirs.

The cost of the 4.5 million acres to be acquired was estimated by the Bureau in 1961 to be about \$227 million.

In July 1961, the Bureau advised the Congress that the 12.5 million acres of high- and moderate-value wetlands identified in the Wetlands Inventory of 1956 were essential to preserve the migratory waterfowl resource and that the full Federal share should be acquired before the wetlands were drained or priced beyond reach.

Subsequently, the Congress, on October 4, 1961, approved the Wetlands Loan Act (16 U.S.C. 715k-3 to 715k-5). This act authorized an accelerated land acquisition program in order to promote the conservation of migratory waterfowl and offset or prevent a serious loss of important wetlands and other essential waterfowl habitat. The act authorized appropriations not to exceed \$105 million over a 7-year period, beginning in fiscal year 1962, to be used, in addition to revenue received annually from the sale of duck stamps, for the acquisition of migratory waterfowl refuge land. The act provides that annual appropriations are to be treated as advances (loans), without interest, to the Migratory Bird Conservation Fund and that the loans are to be repaid to the Treasury of the United States in annual amounts comprising 75 percent of the moneys accruing annually to the fund beginning with the next fiscal year following appropriation of the total \$105 million, or fiscal year 1969, whichever is first. Public Law 90-205, (81 Stat. 612) enacted December 15, 1967, extended for an additional 8 years the period during which funds may be appropriated and deferred the beginning of the loan repayment period to 1977.

This report is concerned with the acquisition of waterfowl refuge lands under the accelerated wetlands acquisition program.

As of June 30, 1967, about 2.7 of the 4.5 million acres had been acquired, or were scheduled for acquisition, under the accelerated program at an approximate cost of \$205.7 million. The acreage and cost of lands acquired and scheduled for acquisition are summarized by flyway in the following table:

<u>Flyway</u>	<u>Acquired</u>		<u>Scheduled for acquisition</u>	
	<u>Acres</u>	<u>Cost</u>	<u>Acres</u>	<u>Estimated cost</u>
Pacific	50,920	\$11,510,244	81,413	\$ 11,345,858
Central	667,727	20,655,803	1,306,220	82,275,078
Mississippi	124,063	18,379,677	253,101	31,167,993
Atlantic	<u>87,506</u>	<u>12,642,935</u>	<u>117,960</u>	<u>17,729,720</u>
Total	<u>930,216</u>	<u>\$63,188,659</u>	<u>1,758,694</u>	<u>\$142,518,649</u>



## FINDINGS AND RECOMMENDATIONS

### NEED FOR SPECIFIC GOALS AND GUIDELINES FOR ACQUIRING MIGRATORY WATERFOWL REFUGE LANDS

We believe that opportunities for increased benefits from the funds available for wetland acquisition can be realized if the Bureau of Sport Fisheries and Wildlife establishes improved goals and guidelines for defining the quantity, quality, and location of lands required to meet migratory waterfowl refuge program objectives.

Under its accelerated program, the Bureau has acquired or scheduled for acquisition approximately 60 percent of its Federal objective, or 2,689,000 acres of land, at an estimated cost of about \$205,707,000, without, in our opinion, having established adequate goals and guidelines for determining migratory waterfowl refuge land needs.

By not having established more specific goals or guidelines, we believe that the Bureau has, in several instances, (1) acquired greater quantities of suitable waterfowl habitat than was required to meet the needs of waterfowl in particular geographical areas, (2) acquired or scheduled acquisition of substantial amounts of biologically unessential peripheral refuge lands to gain control of suitable habitat, and (3) established refuges in areas of relatively low value to waterfowl.

Our review showed a need to define program goals in terms of a desired waterfowl population level that should be preserved at specific geographical areas, to base determinations of land needs on such population goals, and to establish improved guidelines for making these determinations. Better guidelines are also needed for ensuring that only essential wetlands are acquired.

We believe that it is incumbent upon management officials undertaking an extensive and specialized land acquisition program to establish, on the basis of the best information available, specific goals and guidelines and alternative courses of action to strengthen the decision making process. Merely defining the objectives of a program in

broad terms, as the Bureau has done, is not sufficient, in our opinion, to ensure judicious selection and economic acquisition of biologically essential refuge lands.

During our review, the Bureau instituted studies which appeared to be designed to assemble much of the data needed to establish more specific waterfowl population goals and land acquisition guidelines. These studies are discussed beginning on page 50 of this report.

Inadequately defined population goals for  
determining Federal refuge land needs

Our review disclosed that the Bureau established, as its objective, the preservation of a specified number of acres of wetlands within the United States but did not relate the number of acres to be acquired to the habitat requirements of waterfowl at specific geographical locations.

We found that the Bureau had not (1) defined waterfowl requirements by specific geographical locations; (2) determined, in cooperation with the various State and private interests, the number of waterfowl supportable on respective Federal, State, and private waterfowl areas; or (3) determined the number of waterfowl that could be redistributed as a result of Bureau plans to alter established waterfowl migration patterns.

As discussed on page 10, the Bureau established an objective in April 1961 of placing under public control a minimum of 12.5 million acres of high- and moderate-value wetlands, identified in the Wetlands Inventory of 1956, before the lands were drained or priced beyond reach. In a policy report dated November 27, 1961, the Bureau stated its intention of acquiring the Federal share of this land, or 8 million acres, of which 3.5 million acres had already been acquired. This report explained that the Bureau must take full advantage of acquisition opportunities regardless of priorities or flyway council plans and referred to the Bureau Director's letter to the Chairman, Atlantic Flyway Council, dated November 13, 1961, which stated in part:

"The priorities were developed chiefly to utilize the available funds to the best advantage of the waterfowl resource. With limited funds this was essential. However, we must now compress more of our acquisition program within the 7-year period. Obviously, this means that we must aggressively negotiate to acquire as many of the selected areas as possible without regard to the existing priorities."

In addition to establishing a policy to opportunistically acquire a specified number of acres of land, the Bureau also established a policy to redistribute waterfowl populations within each of the four flyways to provide for the maximum human enjoyment of the waterfowl resource throughout the refuge system.

The Bureau recognized the need to establish population goals as a basis for determining land needs and issued the following statement of its migratory waterfowl refuge program goals in 1962. The Bureau would:

- "(1) Maintain a total population of nesting, migrating and wintering waterfowl in the United States not less than that which existed during the period 1950-56 (a period of low and high continental populations). This goal includes the prevention of any species from becoming extinct; the production of maximum number of migratory waterfowl within the United States; and the maintenance of a species composition comparable to the 1950-56 period.
- "(2) Maintain regular seasonal migrations of waterfowl in the United States so that each State may have the opportunity to share in the benefits of the resource.
- "(3) Manage migratory waterfowl for the benefit and enjoyment of people--meeting all recreational, aesthetic, and scientific needs for this resource as equitably as location of habitat and the requirements for preservation of this renewable resource permit."

The 1950-56 waterfowl population goal was translated to indicate a continental fall flight of between 75 million and 135 million waterfowl, with a breeding population of 35 million to 45 million. The national waterfowl population goal period was subsequently changed in July 1966 to the period 1956-62 with certain modifications in the translation of continental fall flight goals as discussed on page 51.

Bureau officials have advised us that continental waterfowl population goals are based on data obtained from population counts of migratory waterfowl in the nesting grounds of the northern part of the North American continent in May and in September, prior to the start of the fall migration. These counts are made on a small sample (less than 1 percent) of available habitat, which is selected according to statistically designed procedures. Both aerial observation and ground counts are used. The Bureau believes that the projected population figures result in an estimate of the total continental migratory bird population that is at least 80-percent reliable.

We found no evidence that these continental population goals were used to establish the Bureau's acreage objectives. Whether a relationship ever existed between the population goals and acreage objectives was questioned during Bureau of the Budget hearings held in 1962. We noted that this inquiry prompted the Bureau's Chief, Division of Technical Services, to distribute to all regional directors a memorandum referring to the 1962 hearing and stating in part, "We found it difficult to establish this relationship on a logical arithmetical basis."

We believe that goals expressed in terms of continental populations, although a first step in developing more specific population goals, are too general for practical use because they do not take into consideration the three factors discussed below.

First, continental population goals do not recognize that only a relatively small part of the continental fall flight is within the United States at any given period. According to documents and publications provided by the Bureau, the part of the population requiring habitat in the contiguous United States is substantially less than that of the total continental waterfowl population principally because (1) about 85 percent of the continental population is on nesting ground in Canada from early spring to late fall each year; (2) some of the continental population winters in Canada and Alaska; (3) certain species migrate from Canada earlier in the fall and return earlier in the spring than other species; (4) certain species migrate to wintering

grounds south of the United States; and (5) natural mortality and hunting kill reduce substantially the continental fall flight each year.

Data was available to indicate the impact of these factors for the 1965 flight year (June 1965 through May 1966). The Bureau estimated that the 1965 fall flight of ducks and geese approximated 87 million birds. Our analyses of waterfowl census figures and graphs of duck and goose migration patterns provided by Bureau flyway representatives for the 1965 flight year showed that the peak duck and goose populations, which were reached in the contiguous United States in November 1965, approximated only 28 million birds, or about 32 percent of the continental fall flight.

Second, the continental population goals do not define the number of birds that are to be accommodated and periods of use that are to be provided on State and private waterfowl areas, as discussed in detail beginning on page 21.

Third, continental population goals do not take into account changes in population levels and periods of use which are expected to result from natural phenomena and from Bureau plans to alter established waterfowl migration patterns. An example of Bureau efforts to redistribute waterfowl is discussed beginning on page 27.

We believe that significant benefits could be derived if waterfowl population goals were defined by specific, major, waterfowl concentration points, taking into consideration the factors described above. In our opinion, this would enable the Bureau to fully consider the current and long-range waterfowl-carrying capability of each existing or proposed Federal, State, and private waterfowl area when planning future acquisitions of waterfowl refuge lands. The capability of such existing and proposed land, when related to overall goals, would fix limits on the additional habitat which the Bureau would have to acquire for Federal refuge purposes.

In addition, we believe that waterfowl population goals for specific geographical areas within the United States could be established in terms of bird use days, giving consideration to whether the usage occurred over a relatively

short period of time for a large number of birds or over a much longer period for a smaller number of birds. By defining goals in this manner, both the number of birds and the period of time that the waterfowl are in need of habitat would be taken into account.

In certain instances, the Bureau has developed data on bird use days through analysis of migration patterns of waterfowl based on periodic waterfowl counts that are made by designated Federal, State, and private observers during the migration and wintering seasons. These periodic counts are made in each of the four flyways and in particular geographical areas and include the waterfowl on most Federal and certain State and private waterfowl areas. The most comprehensive of these periodic counts is the coordinated wintering waterfowl survey (census) which is taken in mid-January each year.

The winter census accumulates the counts of waterfowl made by designated observers located at all significant waterfowl concentration points on the continent. Both aerial and ground counts are used in taking the winter census, and Bureau officials advised us that this census represents the only comprehensive data available on actual numbers of waterfowl that utilize migration and wintering habitat situated in the United States.

Our analysis of these waterfowl counts, together with other data discussed on page 3, showed that in certain geographical areas the waterfowl-carrying capability of suitable habitat acquired or proposed for acquisition by the Bureau exceeded the average annual waterfowl use that occurred on Federal, State, and private lands combined during the Bureau's national population goal periods 1950-56 and 1956-62. In other cases, the capability exceeded the residual use after considering habitat provided on State, private, and other Federal lands. In still other cases, even when available data showed that the Bureau could not, as a practical matter, attract sufficient waterfowl to utilize the full waterfowl-carrying capability of existing refuge lands, Bureau officials had not reduced the size of the refuge areas and/or cancelled plans to acquire more habitat. These matters are discussed individually in the following sections.

Waterfowl-carrying capability of  
Federal habitat to exceed total  
waterfowl use which occurred during  
Bureau's goal periods in certain  
geographical areas

Our review has shown that the planned capability of Federal refuge lands alone will exceed the total duck and goose use that occurred during the Bureau's goal periods on all Federal, State, and private lands combined, in certain geographical areas.

For example, available data showed an excess of planned capability in the Central Flyway of 30 percent, based on the Bureau's goal period 1950-56, and 19 percent, based on the goal period 1956-62. According to estimates made by the Divisions of Wildlife Refuges of Regions 1, 2, and 3, Federal refuges and production areas already established by these regions in the Central Flyway at June 30, 1966, together with production areas scheduled for acquisition by Region 3 in the Central Flyway at that date, will be capable of reasonably supporting about 1.2 billion duck and goose use days annually after development work proposed by the regions is completed.

In contrast, our analysis of graphical presentations of duck and goose migration patterns and waterfowl counts provided by the Central Flyway Representative showed that a total of approximately 0.90 billion duck and goose use days occurred annually on Federal, State, and private lands combined, in the United States part of the flyway during the Bureau's goal period 1950-56 and approximately 1.01 billion occurred during the goal period 1956-62.

Similar situations were noted in specific geographical areas situated within other flyways. Within the Pacific Flyway, for example, our analysis of data pertaining to the Willamette Valley, Oregon, showed that, after completion of scheduled acquisitions and development work proposed by the Bureau on three Federal refuges, the waterfowl-carrying capacity will exceed total waterfowl use by 133 percent, based on the goal period 1950-56, and by 41 percent, based on the goal period 1956-62.



We noted that, from 1963 to 1965, the Bureau established three Federal waterfowl refuges (Ankeny, Baskett Slough, and William L. Finley) in the Willamette Valley, with primary emphasis on providing habitat for the dusky and Vancouver, Canada goose. In announcing Bureau plans to acquire these refuges, the Region 1 Director stated that the goal was to maintain waterfowl populations within the range that existed in that particular area during the period 1950-56.

According to Region 1 estimates, these three refuges will be capable of supporting a total of 22.4 million duck and goose use days annually. In contrast, our analysis of graphical presentations of duck and goose migration patterns and waterfowl counts for the Willamette Valley provided by the Pacific Flyway Representative showed that duck and goose use days occurring annually on Federal, State and private lands combined, approximated 9.6 million during the period 1950-56 and 15.9 million during the period 1956-62.

We believe these examples illustrate that neither the Bureau's initial nor its revised waterfowl population goals provide a sufficient basis for determining or fixing the quantity of suitable waterfowl habitat that needed to be acquired in particular situations.

State and private waterfowl habitat  
not adequately considered in estimating  
Federal refuge land needs

In our opinion, the Bureau did not give adequate consideration to the significant amount of habitat provided on existing State refuges and on private waterfowl areas, in estimating the amount of Federal refuge land to be acquired in certain areas.

The Bureau recognized that efforts of Federal and State Governments and private interests were required to preserve the migratory waterfowl resource. Federal responsibility was acknowledged in the Bureau's policy report of November 1961 to be the ultimate control of 8 million acres of wetland, while the States would have responsibility for controlling 4.5 million acres. In this regard, the Bureau

informed the Bureau of the Budget that the public control, both Federal and State, of 12.5 million acres, together with the wetlands anticipated to remain in private ownership, was expected to provide the habitat needed in the United States to carry out the Department's waterfowl management policy.

With respect to more specific delineation of Federal and State responsibilities, Bureau officials advised us that Federal and State officials had reached an overall understanding in principle as to the amount of wetland acreage that would be acquired by Federal and State Governments. We were advised, however, that no formal agreements had been entered into with respect to the individual States' responsibilities for supporting waterfowl or for acquiring this wetland acreage. In addition, we found that neither the Bureau's Central Office nor the regional offices had a complete record of the location, quantity, and waterfowl-carrying capability of land acquired or scheduled for acquisition by the States.

We believe that State and private habitat is a significant factor for consideration in determining Federal habitat requirements because substantial quantities of high-value wetlands have been provided by State and private interests for the preservation of the waterfowl resource.

#### Federal refuges in the State of Mississippi

In the State of Mississippi, for example, we believe that the Bureau had not adequately considered habitat provided on State and private waterfowl areas that existed at the time the Bureau proposed or obtained approval to expand four existing Federal refuges and to establish one new Federal refuge in the State. Four of the five Federal refuges in the State--Noxubee, Yazoo, Horn Island, and Petit Bois--were established before the accelerated land acquisition program started. However, substantial additions to the refuges have since been scheduled for acquisition. The fifth refuge, Davis Island, was established under the accelerated program.

Personnel of the Division of Wildlife Refuges, Division of Realty, and Division of Federal Aid, Region 4, advised us

in December 1966 that they had little useful information on the locations, acreage amounts, and waterfowl use of State refuges. In this regard, we noted a communication dated October 1, 1965, from the Associate Regional Director, advising certain flyway representatives that the Region had "no information available on the percent of birds that winter on State refuges or private management areas."

Information we were able to obtain indicated that considerable habitat was provided in these other areas. For example, in comparison with approximately 90,000 acres of land which the Bureau had acquired or scheduled for acquisition at the five Federal refuges, the Bureau's Wetlands Inventory of 1956 showed that there was approximately 1 million acres of wetland having high or moderate value to waterfowl in Mississippi. We did not attempt to determine the ownership or use of private wetlands in the State; however, our review disclosed that, as of May 1959, the State of Mississippi had acquired five waterfowl-management areas and had proposed to acquire 14 additional areas.

Information provided to us by the Mississippi Flyway Representative located at Minneapolis, Minnesota, showed that, as of April 14, 1967, there were eight established State refuges in Mississippi comprising about 82,420 acres, of which, about 24,000 acres were classed as high or moderate in value to waterfowl and showed that about 79,000 acres of this land had been conveyed to the State by the United States Forest Service and the Corps of Engineers under the Coordination Act (General Plan). (See p. 8.) This act provides that, if the State does not meet its obligation to manage these areas thus transferred for migratory bird refuge purposes, the Secretary of the Interior has the right to assume management of these lands in behalf of the National Migratory Bird Management program. Therefore, the use of these lands as migratory waterfowl areas appears to be of relatively certain permanency.

We noted that in 1965, Region 4 established a goal to develop existing and proposed Federal refuges to provide for about a third of the waterfowl use that occurred in its part of the Mississippi Flyway. Region 4 officials advised us that this goal was based on moneys available, winter

patterns of migratory waterfowl, waterfowl on the refuges, potential waterfowl areas, and judgment factors. A Region 4 communication to the Atlantic and Mississippi Flyway Representatives dated October 1, 1965, stated that this goal did not represent the maximum possible level of Federal refuge management but that it did represent a higher level than that thought desirable under the Bureau's current concept of population dispersal.

Region 4 records showed that the Bureau had acquired or proposed acquisition of enough land at five Federal refuges in Mississippi to support populations of 92,100 geese and 388,000 ducks, even though winter census figures showed that an average of about 3,100 geese and 394,500 ducks were observed annually in the entire State on Federal, State, and private lands combined, during the Bureau's goal period 1950-56 and about 1,100 geese and 160,800 ducks were observed during the period 1956-62. Thus, the Federal refuges above will support up to 83 times the number of geese and 2.4 times the number of ducks that used habitat in the State during the Bureau's 1956-62 goal period.

Region 4 officials explained that they planned to acquire all the land within the refuge boundaries because the boundaries had been approved by the Bureau's Washington office prior to the establishment of the goal to provide for about a third of the waterfowl. One official later explained that these plans were not revised because it was the judgment of the Regional Office that all the land would be needed to accommodate the established goal.

#### Ridgefield refuge in Washington

Our review disclosed that existing waterfowl areas, principally State waterfowl refuges, provided habitat for most of the waterfowl use that the Bureau was planning to attract and support on the Ridgefield refuge in Washington. The Bureau obtained approval from the Migratory Bird Conservation Commission in May 1965 to acquire 6,131 acres of land valued at about \$2.2 million to establish the Ridgefield refuge as a wintering area for dusky Canada geese and other waterfowl. Bureau records showed that, at the time the Ridgefield refuge was approved, there were three State

waterfowl refuges comprising 14,971 acres of land and several private habitat reserves in the vicinity of the Ridgefield refuge site.

In obtaining approval of the Migratory Bird Conservation Commission to acquire the Ridgefield refuge, the Bureau reported that about 235,600 ducks and geese wintered annually in the vicinity of the site over the past 5 years. Available records indicated that the 5-year period referred to by the Bureau was 1956-60. Our review of winter waterfowl census data provided by the Pacific Flyway Representative for this period showed that about 76 percent of the birds were observed on two of the three State refuges (including the largest, Sauvie Island, comprising 12,129 acres and situated about a quarter of a mile from the Ridgefield refuge site) and about 19 percent were observed in the vicinity of these two State refuges. We noted that less than 5 percent were observed on or near the third State refuge and the Ridgefield refuge area.

Even though about 95 percent of the waterfowl in the vicinity were observed on or near two of the three State refuges, the Bureau is in process of acquiring enough land to provide for 15.4 million duck and goose use days at the Ridgefield refuge.

Our analysis of similar waterfowl census data and graphs of migration patterns provided by the Pacific Flyway Representative for the Bureau's goal periods showed that approximately 11.6 million duck and goose use days occurred annually in the Ridgefield-Sauvie Island vicinity during the Bureau's population goal period of 1950-56 and 23.7 million during the 1956-62 period. Thus, the refuge will be capable of providing for an equivalent of about 133 percent of the duck and goose use days that occurred in the vicinity during the goal period 1950-56 and 65 percent of the number that occurred during the revised goal period of 1956-62.

Furthermore, we found indications that the adjacent State refuges were capable of supporting substantially more waterfowl than occurred in the vicinity of the Ridgefield site during the Bureau's goal periods. Our analysis of waterfowl census data showed that the State's 12,129-acre Sauvie Island refuge had supported, during the peak 1953-59

flight-year when populations were more than twice the 15-year average (1951-1965), approximately 2.8 times the average annual waterfowl use days that occurred in the Ridgefield-Sauvie Island area during the Bureau's goal period 1950-56, and about 1.4 times the average annual use days that occurred during the period 1956-62. We found no indication that the waterfowl on Sauvie Island refuge were inadequately provided for during the 1958-59 flight year. In this respect, we noted that the Oregon State Game Commission, in its annual report, which included a discussion of the Sauvie Island refuge, did not indicate biologically harmful concentrations of waterfowl or food shortages on the refuge.

#### Ottawa refuge, Ohio

We believe that habitat provided on State and private lands was not adequately considered by Region 3 in planning the acquisition of the 4,845-acre Ottawa refuge, Ohio. Region 3 records showed that the Ottawa refuge, approved for acquisition in July 1961 as a migration and nesting area, was being acquired under the accelerated program. The refuge is situated in the 30,000-acre Lake Erie Marshes, adjacent to a State refuge site consisting of about 3,160 acres and 8 miles from the 2,300-acre Cedar Point refuge which was donated to the Federal Government in 1965. According to Region 3 records, some of the most intensively developed and managed hunting clubs in the Midwest are located in the Lake Erie marsh area.

Region 3 waterfowl census data did not identify waterfowl populations or use days that occurred in the subject 30,000-acre Lake Erie Marshes during the Bureau's goal periods of 1950-56 and 1956-62. However, waterfowl population data compiled by the State of Ohio Division of Wildlife, which showed that a peak of 61,000 ducks and a computed total of 4.4 million duck use days occurred in this area during the period 1954-58, were used by the Bureau in arriving at population estimates for the refuge.

Our comparison of these data with estimates of the waterfowl-carrying capability of the site, provided by the Division of Wildlife Refuges, Region 3, showed that the

Ottawa refuge alone, when developed, would be capable of supporting peak populations of 50,000 ducks, or 82 percent of the annual peak, and 3 million duck use days, or 68 percent of the approximate annual use that occurred in the area during the period 1954-58.

A similar comparison for the Bureau's Ottawa and Cedar Point refuges combined showed that these refuges would be capable of supporting peak populations of 85,000 ducks, or 139 percent of the annual peak, and 4 million duck use days, or 91 percent of the annual use that occurred during the period 1954-58. These data also indicated that the goose-carrying capability of these refuges would exceed substantially the requirements of the goose populations reported in the Lake Erie Marshes during the period 1954-58.

We believe that, because a peak of 61,000 ducks and about 4.4 million duck use days were being supported on State and intensively developed private waterfowl areas situated in the 30,000-acre Lake Erie Marshes before the two Federal refuges were established, Region 3 should have fully considered the current and long-range capability of this habitat and should have based its estimated needs on any residual use that might not have been provided for on existing State and private waterfowl areas. We recognize that continued ownership and maintenance of suitable wetlands by State and private interests cannot always be assured. We believe, however, that the Bureau should at least consider past history of State and private waterfowl areas when determining the amount of land needed under public control.

Capability of Federal refuges to exceed  
ability to attract waterfowl to certain areas

Even when available data showed an inability to attract sufficient waterfowl to fully utilize the waterfowl-carrying capability of existing and proposed Federal refuge lands in certain geographical areas, we found that the Bureau did not reduce the size of refuge areas and cancel plans to acquire more habitat.

For example, records of Regions 3 and 4 showed that most of the Canada goose population in the Mississippi Flyway was

supported on Federal and State refuges and private lands in the northern part of the flyway and that Bureau attempts to establish a strong wintering population in the southern part of the flyway over the past 33 years have been unsuccessful. In this regard, Bureau records stated that use of the southern part of the Mississippi Flyway had steadily declined, beginning in the early 1950's, to a point where, in January 1957, less than 10 percent of the Canada goose population wintered in the southern part of the flyway.

We noted that Bureau officials, in order to overcome the problem of diminishing Canada goose populations in the south, made attempts to distribute Canada geese widely through the Mississippi Flyway by:

1. Developing goose habitat at existing refuges as well as acquiring additional habitat at these refuges.
2. Attempting to harass geese off northern refuges in the flyway by hazing and starvation tactics.
3. Capturing thousands of Canada geese at northern refuges and transporting them by truck to southern refuges.
4. Attempting to provide a wide choice of temporary stopping places, commonly referred to as stepping-stone refuges, for any geese that might be en route from nesting areas in the North to wintering areas in the southern part of the flyway. The use of the stepping-stone refuge concept, according to Bureau records, would encourage geese to proceed down the flyway "spreading their benefits more or less evenly both en route and at the terminals."

Bureau records showed that these attempts were unsuccessful and the geese remained in the northern parts of the flyway. The Region 4 Director advised the Bureau Director on January 31, 1966, that, after 3 years' experience in transporting geese from northern to southern refuges, the program would not meet the objective of establishing a strong wintering population in the south.



Notwithstanding its inability to attract enough Canada geese to fully utilize the goose-carrying capability of existing habitat provided on Federal refuges in the south, the Bureau proceeded with plans to acquire and develop more habitat in the south for Canada geese because acquisition of lands within the refuge boundaries had been approved by the Bureau's Central Office and because officials of Region 4 felt that all the land was needed to achieve their goal. Bureau records indicated the Bureau still believed that it would eventually be able to attract Canada geese to the south.

For example, at June 30, 1967, the Bureau was proceeding with plans to add 4,511 acres of land valued at \$800,000 to the 112,570-acre White River refuge in Arkansas, primarily to provide additional food for Canada geese. The stated population goal for this refuge was to provide habitat for 20,000 geese. This addition was proposed even though Region 4 records showed that, at one time, the refuge had supported 18,000 Canada geese but that after 1948 the goose population had declined to a point where only 1,500 geese used the refuge in 1966.

Similarly, at June 30, 1967, additions totaling 18,007 acres valued at \$3.74 million were scheduled for acquisition at the Noxubee and Yazoo refuges, Mississippi. These additions were proposed to provide in part sufficient habitat to support 66,000 Canada geese even though only 361 Canada geese were reported on the refuges during the 1964-65 winter census.

In another instance, Region 4, in August 1966, reaffirmed plans to acquire about 17,800 acres of land valued at \$1.5 million to establish the Davis Island refuge in Mississippi, primarily to support 25,000 Canada geese. Data on current goose use at this site was not available; however, the records showed that only 900 Canada geese were counted in the entire State during the 1964-65 winter census.

We noted similar instances in other areas where Bureau officials had recognized that they would be unable to attract sufficient waterfowl to fully utilize the capability of lands acquired or proposed for acquisition. However, land requirements were not adjusted accordingly.

For example, we noted that acreage requirements for the Conboy Lake refuge in Washington were not modified even though Region 1 expected to attract 39 percent less waterfowl than it considered the refuge was capable of supporting. At the time the 10,513-acre refuge was approved, Region 1 estimated that the site could support 5.15 million duck and goose use days. In January 1967, Region 1 determined that only enough ducks and geese could be attracted to accumulate 3.15 million duck and goose use days at the refuge. It appeared to us that this difference would justify a significant decrease in acreage requirements.

At three other refuges in the Pacific Flyway, Bureau records showed that the waterfowl-carrying capability of the refuge areas substantially exceeded the waterfowl use anticipated by the Pacific Flyway Representative. These sites included the long-established Malheur refuge in Oregon and the Bear River refuge in Utah, as well as the Browns Park refuge in Colorado approved by the Commission in 1963. We noted that, as of June 30, 1967, the Bureau was planning to purchase a 2,740-acre extension valued at about \$200,000 at the 181,000-acre Malheur refuge and a 14,677-acre extension valued at \$1,150,000 at the 65,000-acre Bear River refuge.

We believe the foregoing examples illustrate that, in certain instances, the Bureau has not adequately considered its inability to attract sufficient waterfowl to fully utilize the waterfowl-carrying capability of land already acquired or scheduled for acquisition. Even in those instances where this factor has been considered, the Bureau has not reduced the size of the refuge areas or cancelled plans to purchase additional lands. It appears to us that information on the Bureau's current and foreseeable future ability to attract waterfowl should be considered and that refuge land areas should be adjusted accordingly so as to ensure more efficient use of available funds.

## Acquisition of peripheral land areas

We have found that the Bureau, in order to acquire land areas which its ascertainment biologists considered to be essential to a refuge has acquired or scheduled for acquisition substantial quantities of peripheral lands. Peripheral lands, as hereafter referred to, are those lands that generally extend outward from the contiguous refuge area identified by the ascertainment biologist as suitable habitat. These peripheral lands are not biologically essential habitat but are purchased principally to facilitate the acquisition of essential habitat and, according to the Bureau, to round out otherwise irregular refuge boundaries or to acquire parts of whole ownership tracts that extend beyond the boundaries of the biologically suitable habitat area.

We recognize that there are numerous problems associated with the acquisition of land for migratory waterfowl refuges because ownership boundaries cannot be expected to coincide with refuge boundaries recommended for acquisition by the ascertainment biologist. We recognize also that, while peripheral lands are not biologically essential, it is sometimes necessary to acquire such lands by purchase in fee or by lease or easement to accomplish acquisition of those lands that are biologically essential. Consequently, situations will arise which would justify the acquisition of peripheral land areas.

We believe, however, that the Bureau should attempt to define, as specifically as possible, the conditions under which peripheral land areas may be acquired in order to help ensure that peripheral land acquisitions are kept to a minimum.

We believe it is necessary to develop guidelines that define the specific circumstances under which the acquisition of peripheral land areas may or may not be justified and the circumstances under which consideration should be given to other more economical arrangements, such as the procurement of easements and rights-of-way or the acquisition of land at alternative locations having relatively high value to waterfowl and a lesser amount of peripheral lands.

The Bureau defines habitat suitable for carrying out refuge program objectives as:

"\*\*\* those lands which have a percentage of good or restorable marsh, sheltered waters, wooded swamp lands, or crop lands or combinations thereof which produce or can be made to produce quantities of waterfowl food or on which grains can be raised to provide waterfowl food and forage which will enable the Bureau of Sport Fisheries and Wildlife at strategic concentration points to protect, feed, or rest significant numbers of migratory waterfowl. \*\*\*"

The Bureau's ascertainment biologists are responsible for initially delineating suitable or potentially suitable habitat at specific refuge sites. In this regard, the Central Office of the Bureau advised us in May 1966 that:

"Basically, the ascertainment of an area is a matter of biological study by an individual or individuals experienced in refuge management and waterfowl needs. Boundaries must include habitat for nesting, resting, feeding, escape and protection from disturbance. Each segment of a refuge is important in relation to the whole and, as stated previously, is based on the judgment of an experienced biologist as to the requirements for the birds." (Underscoring supplied.)

The Department of the Interior has advised us that it is a "standing policy" that initial acquisition effort be directed to buying only essential lands. The Department has advised us also that peripheral land may be purchased to facilitate acquisition, but only when it is the most reasonable, economic, and practical way in view of the many considerations that must be taken into account.

We found that the cost of peripheral lands approved for purchase in fee by the Migratory Bird Conservation Commission at nine of the refuge sites we selected for review ranged from about 3 percent to about 41 percent of the approved acquisition cost, as summarized below.

<u>Refuge</u>	<u>Location</u>	<u>Peripheral lands</u>		<u>Percent of total refuge acquisition cost</u>
		<u>Number of acres</u>	<u>Approved acquisition cost</u>	
Alamosa	Colorado	860	\$ 92,000	8
Ankeny	Oregon	600	125,000	16
Baskett Slough	Oregon	460	158,000	18
Conboy Lake	Washington	4,210	544,000	41
Las Vegas	New Mexico	2,800	282,000	24
Maxwell	New Mexico	600	79,000	11
Ottawa	Ohio	220	190,000	9
Quivira	Kansas	630	55,000	5
William L. Finley	Oregon	1,030	138,000	13
Total		11,410	\$1,674,000	

The above table is intended to illustrate the quantity and relative dollar value of peripheral land areas at certain refuges and is not intended to be an all-inclusive list for all refuges.

The quantities of peripheral lands at some refuges represented a significant part of the total refuge area. The Conboy Lake refuge in Washington, for example, included about 4,210 acres of land in addition to the 6,300 acres recommended for acquisition by the ascertainment biologist. (See illustration on p. 35.) Region 1 officials advised us that part of the 4,210 acres was scheduled for acquisition to facilitate dissolution of a whole drainage district in which the 6,300 acres of suitable lands were situated because the developments planned for the refuge were expected to interfere with drainage on the adjacent lands.

Bureau officials advised us that they wanted to dissolve the drainage district because (1) the district had not been in operation for several years and they wanted to clear the records and thus eliminate possible future confusion concerning whether or not the drainage district still had legal existence and (2) the Bureau planned to create relatively large impoundments which would fill the main drainage canal and thus prevent drainage of private lands on the fringe of the drainage district.

The Bureau further stated that they planned to acquire some of the lands adjacent to the impoundments in order to

prevent possible damage caused by seepage. According to the Division of Realty, Region 1, the remaining part of the 4,210 acres was included in the proposed area to facilitate acquisition of whole-ownership tracts extending beyond the boundaries of the drainage district.

We discussed the need to acquire the peripheral lands at Conboy Lake and other refuges with Regional officials early in our fieldwork. Subsequently, the Division of Realty and the Division of Wildlife Refuges, Region 1, re-evaluated the refuge boundary approved by the Commission.

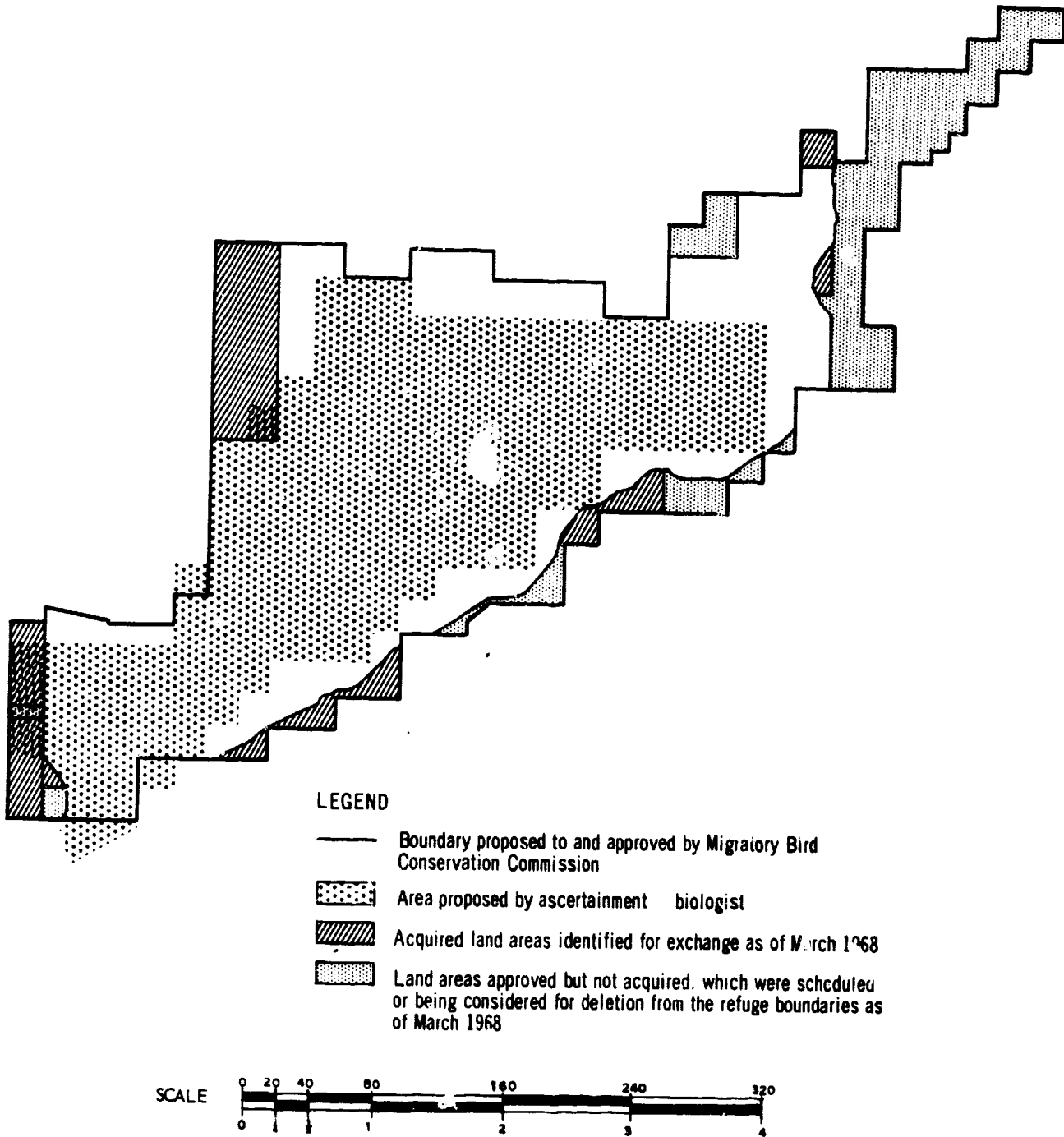
On the basis of information furnished to us in June 1967 and March 1968, by the Division of Realty, a total of about 2,300 acres of land acquired or scheduled for acquisition, and valued at about \$151,000, was being excluded or considered for exclusion from the Conboy Lake refuge because it had been determined that the drainage district could be dissolved and the expected needs of migratory waterfowl could be satisfied without owning all the land by: (1) obtaining no-cost easements and rights-of-way over certain parts of the drainage district; (2) excluding part or all of certain peripheral tracts; and (3) offering for sale some peripheral lands already purchased or exchanging such lands for more desirable lands situated within the refuge area.

After these adjustments are made, the remaining peripheral lands at Conboy Lake refuge will account for about 30 percent of the total estimated refuge cost of \$1,322,000, as initially approved by the Commission. Because a substantial amount of this refuge area consisted of peripheral land and because the refuge site, as discussed on pages 41 through 43, had been determined by the Bureau to be of low value to waterfowl it appeared that consideration of an alternative refuge site would have been appropriate.

# CONBOY LAKE NATIONAL WILDLIFE REFUGE

KLICKITAT COUNTY - WASHINGTON

10, 513 ACRES



Similarly, at the Las Vegas refuge in New Mexico, established in 1965, the Bureau acquired 2,800 acres of peripheral lands in addition to 6,646 acres recommended by the ascertainment biologists. (See illustration on p. 38.) We noted, however, that the reasons for adding tract 58, comprising about 640 acres of land, were no longer valid at the time the proposal for acquisition of the Las Vegas refuge was submitted to the Migratory Bird Conservation Commission for approval.

Bureau records showed that in February 1963, when the preliminary evaluation of this site was made, tracts 58 and 63 located about 2 miles apart were owned by the same person. According to Region 2 records, tract 58 was recommended for acquisition by the Division of Realty, Region 2, because the owner refused to sell tract 63 without also selling tract 58 and because tract 58 had rights to receive water from the main irrigation canal. However, when the lands were appraised in April 1965, the two tracts were in separate ownerships and tract 58 no longer had water rights. Nevertheless, tract 58 was included in the refuge area proposed to the Migratory Bird Conservation Commission, and on August 24, 1965, the Commission approved acquisition of the refuge.

According to the Department of the Interior, lands without water rights in this area are worthless to the owners. Yet, at the time of our review in September 1966, the Bureau had taken an option to purchase tract 58 for \$44,800. As of June 1968 the Bureau had acquired 558 acres for \$39,076. We were advised that the Bureau also planned to acquire the remaining 82 acres, appraised at \$5,724, as soon as the owner could provide clear title to the property.

We have found that acquisitions of peripheral parts of whole-ownership tracts sometimes leave an irregular refuge boundary and that additional peripheral land may be added by the Bureau to round out the area to be acquired. With reference again to the Las Vegas refuge, tracts 52, 55, and 56, comprising a total of about 675 acres valued at approximately \$65,500, were approved for acquisition to round out the irregular refuge boundary which resulted from additions of tracts 57 and 58 and parts of three other whole-ownership tracts.



In this instance, if acquisition of the whole-ownership tracts could not have been avoided, it would have been more practical and economical to delete the peripheral parts causing the irregular boundaries, through exchange or sale, rather than to schedule acquisition of more peripheral lands to round out the refuge boundary. In this way an investment of \$65,500 for tracts 52, 55, and 56 could have been avoided and some benefit could have been derived from sale or exchange of the peripheral land that led to the acquisition of these tracts.

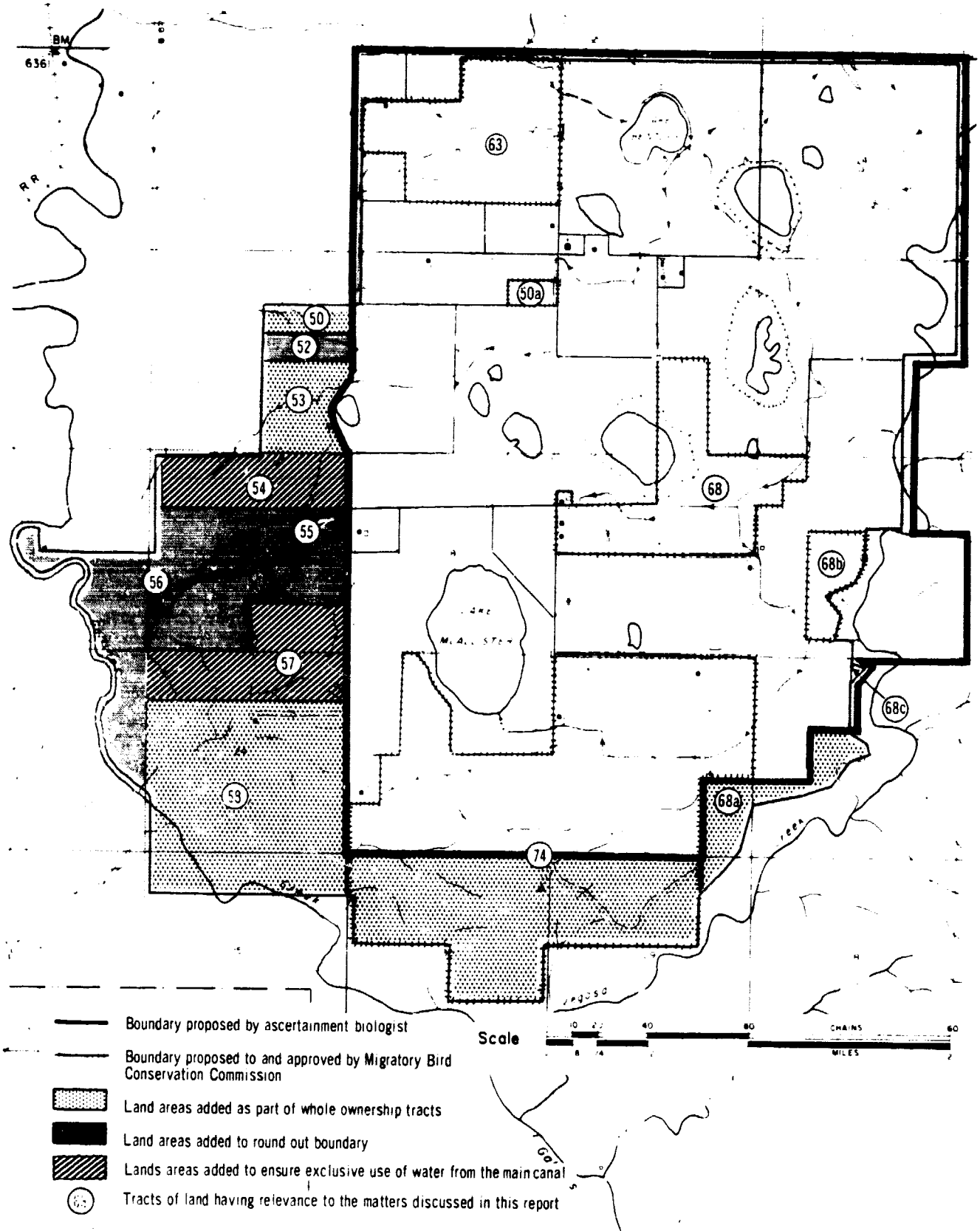
We noted that practices of regional offices differed with respect to efforts made in eliminating peripheral parts of whole-ownership tracts included in an approved refuge boundary. We have been advised by Region 3 officials that the approved boundary is considered to be a maximum boundary for acquisition and that negotiations for the purchase of lands are conducted with a view toward deleting unsuitable parts of such ownerships. Region 1 officials, however, have advised us that negotiations for acquisition are generally conducted with a view toward acquiring all lands within the approved refuge boundary because it is usually more costly to pay severance damages than to acquire whole-ownership tracts.

Bureau Central Office officials advised us with respect to the above inconsistency that, as a general policy, adjustments in the boundary approved by the Migratory Bird Conservation Commission were expected in order to preclude uneconomical acquisition of a substantial amount of unessential land whenever it was practical to acquire a partial ownership and where part of the land could be omitted without affecting the utility of the refuge. They advised also that their field staffs would be furnished with the necessary clarifications of this policy.

In analyzing Region 1 practices, we found several cases which illustrated the effect of not attempting to delete biologically unessential peripheral lands prior to acquisition. For example, we contacted one of the two former owners of a 1,197-acre tract of land located within the approved boundary of the Baskett Slough refuge, Oregon, and he advised us that Region 1 negotiators approached him on the basis of

# LAS VEGAS NATIONAL WILDLIFE REFUGE

SAN MIGUEL COUNTY, NEW MEXICO (9,446 Acres)



wanting the entire tract. Our analysis showed that two parts of this tract, amounting to approximately 265 acres, were located on the periphery of the refuge, away from the main habitat area.

According to Region 1 officials, these parts of the tract, valued at about \$86,700, were added to facilitate acquisition of the remaining lands considered essential to the refuge. We found that about 122 acres of this peripheral land were situated on a timbered hillside which extruded outward from the northeast corner of the refuge area and that about 143 acres were farmland, located along a knoll on the northern boundary of the refuge. The latter tract was separated from the main refuge area by a county road.

As discussed on pages 9 and 32, wetlands and suitable habitat generally mean lowlands covered with shallow and sometimes intermittent water, which can be made to protect, rest, and feed significant numbers of migratory waterfowl. According to Region 1 officials, irregular refuge boundaries and tracts that are separated from the contiguous refuge area are difficult to manage. Our review disclosed that no attempt was made to sever these apparently unessential portions of the tract prior to acquisition. Our analysis of comparable sales included in Region 1 appraisal files indicated that the peripheral land areas would have been approximately as valuable to the owners even if severed.

We brought this matter to the attention of the Regional Director in March 1966. The Division of Realty and the Division of Wildlife Refuges subsequently reevaluated the need for the 265 acres and advised us in June 1967 that this land was now being considered for exchange for land more essential to the development of the refuge.

On the basis of our review, we believe that the Bureau should (1) evaluate the economies of establishing a refuge when purchase of substantial amounts of peripheral land is involved, (2) attempt to avoid fee purchase of peripheral lands through more effective negotiations for exclusions, easements, or rights-of-way, and (3) attempt to exchange or sell biologically unessential peripheral lands acquired to gain control of lands considered to be biologically essential to the refuge.

## Establishment of refuges at locations having relatively low waterfowl value

Under the accelerated wetlands acquisition program, the Bureau has established certain refuges in areas that are of relatively low value to waterfowl. Our review indicated a need for guidelines to assist responsible officials in evaluating the economies of establishing refuges in such areas and to provide a basis for evaluating alternative courses of action.

Before the accelerated land acquisition program commenced, certain criteria had been developed to promote acquisition of refuge sites that were of high value to waterfowl. As discussed on pages 9 through 11 of this report, Bureau officials, together with flyway councils and other advisory groups, had identified and listed, by priority of acquisition, areas within the United States that were considered to be of value to waterfowl.

With regard to criteria for acquiring the lands identified, a policy report dated November 27, 1961, stated that, insofar as possible, areas having primary importance as waterfowl habitat shown in the Wetlands Inventory of 1956 should be used as criteria for wetlands acquisition and that acquisition in fee should be aimed at land and water areas having the highest potential to harbor waterfowl and meet their needs. This statement reemphasized a standing Bureau policy to acquire only those lands with the highest percentage of good or restorable marsh, sheltered water, wooded swamp, or croplands to meet waterfowl refuge program needs for production, migration, and wintering habitat.

Our review of selected refuge sites showed that the Bureau established five refuges, comprising about 39,000 acres, in areas of relatively low value to waterfowl. These refuges represented a planned acquisition cost of about \$5.8 million, based on the latest available Bureau estimates, in addition to proposed development costs of about \$2.1 million, as summarized in the table below.

<u>Refuge</u>	<u>Location</u>	<u>Number of acres initially approved</u>	<u>Estimated acquisition cost</u>	<u>Proposed development costs</u>
Ankeny	Oregon	2,858	\$ 800,000	\$ 171,000
Annada Annex to Mark Twain	Missouri	4,243	1,280,500	324,000
Conboy Lake	Washington	10,513 <sup>a</sup>	1,350,000	296,000
Kootenai	Idaho	2,767	660,000	141,000
Lake Woodruff	Florida	<u>19,012</u>	<u>1,750,000</u>	<u>1,156,000</u>
Total		<u>39,393</u>	<u>\$5,840,500</u>	<u>\$2,088,000</u>

<sup>a</sup>Includes about 267 acres of meandered area which the Government will obtain control of at no cost through the acquisition of adjacent land areas.

Conboy Lake refuge in Washington, established in August 1964, was presented to and approved by the Migratory Bird Conservation Commission for the stated purpose of providing habitat for migratory waterfowl and for controlling crop damage caused by migratory waterfowl. However, the wetlands inventory report for the State of Washington, dated April 1954, did not identify or recognize the Conboy Lake area as being of high or moderate value to waterfowl. This report showed wetlands data for the State of Washington which were gathered by the Bureau in cooperation with the Washington Department of Game in accordance with classification standards set by the State.

The 1954 report stated that the inventory was believed to include 90 percent of all significant wetlands in the State and that most of the remaining 10 percent represented about 25,000 acres of largely marginal habitat located in the higher mountainous areas. The Conboy Lake area is situated on a high mountainous plateau about 15 miles from Mt. Adams.

In 1961, the Pacific Flyway Representative recognized the marginal value of the Conboy Lake area. In a numerical-rating format used to establish the priority of potential refuge sites, the Flyway Representative rated the Conboy Lake area the lowest of 86 sites listed for the flyway because of its relatively unfavorable biological and administration characteristics.

Our review of the rating factors showed, and the Pacific Flyway Representative confirmed, that a relatively wide range of desirability existed between the most and

least desirable of the 86 refuge sites highest numerical rating that could be ical characteristics was 41 and the lo tual biological ratings assigned to th ranged from 6 to 35. In this regard, was assigned a total biological rating

While one of the primary purposes refuge was to attract migrating waterf on private lands, this element of the assigned a numerical value of 0. Furt tract appraisal reports, prepared by t of Realty, for Conboy Lake refuge show acre site approved for acquisition cor 144 acres of water and marsh.

In 1963, the Region 1 Land Acquis also ranked the Conboy Lake area low i was situated in the vicinity of two hi Toppenish and the Ridgefield refuges i are being acquired. We also noted tha in Oregon, established in 1965 under t Coordination Act of 1958, was situated Conboy Lake refuge and would serve an the same waterfowl population. The To and Umatilla refuges are located 50, 6 spectively, from the Conboy Lake site.

Region 1 correspondence to the Bu May 8, 1964, and to the press dated Ma that the Conboy Lake area was considered the Region (1) to facilitate orderly exp stamp funds, (2) to take advantage of op while certain landowners were interestec (3) to provide an additional refuge si Washington.

The Bureau's report to the Commis quisition of the Conboy Lake refuge, c (1) other areas of higher value to wat quired that were available in the Paci basis used in determining that the 6,3

habitat recommended for acquisition were required to satisfy the needs of waterfowl; and (3) an additional 4,210 acres that were recommended for purchase to facilitate acquisition of the suitable habitat were biologically unessential. (See p. 33.)

Similarly, the Kootenai refuge in Idaho was established in 1964 for the stated purpose of restoring habitat, providing feeding and nesting areas, and facilitating management techniques in crop protection. The site was not identified as an area having high or moderate value to waterfowl in the wetlands inventory report for the State of Idaho, dated February 1954, which was developed by the Bureau in cooperation with the Idaho Department of Fish and Game.

Moreover, in 1961 the Pacific Flyway Representative recognized the marginal value of the site by ranking the area number 71 of 86 potential sites in the flyway because of its relatively unfavorable biological and administrative characteristics. With regard to biological suitability, the site was assigned a numerical rating of 11 of a possible 41 points. While crop protection was cited as one of the reasons for establishing the refuge, this element of the biological rating was assigned a numerical value of 0.

Regional wildlife management biologists evaluated the Kootenai area and concluded, in a memorandum dated September 29, 1961, that the area should not be recommended for acquisition. They noted that three other Federal refuges, located from 100 to 135 miles from the Kootenai refuge site, served the same waterfowl population. Bureau records showed that a small State refuge located about 18 miles away also served this population. Finally, the justification submitted to the Commission for approval showed that 89 percent of the proposed area was classed as agriculture, timber, or grazing land. The remaining 11 percent was classed as "other" which includes roads and drainage ditches.

Department officials informed us in June 1967 that Kootenai was needed to help disperse the flock of up to one million mallard ducks in the Columbia River Basin. We noted that, in a report on the Kootenai refuge to the Migratory Bird Conservation Commission, the Bureau had stated, even

after development, that the refuge would be capable of supporting peak populations of only 40,000 ducks and 6,000 geese during migration.

Also, a Bureau report on this refuge dated February 1964 stated that freeze-up in the Kootenai Valley occurs about mid-November and lasts through March. The report stated further that, although the river itself is not frozen over most years, few birds remain in the area. In this regard, we have been informed by the Pacific Flyway Representative that peak populations of ducks and geese occur in the Columbia River Basin during the months when the freeze-up at Kootenai occurs. Thus, it appears to us that the Kootenai refuge would be of little significance in dispersing ducks from the Columbia River Basin.

Regional officials advised us that the Kootenai refuge would never be of primary importance in the Pacific Flyway and that the refuge was established primarily because the Idaho Department of Fish and Game was interested in having a Federal refuge in northern Idaho.

Bureau officials advised us that many of the matters previously discussed in this report were considered and evaluated but that the evaluations were not always documented. In our opinion, such matters should be documented to permit review by higher authority. We have noted in this connection that Bureau reports proposing the purchase of refuges do not always disclose the existence of many matters which we believe are important in evaluating the merits of a refuge proposal such as major biological and engineering problems and the quantities of biologically unessential land involved.

Refuge proposal reports are the principal documents submitted to top management of the Bureau and to the Migratory Bird Conservation Commission for review and approval of refuge sites. In our opinion, these proposal reports should fully disclose all pertinent factors and the impact that these factors have on the feasibility and desirability of a refuge site.



## NEED TO REEVALUATE USEFULNESS OF LANDS CURRENTLY OWNED

As discussed in the preceding sections of this report, we believe that the Bureau has (1) acquired substantially more habitat in certain locations than was needed in Federal ownership, based on stated national population goals, (2) acquired substantial amounts of peripheral lands in order to gain control of suitable habitat, and (3) established refuges at locations having relatively low value to waterfowl. Except for the actions taken by Region 1 officials and discussed on pages 34 and 39, we found little evidence that the Bureau had reevaluated the need for such lands.

In this regard, the Assistant Secretary of the Interior for Fish and Wildlife and Parks advised the Subcommittee on Fisheries and Wildlife Conservation, Committee on Merchant Marine and Fisheries, House of Representatives in 1967 that:

"Since the environment of individual refuges is not static and the needs of specific wildlife populations they serve change, there are instances where refuges or portions of refuges no longer serve their intended purposes, \*\*\*

"In the last 10 years there have been relatively few cases of the disposal of refuge lands; for example, sale or other conveyance out of the United States. Actually, the total was just over 200 acres. Of these lands, less than 15 acres was acquired under the Migratory Bird Conservation Act. \*\*\*"

Part 2, chapter VI, of the Bureau Field Manual for the Branch of Realty, prescribes criteria and policies for identification and disposition of unneeded real property. It cites a departmental policy to identify unneeded or uneconomically utilized properties through a systematic, periodically recurring review and to dispose promptly of such properties. It states in pertinent part:

"Property not presently used for Bureau's program activities and for which no future need is foreseen should be disposed of promptly. This

category is not limited to entire installations but is applicable to any portion of an installation unneeded even though the larger part of the unit is required for program activities. It will be noted that the Manual refers to program utilization as distinguished from nonprogram but authorized utilization. The determination of whether property is needed for program purposes can be answered by determining whether program funds would be expended to purchase land or construct buildings for the present uses of the existing real property. \*\*\*"

The Bureau has stated that waterfowl utilization of land is the true measure of its value as a refuge. Bureau officials have advised us that it is difficult to determine whether or not a tract of land is needed for refuge purposes until a refuge has been an operating unit for several years and waterfowl use patterns are established. We noted, however, several instances where certain tracts of land were not identified for disposal even though the refuge had been an operational unit for many years and had not supported significant numbers of waterfowl.

For instance, at the Laguna Atascosa refuge in Texas, we found that the Bureau had retained apparently unessential lands acquired many years ago as parts of whole-ownership tracts on this refuge. Tract 144, comprising 11,275 acres of land, and tracts 48 and 48a, comprising 18,140 acres of land, for a total of 29,415 acres, were approved for acquisition on this refuge in October 1945 and June 1948, respectively.

The Chief, Branch of Wildlife Refuges, stated before the Migratory Bird Conservation Commission on May 4, 1954: "As to the size of the area it is larger than we need because the more important tracts had to be bought in their entirety." The parts of tracts 144 and 48 that make up Refuge Units I and IV contain a total of about 11,200 acres of land. Region 2 records of waterfowl utilization showed that these refuge units provided for only about one third of 1 percent of the total waterfowl use days supported by the refuge during the 6-year period ended August 1965.

The Department of the Interior advised us that Unit IV had great potential for freshwater development and that Unit I was a relatively rare area of natural brush that attracted the Fulvous tree duck and thousands of other birds. According to a Bureau official, the Fulvous tree duck is not a rare or endangered species. It is, however, uncommon to the United States because it is a subtropical bird that seldom ranges further north than Mexico.

We were unable to evaluate the potential for development of Unit IV, because the Division of Engineering, Region 2, had not prepared a plan showing how this unit could be developed or identified a reliable source of fresh water for such development. Further, we were unable to determine whether development of this unit was necessary to support waterfowl that need to be attracted to and maintained at the site because waterfowl population goals had not been established for this geographical area and guidelines had not been established for equating the capabilities of land with the requirements of birds, on a coordinated flyway basis.

We did note, however, that the refuge land use plan dated June 1964 stated that the only dependable supply of fresh water to Unit IV was an excavated tank supplied by rainfall and that it was sometimes necessary to pipe water to a small livestock watering tank on the unit. The plan further stated that this factor involved considerable expense. Therefore, the Department's position that Unit IV had great potential for freshwater development appeared to conflict with the regional records, and raised a doubt as to whether development of this unit would be economically practical even if a need for additional habitat could be demonstrated.

With regard to use of the refuge by the Fulvous tree duck, Region 2 waterfowl census figures showed that, during the 6-year period ended December 1965, an average annual utilization of only 205 Fulvous tree duck use days occurred on the 45,000-acre refuge area, most of which was upland brush, grass, and agricultural land. All of the use days recorded occurred during 3 years of the 6-year period.

In discussing disposal practices with Bureau officials, we were advised that such incidental lands as might be obtained through the acquisition of waterfowl lands would not be disposed of if they had utility for other authorized purposes. The Department of the Interior advised us further that such lands would not be disposed of until a lack of need in the reasonably foreseeable future had been definitely established.

AGENCY ACTIONS AND POSITIONS  
AND OUR EVALUATION THEREOF

Certain Bureau officials recognized that established policy and criteria were not fully adequate and that there was a need to provide more specific goals and implementing policies and guidelines for land acquisition. For example, in a report entitled "A Management Appraisal of the Bureau of Sport Fisheries and Wildlife," dated September 1962, a Bureau management appraisal team made such comments as the following with respect to the refuge program:

"The long-range program, in its many revisions, is critically deficient in goals and policies, which in turn would have had to be based on the requirements for and of fish and wildlife resources. \*\*\*

\* \* \* \*

"Maintaining the migratory bird resource is a major Bureau activity that lacks many important documented national goals, such as U.S. waterfowl production goals. Significantly lacking is sufficient documentation, explanation, and the coordination which assures a refuge manager that the goals for his refuge are part of a coordinated Bureau program to attain a national goal.

\* \* \* \*

"\*\*\* Specifically, what is the Bureau's goal in preserving the waterfowl resource--total numbers, species composition, production, annual harvest, distribution of associated recreation? For what numbers are we specifically providing migration habitat-wintering habitat? \*\*\*."

On October 26, 1964, the Bureau's Assistant Director, Technical Services, advised the Bureau's Director that certain changes were needed in the land acquisition review procedures. In support of his recommended changes, the Assistant Director stated that, despite the relative

affluence of land acquisition dollars, the funds were not limitless and that approving land acquisition proposals as they come along might result in a lack of funds for more worthwhile projects at some future time. He stated further that the present operation had little direction and that nothing in the current procedures assured the Bureau of spending funds for land acquisition in the wisest way.

On January 19, 1965, the Bureau Director announced the establishment of a land acquisition technical subcommittee in the Central Office whose function in part was to (1) develop annual acquisition goals by flyways and by habitat types; (2) develop comprehensive policy guidelines designed to reach established Bureau objectives; and (3) review regional acquisition schedules for compliance with established policies, goals, and instructions. During the course of our review, however, we were advised that the subcommittee had not yet accomplished these tasks.

In April 1966 we met with the Bureau Director and members of his staff and requested their written views on actions needed to improve controls over refuge land acquisitions.

In a memorandum furnished us on May 25, 1966, Bureau officials advised us that waterfowl biologists have been attempting for years to quantify waterfowl populations in relation to their requirements but that no system had been developed which adequately measured all the factors involved. They explained that research was expected to gradually provide more definitive measurements of the physical needs of birds than the observed use and empirical judgment on which the program now relied. However, they stated that there was still the immediate need to preserve a gross amount of usable habitat in public ownership and that the Bureau must rely on the collective judgment of technicians, flyway councils, social entities, and the public.

Subsequent to our meeting with Bureau officials, the Bureau initiated the Flyway Habitat Management Unit Project for the stated purpose of translating flyway waterfowl population and management objectives into more specific terms, thus providing a rationale supported by a framework

of guidelines for the acquisition and management of migration and wintering habitat. In part, the project required a determination of (1) the number of waterfowl that need to be attracted and maintained in specific geographical units of each flyway; (2) the amount of habitat required to support these populations; and (3) the amount of this support capability that was to be provided on Federal, State, and private waterfowl areas.

In initiating the project on July 13, 1966, the Bureau redefined the national population and waterfowl refuge program objectives to permit full consideration of current waterfowl use and hunting opportunities. In this regard, the Bureau stated that the broad goals for waterfowl would be to maintain the continental waterfowl resource equivalent to that which occurred during the high and low periods from 1956 through 1962. This revised population goal was translated to mean:

- "(1) a fall flight of ducks fluctuating from a low of approximately 60 million to a high of 100 million, and averaging approximately 75 million;
- "(2) goals for geese, which are not judged at this time to be limited by breeding habitat, \*\*\* which may exceed the levels attained in the late 1950's and
- "(3) a maximum of 2.5 million hunters in the United States capable of harvesting 15 million ducks during periods of high waterfowl populations."

The Bureau selected 1965 as the model year to determine the average number of waterfowl present by species and by month in specific geographical areas within each flyway and stated in part that:

"\*\*\* the manager of each private, State, or Federal waterfowl management area within the unit will have a definite objective towards which he may direct his management and development plans. Moreover, the location and size of needed land acquisition can be rationally planned."

The Secretary of the Interior announced in April 1966 that, he had asked the Department Advisory Board of Wildlife and Game Management to study what a national wildlife refuge system should be. A summary of the Board's report is included beginning on page 58. In making this announcement, the Secretary noted that the system had developed mainly in relation to migratory waterfowl and that, to a considerable degree, the system had grown opportunistically rather than on a planned, scientific basis.

We brought certain of the matters disclosed by our review to the attention of the Department of the Interior in a letter dated April 4, 1967. In this letter, we requested the Department's comments on our tentative conclusions and its advice on any planned or proposed actions that would be directed toward improvements in the migratory waterfowl refuge land acquisition program.

On June 26, 1967, the Department replied to our letter. In commenting on our tentative conclusions that the Bureau should establish more specific waterfowl population goals and land acquisition guidelines for its refuge program, the Department stated:

"The Bureau has consistently applied the experienced judgment of its qualified staff in reaching decisions to acquire or dispose of wildfowl refuge lands. Prior to making these decisions it obtains and considers the opinions of others knowledgeable in this field. The factors that must be evaluated are numerous, complex, and variable. They are not susceptible to full codification in the form of precise criteria. We have noted no indication that additional guidelines could serve as a substitute for the collective judgment of qualified bureau, State, and local officials, and private and quasi-private organizations, committees, and individuals on whom the bureau traditionally relies. However, as noted in the report, we are undertaking a program to elaborate and formalize the literature furnished bureau employees with respect to criteria for coping with waterfowl refuge program problems. This may result in



some decrease in the areas in which judgment must be applied."

The Department stated that the Bureau concurred in the desirability of refining policy and procedure guidelines, whenever possible, and that measures were being taken that should lead to such refinement. In this regard, the Department stated the Flyway Habitat Management Unit Project:

"\*\*\* is expected to supply much of the information needed to better relate a specific unit of habitat not only to local but to national needs. This project is designed to gather specific data on waterfowl requirements for water, food, resting space, distribution, needed sanctuary and protection related to hunting pressures and natural mortality and foreseeable habitat and demographic modification. These data will assist in making decisions on needed acreages for water, croplands, uplands, and buffer areas. In regard to population goals, the project is expected to yield data that will suggest specific designs of space requirements. The project is scheduled for completion in 1967 and application in early 1968. \*\*\*"

In addition, the Department advised us that a periodic habitat inventory was initiated in 1966 for the purpose of presenting a more definitive breakdown of habitat now included in refuge boundaries as either habitat used directly by waterfowl or waterfowl management acreage. The Department advised us that they believed this periodic inventory would permit greater efficiency in maintaining current information on the importance of each acre in a given refuge.

The Department also advised us that the Bureau had initiated plans to (1) better document its waterfowl inventory systems to make them more consistent and dependable, (2) revise the Realty Manual to provide better documentation of severance damages, (3) submit information on selection of refuge boundaries, and (4) develop and automate retrieval of data on refuges to enable regular and timely review of the refuge program in a manner that

measured its effectiveness toward national goals of waterfowl management.

As indicated above, Bureau officials have recognized the need for improved management control over their migratory waterfowl refuge land acquisition program since the accelerated program was first initiated. However, no specific actions thus far taken by the Bureau have resulted in defined waterfowl population goals and land investment guidelines. We believe that the Flyway Habitat Management Unit Project instituted in July 1966 and other measures being taken can be used as a basis for establishment of more specific waterfowl population goals and related land investment guidelines upon which future land acquisition decisions can be based.

We believe that the actions being undertaken by the Bureau are a step in the right direction and should produce valuable information which can be used in the establishment of an efficient, well-coordinated migratory waterfowl refuge system.

## CONCLUSIONS

We believe our findings illustrate that there is need for the Bureau to further define its waterfowl population goals, by flyway and by specific geographic area within the flyways, and to develop related land acquisition guidelines for the assistance of those officials who determine the quantity, quality, and location of the essential habitat necessary to meet established program objectives. We conclude that the establishment of such goals and guidelines would better enable Bureau officials (1) to determine the needs of waterfowl in particular areas in terms of quantities of land, (2) to evaluate the economies of purchasing substantial quantities of biologically unessential peripheral lands, and (3) to evaluate the economies of establishing refuges in areas of relatively low value to waterfowl.

We conclude also that migratory waterfowl habitat provided by the several States and by private interests is a significant factor to be considered by the Bureau in determining Federal habitat requirements and that there is a need for the Bureau to enter into cooperative agreements with the several States and with owners of private waterfowl management areas, which would define the specific responsibilities of each party with regard to the number of waterfowl to be provided for and the quantities and locations of land to be acquired and developed in support of these waterfowl.

We acknowledge that numerous, complex, and variable factors are involved in reaching decisions to acquire or retain refuge lands and that goals and guidelines will not serve as a substitute for judgments that must be made. Rather than being a substitute for judgment, we believe that more specific waterfowl population goals, related land investment guidelines, and formal cooperative agreements with State and private interests will strengthen the decision making process by helping to ensure that decisions are based on all factors considered to be important by the Department and the Bureau.

We further conclude that the Bureau has not implemented its policy to periodically identify and dispose of unneeded

or uneconomically utilized lands. We believe that, because the Bureau has already acquired substantial quantities of waterfowl refuge lands without the benefit of adequate goals and guidelines, there is a need for the Bureau to reevaluate the use being made of all refuge lands currently owned.

#### RECOMMENDATIONS TO THE SECRETARY OF THE INTERIOR

We recommend that the Secretary of the Interior require the Director of the Bureau to establish appropriate waterfowl population goals and related land investment guidelines for future guidance of operating officials. Waterfowl population goals need to be established, by specific geographical areas within each flyway, as standards upon which acquisitions of suitable habitat can be planned and coordinated. Guidelines are needed:

1. For determining the quantity, quality, and location of habitat needed to support waterfowl populations.
2. For recognizing the current and long-range waterfowl carrying capability of existing and proposed Federal, State, and private waterfowl areas in planning future acquisitions.
3. For revising plans on the basis of the Bureau's ability to attract waterfowl to any particular area.
4. For evaluating the economies of purchasing substantial quantities of peripheral lands both from the standpoint of whether the acquisitions could be avoided in establishing refuges and from the standpoint of whether refuges should be established if substantial acquisitions of peripheral lands cannot be avoided.
5. For evaluating the economies of establishing refuges in areas of relatively low value to waterfowl.
6. For fully disclosing the nature, effect, and significance of pertinent information concerning land acquisition proposals, in refuge proposal reports submitted to the Migratory Bird Conservation Commission.

We recommend further that the Secretary seek cooperative agreements, with the several States and with owners of private waterfowl areas, which define the specific responsibilities of the three parties for meeting migratory waterfowl needs in the various flyways and within specific geographical locations in the flyways.

In view of the substantial amounts of migratory waterfowl refuge land presently scheduled for acquisition by the Bureau and the absence of adequate goals and guidelines, we recommend also that the Secretary consider limiting future acquisitions until such time as more specific waterfowl population goals and related land investment guidelines are developed to help ensure that the funds available will be used to the best advantage of the waterfowl resource and the public.

In addition, we recommend that, upon establishment of the waterfowl population goals and related land investment guidelines contemplated in our report, the Secretary require the Director of the Bureau to reevaluate prior acquisitions in light of such goals and guidelines and to schedule for sale or exchange lands not essential to the needs of the migratory waterfowl refuge program.

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On February 21, 1968, and July 2, 1968, the Department informed us (see app. II and III) that, until the recommendations of the Secretarial Advisory Board on Wildlife and Game Management, received on March 11, 1968, and currently under study, had been carefully considered and the Secretary had decided on a course of action, it could not comment definitively on our recommendations for corrective action (see above) and that it would be premature to commit itself to acceptance or rebuttal of the recommendations in our report.

The Department stated that consideration will be given to our recommendations in the development of policies and procedures necessary to achieve the goals and objectives of the Bureau with which the recently issued report of the Secretary's Advisory Board on Wildlife and Game Management was concerned.

The Advisory Board in its report, as summarized below, reached a number of conclusions and made a number of statements and recommendations similar to those contained in our report.

Initially, the Board concluded that what was lacking was a clear statement of policy or philosophy as to what the National Wildlife Refuge System should be and what the logical tenets of its future development were. The Board pointed out that a number of different views existed about what the refuge system should be but that the national system could not be all things to all people.

The Board called for a redefinition of refuge goals and objectives to provide for maximum value of the system to the broadest possible spectrum of interests. In this respect the Board viewed each National Wildlife Refuge as a bit of natural landscape where the full spectrum of native wildlife may find food, shelter, protection, and a home and where the outdoor public could come to see wild birds and mammals in variety and abundance compatible with the refuge environment.

The Board concluded that the total endeavor in the United States and Canada was not adequate to maintain an average fall population equal to the Bureau's 1956-62 goal period. The Board further concluded that, even though the ultimate dimensions of the Federal system of waterfowl areas were still obscure, it would be timely for the Bureau to make further rigorous analyses of land needs as a guide to long-range planning. According to the Board, the process of refuge expansion should be subject to orderly planning, leading ultimately to a more or less stabilized network of management units serving the full spectrum of waterfowl needs.

With regard to the administration and planning of the refuge system, the Board commented that, when the refuge system was smaller, it was operated successfully from a strong central administrative office in Washington. This form of management gave way in recent years to an almost completely decentralized system in which the operational policies and goals of the refuges were delegated largely to the regional offices and in some cases were assigned in turn to

individual refuge managers. The Board concluded that, as a result, the refuge system had lost much of its cohesiveness and, in fact, could scarcely be designated as a system.

The Board has indicated that greater planning effort must be focused on satisfying ecological requirements of subpopulations and specific flocks and that this task logically falls to the Washington office, where regional and local views can be aligned to an overall continental perspective. In the Board's opinion, this accelerated, coordinated planning will:

1. Facilitate full analysis and use of existing management facts.
2. Help pinpoint specific voids in knowledge.
3. Provide a broad framework within which individual management efforts can be fitted.
4. Identify strategic locations where additional refuges are needed.
5. Help refuges function as a coordinated system for some migratory birds as well as, in individual cases, an environment for a wide variety of wildlife.
6. Permit reduction of the large regional staffs of refuge administrators and increases in manpower on the refuges where the work must be done.

Information gathered from well coordinated efforts, according to the Board, should shed more light on the basic questions asked by the Congress and the General Accounting Office.

With regard to the role of State and private refuges, the Board indicated that it had not overlooked the great importance of refuge units established and operated by other agencies, largely the State game departments. For refuges to function as an effective network, according to the Board, it is imperative that the respective administrators cooperate in defining collective goals and striving to achieve

them. The Board indicated that it had encountered too many examples where cooperation was not in evidence.

The Board recommended, in part, that State and private agencies be encouraged to extend the effectiveness of the national program of breeding-grounds preservation and restoration and that the maintenance of natural wetlands should be a responsibility of all land and water use agencies. The Board recommended also that continuing appraisal be made of the existing system of refuges, with a view to perfecting the long-range plans for land acquisition and development. According to the Board, the national refuges constitute an open-end system and some units will doubtless be added and others will be deleted over an indefinite period of time. The Board suggested, however, that these adjustments follow a systematic procedure aimed at satisfying firmly defined goals.

The Board further recommended that there be substantial strengthening of central administrative authority in the Division of Wildlife Refuges. According to the Board, the loose structure of the administrative framework in the recent past has precluded development of the system along predetermined lines of policy.



## **APPENDIXES**

PRINCIPAL OFFICIALS OF THE DEPARTMENT OF THE INTERIOR  
THE UNITED STATES FISH AND WILDLIFE SERVICE, AND  
THE BUREAU OF SPORT FISHERIES AND WILDLIFE  
RESPONSIBLE FOR ADMINISTRATION OF THE  
ACTIVITIES DISCUSSED IN THIS REPORT

<u>Tenure of office</u>	
<u>From</u>	<u>To</u>

DEPARTMENT OF THE INTERIOR

SECRETARY OF THE INTERIOR:  
Stewart L. Udall

Jan. 1961	Present
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UNDER SECRETARY OF THE INTERIOR:

David S. Black

Aug. 1967	Present
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Charles F. Luce

Sept. 1966	Aug. 1967
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John A. Carver, Jr.

Jan. 1965	Sept. 1966
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James K. Carr

Jan. 1961	July 1964
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ASSISTANT SECRETARY OF THE INTERIOR--FISH AND WILDLIFE AND  
PARKS (note a):

Stanley A. Cain

May 1965	Present
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Frank P. Briggs

Mar. 1961	Feb. 1965
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ASSISTANT SECRETARY FOR ADMINISTRATION:

Robert C. McConnell

Aug. 1967	Present
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Vacant

Dec. 1965	Aug. 1967
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D. Otis Beasley

Sept. 1952	Dec. 1965
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UNITED STATES FISH AND WILDLIFE SERVICE

COMMISSIONER OF FISH AND WILDLIFE:  
Clarence F. Pautzke

June 1961	Present
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PRINCIPAL OFFICIALS OF THE DEPARTMENT OF THE INTERIOR  
THE UNITED STATES FISH AND WILDLIFE SERVICE, AND  
THE BUREAU OF SPORT FISHERIES AND WILDLIFE  
RESPONSIBLE FOR ADMINISTRATION OF THE  
ACTIVITIES DISCUSSED IN THIS REPORT (continued)

<u>Tenure of office</u>	
<u>From</u>	<u>To</u>
<u>UNITED STATES FISH AND WILDLIFE SERVICE</u>	
(continued)	

DIRECTOR, BUREAU OF SPORT FISHERIES  
AND WILDLIFE:

John S. Gottschalk	Dec. 1964	Present
Daniel H. Janzen	Mar. 1957	Nov. 1964

<sup>a</sup>Title changed from Assistant Secretary of the Interior--  
Fish and Wildlife, effective June 4, 1967.



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

FEB 21 1968

Mr. Eugene L. Pahl  
Assistant Director  
U. S. General Accounting Office  
Washington, D. C. 20548

Dear Mr. Pahl:

We have reviewed the GAO draft report: "Goals and Guidelines Needed for Acquiring Migratory Waterfowl Refuge Lands." Because of intervening Departmental action, neither the Bureau nor the Department would be well-advised to comment further at this time on the major issues raised.

A Secretarial Advisory Board, composed of internationally recognized wildlife authorities and administrators, was established some time ago, to study "what the National Wildlife Refuge System should be, if it could be rounded out, filled in, or otherwise altered and completed to include all that our national wildlife lands and waters should include, or conversely, need not or should not include." Inherent in the Board's deliberations is the area of land acquisition.

The Board's report is scheduled to be received next month. It is expected to cover, among other matters, most of the subjects to which your report is devoted and may strongly influence the Department's future wild fowl refuge policies. Until the Board's recommendations have been carefully considered, and the Secretary has decided on a course of action, we cannot comment definitively upon the corrective actions you suggest.

In view of this unusual situation, we feel that it would be premature to commit ourselves to acceptance or rebuttal of the recommendations of your report.

You may be assured however that the thrust of the report will be most useful in analyzing any program or procedural changes under consideration. I will be glad to discuss our immediate position further should you desire.

Sincerely yours,

Director of Survey and Review



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

Mr. Eugene L. Pahl  
Assistant Director, Civil Division  
General Accounting Office  
Washington, D. C. 20548

JUL 2 1968

Dear Mr. Pahl:

In our letter to you, dated February 21, we acknowledged receipt of the GAO draft report: "Goals and Guidelines Needed for Acquiring Migratory Waterfowl Refuge Lands." We commented then that it would be untimely for us to respond finally to your draft, anticipating a mid-March report from the Secretary's Advisory Board on Wildlife and Game Management.

The Secretary received that report March 11 (copy enclosed), and the Board's conclusions and recommendations are under detailed study.

The Board's report is essentially in terms of concern for goals and objectives of the Bureau of Sport Fisheries and Wildlife. It is thus incumbent upon us to develop the policies and procedures to achieve these.

We have the competency to assign to this effort and, as we proceed with the development, consideration will be given to the recommendations in your audit report.

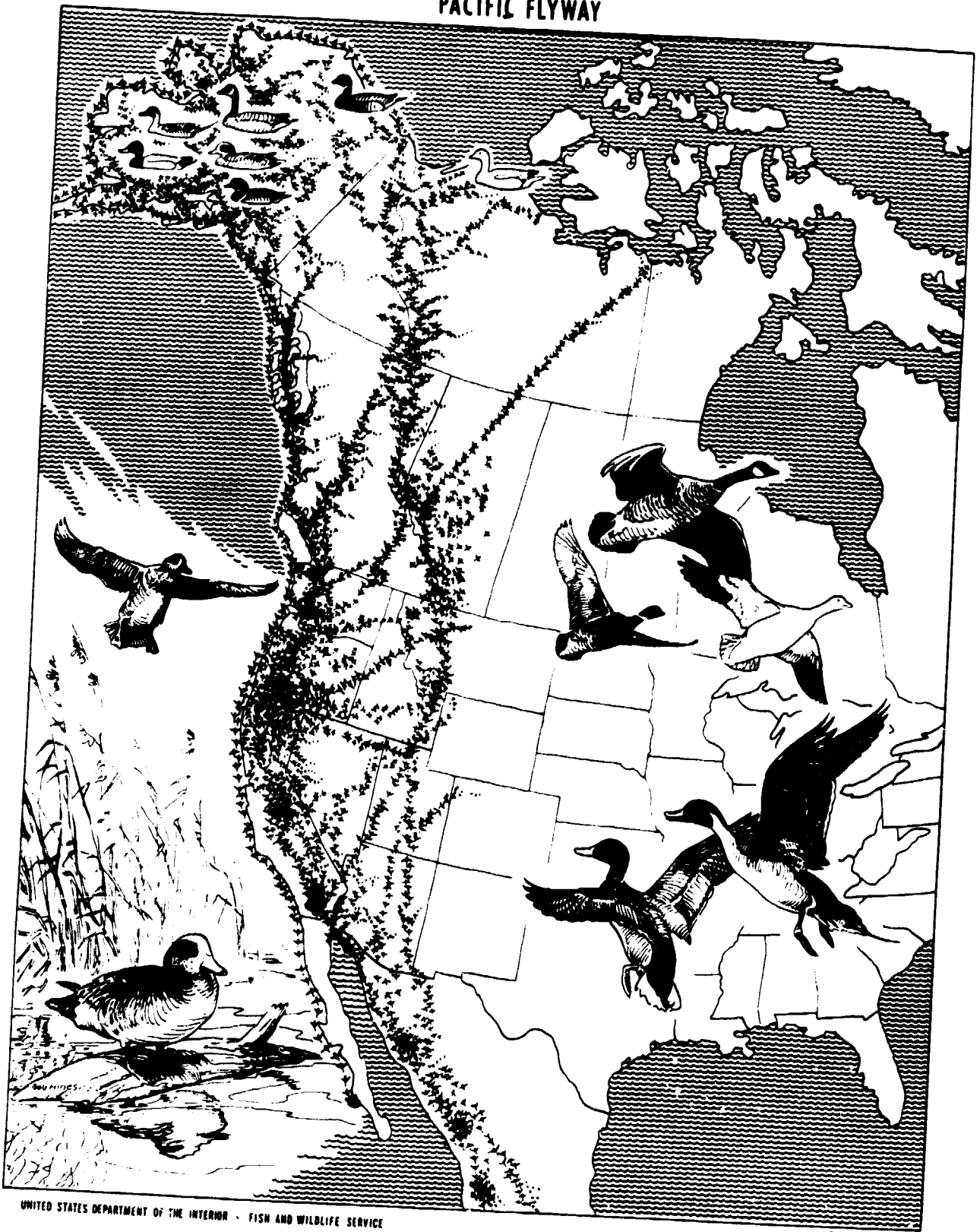
We appreciate the opportunities we had for an exchange of views on this program and hope that in your reading of the Board's report you will take further cognizance of the dimensions of our problems.

Sincerely yours,

*W. H. R. [Signature]*  
Director of Survey and Review

Enclosure

# PACIFIC FLYWAY



UNITED STATES DEPARTMENT OF THE INTERIOR • FISH AND WILDLIFE SERVICE

ENT. SUP. D. C. 96-1442

## PACIFIC ADMINISTRATIVE FLYWAY



0 100 200 300 400  
SCALE OF MILES

# CENTRAL FLYWAY

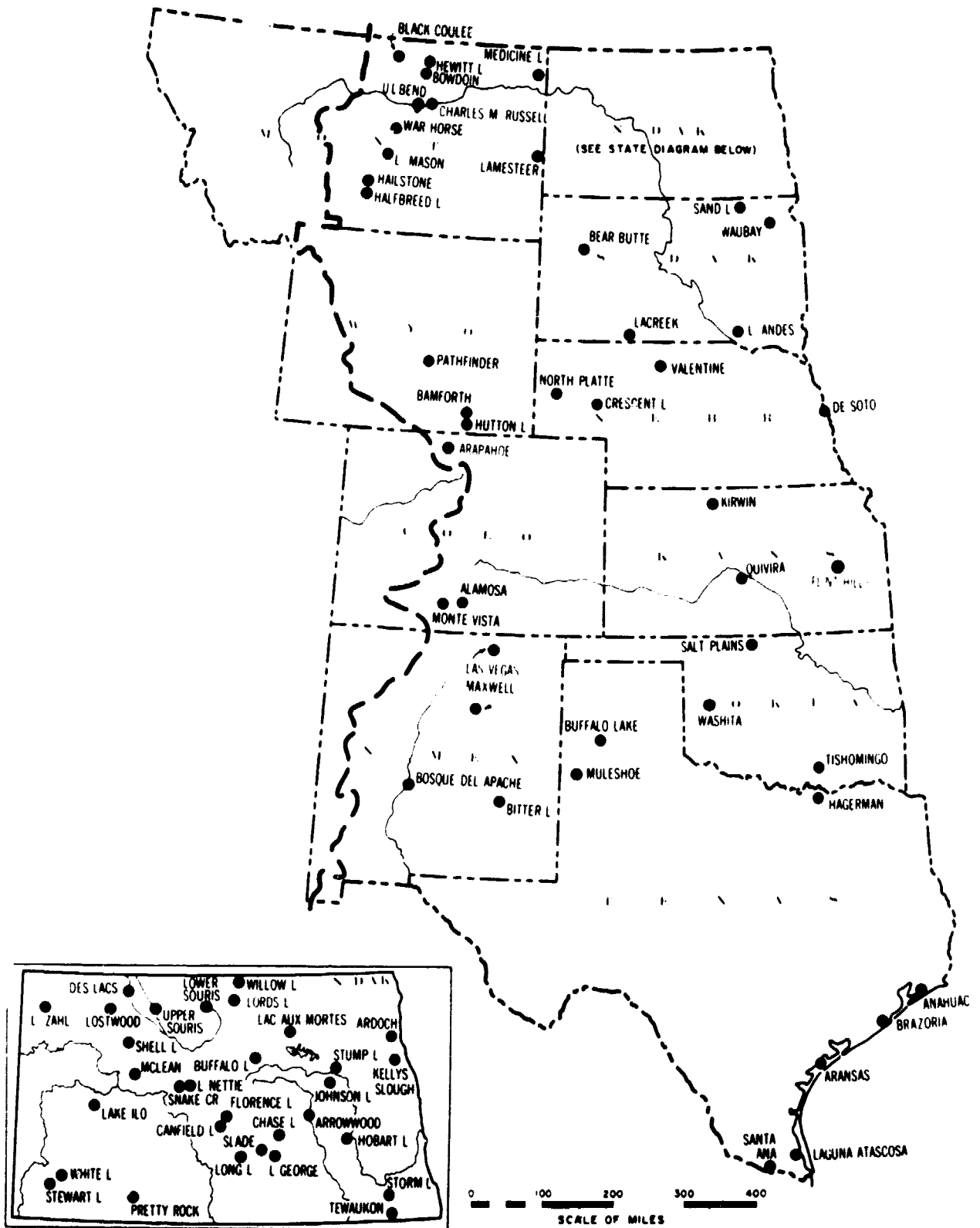


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## CENTRAL ADMINISTRATIVE FLYWAY



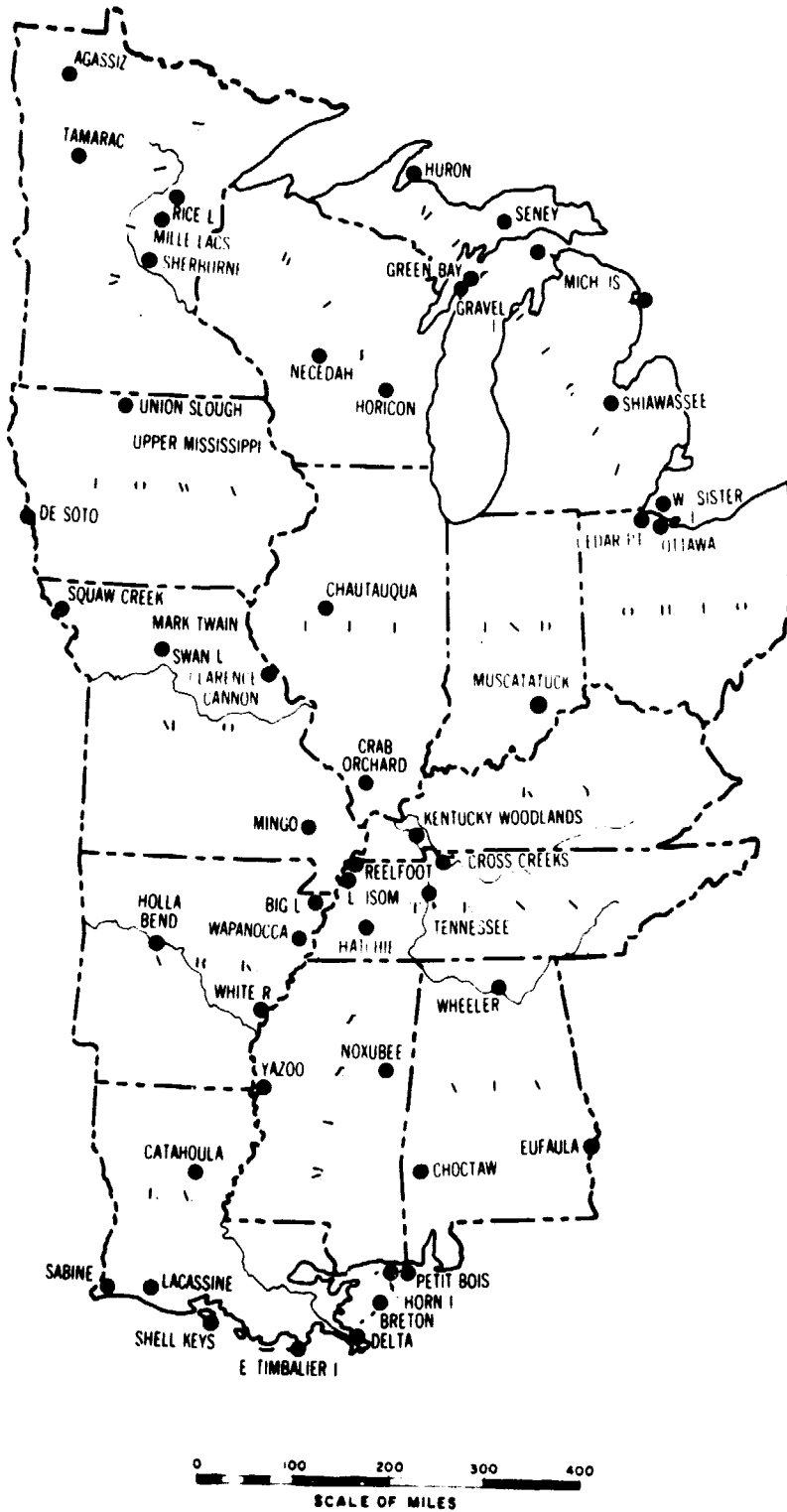
# MISSISSIPPI FLYWAY



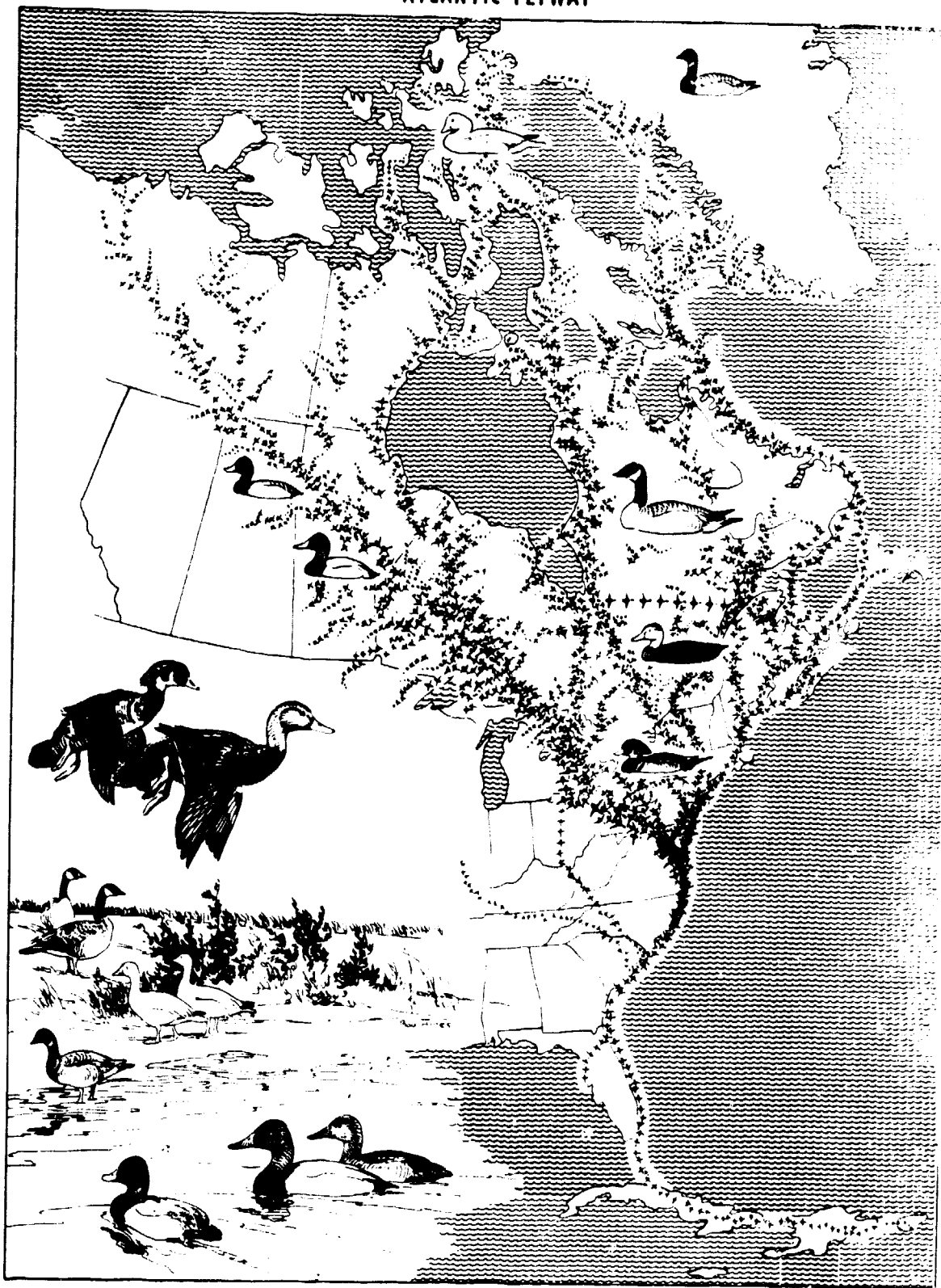
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## MISSISSIPPI ADMINISTRATIVE FLYWAY



# ATLANTIC FLYWAY



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# ATLANTIC ADMINISTRATIVE FLYWAY

