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United States General Accounting Office

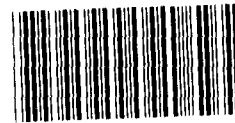
GAO

Report to Congressional Requesters

February 1986

RESOURCE
PROTECTION

Mississippi Valley
Canada Geese: Flyway
Management Obstacles



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Resources, Community, and
Economic Development Division

B-221640

February 5, 1986

The Honorable Ed Jones
House of Representatives

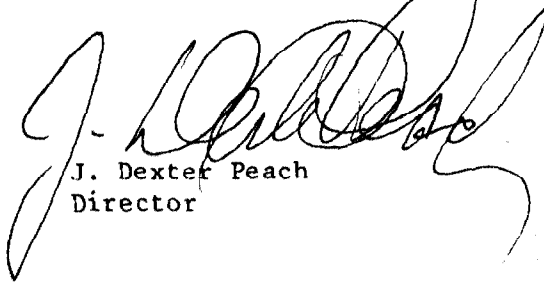
The Honorable Jim Sasser
United States Senate

The Honorable Albert Gore, Jr.
United States Senate

This report is in response to your request that we examine the U.S. Fish and Wildlife Service's hunting regulations and cooperative management program for the Mississippi Valley Population of Canada geese.

The report discusses the program's progress in accomplishing its objectives to enlarge the size and range of the Mississippi Valley Population of Canada geese in the Mississippi flyway and the extent of state and federal cooperation. The report makes two recommendations to the Fish and Wildlife Service to improve the program.

As arranged with your offices, we are sending copies of this report to members of the Mississippi Flyway Council; the Secretary of the Interior; and the Director, U.S. Fish and Wildlife Service. Copies will also be made available to others upon request.



J. Dexter Peach
Director

Executive Summary

Millions of people enjoy watching, photographing, or hunting the 3 million geese that annually migrate across the United States. The Fish and Wildlife Service is responsible for protecting waterfowl and each year promulgates regulations limiting how many waterfowl hunters can shoot. Because a cooperative relationship exists between the Service and the states in managing waterfowl, the Service works with states' flyway councils to establish hunting regulations.

In 1979, the Service joined in a cooperative program with 10 of 14 states in the Mississippi Flyway Council to improve the distribution of the Mississippi Valley Population (MVP) of Canada geese, one of four populations in the flyway. The overall program goal was to increase hunting opportunities throughout the flyway by increasing the MVP's size to about 874,000 by 1983 with at least 200,000 of the geese migrating below the 36th parallel to the flyway's southern states.

Because of concerns that this goal had not been met, Senators Jim Sasser and Albert Gore, Jr., and Representative Ed Jones asked GAO to review the program's progress and the level of cooperation between the states and the Service.

Background

The primary tool for increasing the size of the MVP is regulatory control of annual sport hunting. The program calls for harvests to be restricted to let the flock grow 15 percent each year and closed hunting south of the 36th parallel. The Service relies on the Council to agree on and provide the Service with recommendations on hunting regulations. These recommendations have included such things as setting harvest objectives for specific hunting areas within major harvest states to limit the numbers of geese that can be shot.

Once the Council decides on the amount of sport harvest to allow, the Service promulgates hunting regulations and relies on each state to apply the necessary harvest control methods, such as monitoring and season closure, to meet the agreed-upon harvest limits. Strategies for increasing MVP southern migration are more complex but are also linked to effective regulatory control of hunting.

Results in Brief

A cooperative approach to achieving the program's population objective has not been successful. MVP Canada geese, rather than increasing, decreased 27 percent between 1979 and December 1984. This occurred because states did not implement effective control measures needed to

adhere to the harvest objectives. As a result, overharvests were substantial. Given the cooperative nature of the program, the Service has been reluctant to take stronger regulatory action to assure that the states adhere to their objectives.

Principal Findings

Program Progress

Since 1979 overall MVP harvest objectives were exceeded by 65 percent, or 295,000 geese, in Wisconsin, Illinois, Michigan, Kentucky, Tennessee, and Indiana. As a result, the MVP declined to 316,000 from 434,000. Seventy-four percent of the overharvests occurred in Wisconsin and Illinois, the two major harvest states.

During this time the Service and the Council took steps to reduce overharvests, including shortening the hunting season from 70 to 20 days and identifying in the regulations harvest objectives for specific hunting areas (tag or quota zones) within states where most hunting occurred. However, overharvests persisted, with the 1984 harvest objectives exceeded by 36,000 geese (105 percent) in Wisconsin, Michigan, Tennessee, and Kentucky. Illinois and Indiana, on the other hand, did not exceed their 1984 harvest objectives.

In June 1985 the Service requested that the MVP states develop state harvest-control plans for meeting the Council's recommended harvest objectives. The Service recommended that the plans incorporate such control measures as expanded tag or quota zones and limits on the numbers of hunting permits. Although not every Service recommendation was adopted, the Service was satisfied with the control measures contained in the states' plans.

However, while agreeing with the Council's state harvest recommendations, the Service did not specify them in its hunting regulations. Since regulations have proved successful in limiting MVP harvests in states' quota and tag zones, GAO believes it would have been appropriate for the Service to specify each state's total MVP harvest limit in the regulations to increase each state's accountability for accomplishing program objectives.

Level of Cooperation

Service and Council officials agree that the success of the Canada goose program in the Mississippi flyway depends on federal and state cooperation. While the Service and Council states have cooperated with regard to feeding and refuge restrictions used in an attempt to increase southern migration, they have been less unified over harvest control. Individual states generally agree with the program's objective to increase MVP Canada geese, but have not accepted the increasingly restrictive regulations that limit state harvests. In fact, several states have asked for larger harvest objectives.

The Service plans, in light of state dissatisfaction with the program, to request the Council to reexamine its annual harvest objectives. Officials from seven of the states told GAO that they would be willing to do this if the planned annual goose population growth rate could be reduced below 15 percent. Such a compromise, if adopted, would give the states more time to reach the program's overall population goal and allow them to increase annual harvest objectives, a major obstacle that has affected program cooperation.

Recommendations

GAO recommends that the Fish and Wildlife Service's Director

- tighten MVP hunting regulations to achieve harvest control. This should include specifying states' MVP harvest objectives (see p. 40) and
- work with the Council to reach agreement on a revised growth rate that will be directed at achieving overall population and southern migration goals. (See p. 51.)

Agency Comments

The Department of the Interior and eight states had mixed reactions to GAO's recommendations. While some states agreed with the recommendations, Interior said that tightening hunting regulations could harm cooperation between the Service and the states and that neither recommendation may solve all program problems. GAO believes that the synergistic effect of holding states accountable to specified harvest objectives while modifying the program's growth rate will in fact increase cooperation among the states.

Two southern states disagreed with GAO's second recommendation, objecting to the potential impacts of increased harvests on MVP migration to southern states and MVP harvest shares among the states. While GAO's recommendation could result in increased annual harvest objectives, the actual number of geese harvested each year should decrease.

Such a decrease would result from the Service adopting GAO's recommendation to tighten MVP hunting regulations and holding the states accountable for the specific imposed harvest objectives.

Contents

Executive Summary		2
Chapter 1		8
Introduction	History of MVP Canada Goose Population	9
	Federal Regulations Limit Canada Goose Hunting in the Mississippi Flyway	11
	Objectives, Scope, and Methodology	13
Chapter 2		18
Harvest Objectives Not Being Met, And Southern Distribution Uncertain	Program Intended to Increase MVP Canada Goose Population in the Flyway	18
	Overharvesting of MVP Geese in the Mississippi Flyway	23
	Ineffective Controls Led to Overharvesting	28
	Impact of Overharvesting on Population and Distribution Goals	35
	Conclusions	38
	Recommendation	40
	Agency Comments and Our Response	40
Chapter 3		44
Cooperation Needed to Achieve Program Results	Cooperation in the Mississippi Flyway	44
	Service Needs State Cooperation to Make MVP Program Work	45
	States' Views on the Program	47
	Conclusions	50
	Recommendation	51
	Agency Comments and Our Response	51
Appendix	Appendix I: Advance Comments From the Department of the Interior and Eight State Agencies	54
Tables	Table 2.1: Flyway MVP Canada Goose Harvest Objectives Compared to Estimated Harvests and Population Status, 1979-1984	24
	Table 2.2: Comparison of MVP Canada Goose Harvest Objectives to Estimated Harvests for Six MVP Canada Goose States, 1979-1984	26
	Table 2.3: Assigned MVP Harvest Objectives	31

Figures

Figure 1.1: Canada Geese	9
Figure 1.2: Administrative Waterfowl Flyways	10
Figure 2.1: Distribution Goal in the Mississippi Flyway	19
Figure 2.2: Major Goose Harvest Counties in Wisconsin and Illinois	22
Figure 2.3: Collared Canada Goose	38

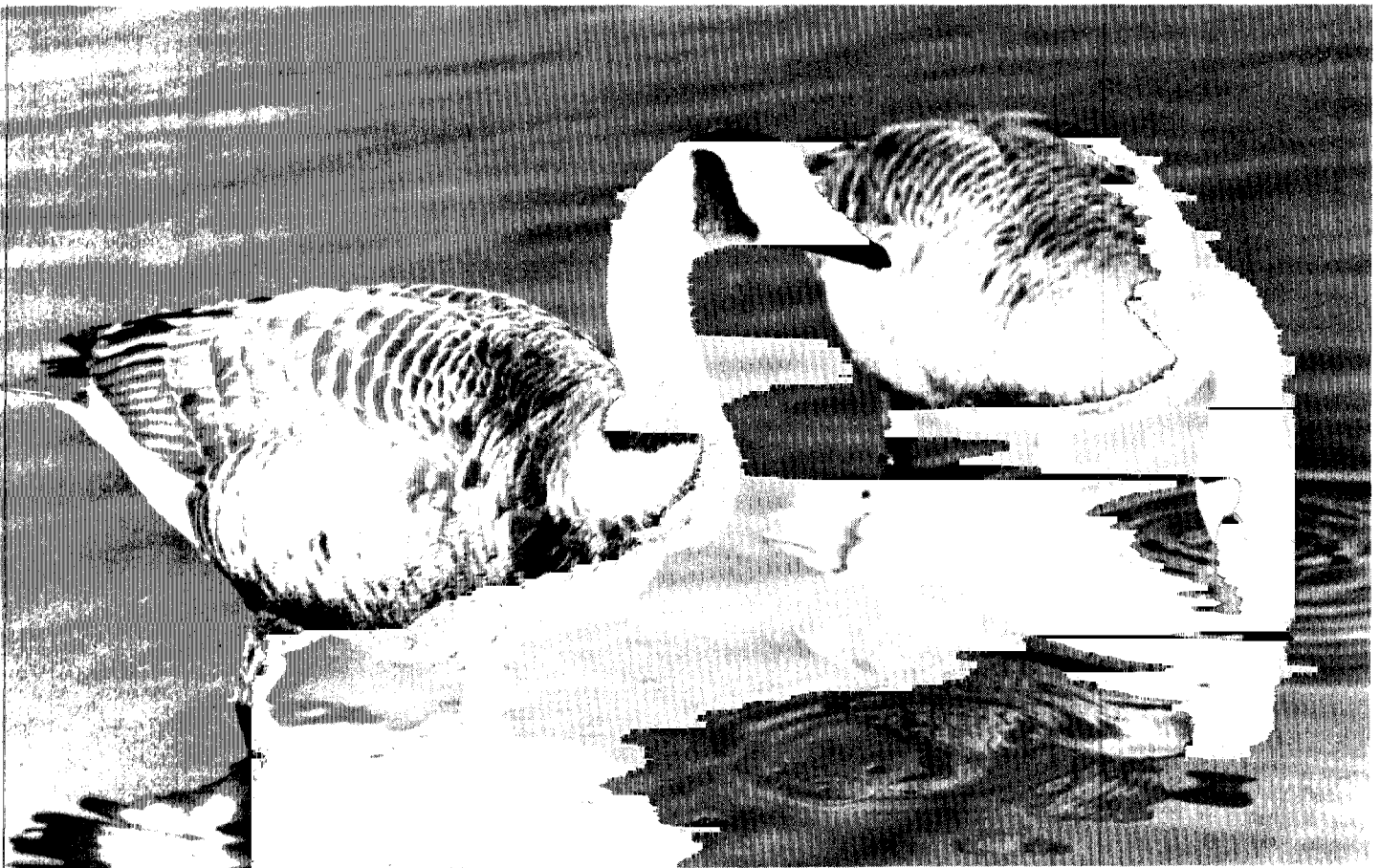
Abbreviations

EPP	Eastern Prairie Population of Canada geese
GAO	General Accounting Office
MVP	Mississippi Valley Population of Canada geese
TVP	Tennessee Valley Population of Canada geese

Introduction

Under the Migratory Bird Treaty Act of 1918, the U.S. Fish and Wildlife Service, Department of the Interior, regulates migratory bird hunting, including millions of waterfowl. These migratory birds, such as ducks and geese, are widely distributed across the two American continents. The birds spend the spring and summer months in breeding grounds as far north as the Arctic and the fall and winter months in areas as far south as northern South America.

Figure 1.1: Canada Geese



Source: Rex Gary Schmidt, U.S. Fish and Wildlife Service.

In 1979 the Service joined with the Mississippi Flyway Council¹ to establish a management program for the Mississippi Valley Population (MVP) of Canada geese² in the Mississippi flyway (see fig. 1.1). A flyway is an administrative unit that generally encompasses the route that geese and other waterfowl species take during migration (see fig. 1.2). The program had two objectives: (1) to double by 1983 the number of MVP geese in the flyway—from 434,000 to 874,000—and (2) to encourage the movement of at least 200,000 geese into the southern states for hunting and recreation. To implement this program, the Service and the Council agreed to restrict hunting to allow an annual 15-percent increase in the population. When it became apparent that the population had declined to about 275,000 geese by 1983—due to a combination of overharvests and poor production—the Service and the Council revised the population objective to 500,000 geese, with 100,000 migrating to the southern states. The revised objectives are to be met by 1988. The Service now believes that the original high population goals were unrealistic.

History of MVP Canada Goose Population

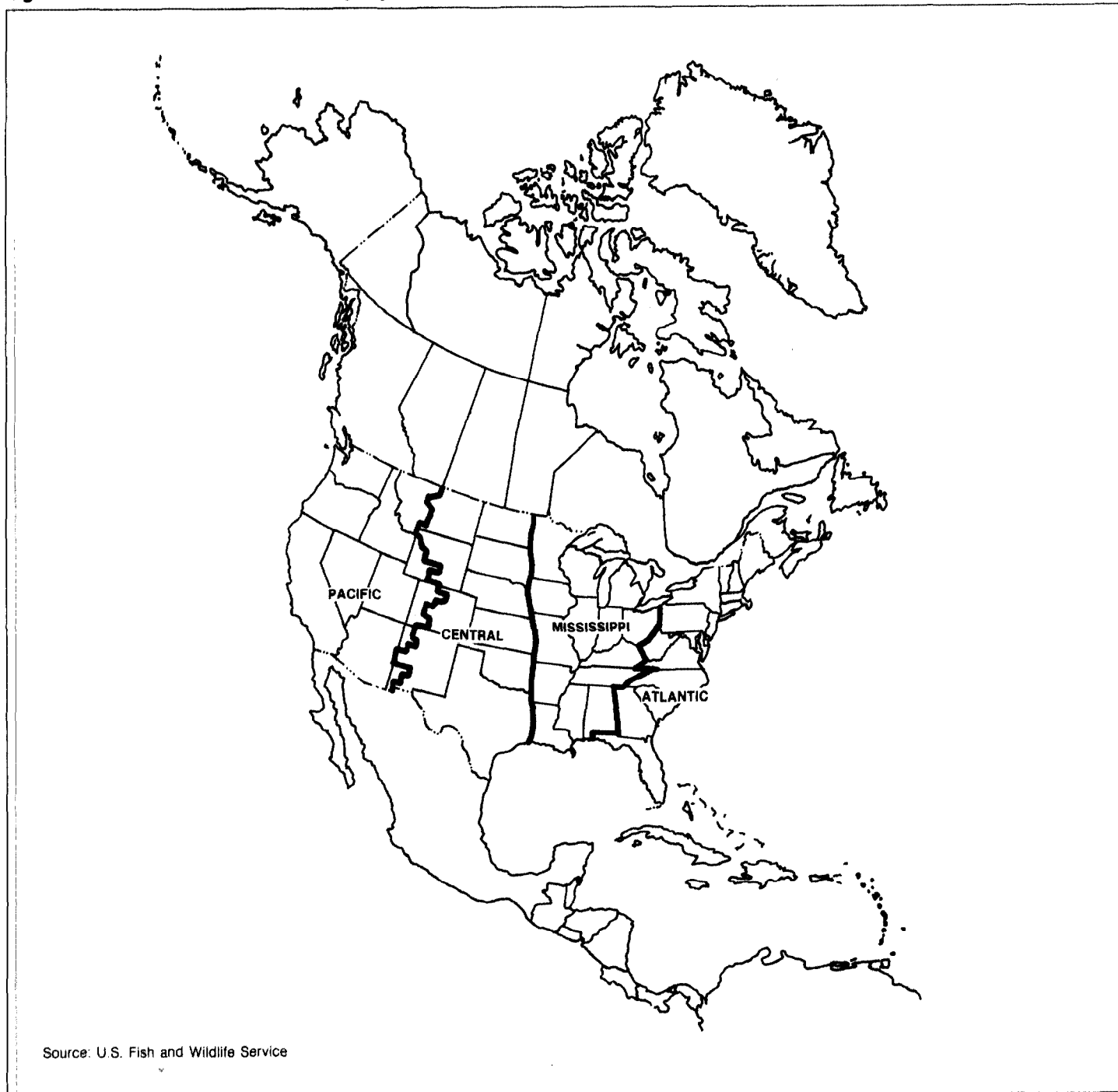
In 1939 Interior's Bureau of Sport Fisheries and Wildlife (the Service's predecessor) counted 175,000 Canada geese in the Mississippi flyway. Although these geese were probably MVP, other populations (Eastern Prairie and Tennessee Valley) may have been intermingled. The bulk of the population wintered in southern Illinois, southwestern Kentucky, and northwestern Tennessee. Although Canada geese are said to have been common before the 20th century in Arkansas, Louisiana, Mississippi, and lower Tennessee, by this time they were relatively scarce.

During the early 1940's, hunting reduced the population, and in 1944 and 1945, the Secretary of the Interior closed the hunting season within a few days of opening in southern Illinois because of heavy harvest rates. In 1946, with the population down to 53,000, the Secretary closed the entire Mississippi flyway to Canada goose hunting in order to save them from possible extinction.

¹In 1952 state wildlife management agencies organized into four administrative units known as flyway councils (Atlantic, Mississippi, Central, and Pacific) to foster close cooperation in managing migratory waterfowl. The Mississippi Flyway Council comprises Alabama, Arkansas, Illinois, Indiana, Iowa, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Ohio, Tennessee, and Wisconsin. Alabama, Iowa, Minnesota, and Ohio are not part of the MVP program.

²Canada geese are social birds with strong family ties and homing instincts. In North America, 12 discrete populations of Canada geese (totaling 3 million) congregate on different breeding, migrating, and wintering grounds. Most populations are stable or growing, but their migration has changed in this century, so they are more scarce in southern states.

Figure 1.2: Administrative Waterfowl Flyways



Source: U.S. Fish and Wildlife Service

After 1946 the Bureau and state wildlife agencies in Illinois and Wisconsin—the two states where most MVP geese concentrated—established more refuges and restricted hunting so that the population could increase. By 1953 the population tripled to 159,000. In 1957 Wisconsin and Illinois adopted hunting control measures for areas near the refuges, further increasing the population to between 200,000 and 300,000 in the 1950's and 1960's. Eventually, the increased population caused problems in the northern states—where they were damaging crops—and spurred efforts to spread the population further south—which would increase hunting opportunities. A major effort to move geese by hazing them out of the Horicon National Wildlife Refuge (Wisconsin) area was attempted in 1976. According to the Service, the effort failed to achieve any lasting change in distribution and probably increased hunting losses in Wisconsin. This situation led to the creation of the 1979 program.

Federal Regulations Limit Canada Goose Hunting in the Mississippi Flyway

The Service has broad authority under the Migratory Bird Treaty Act of 1918, 16 U.S.C. Section 703 to 711, which implements four international treaties to protect waterfowl. Section 704 authorizes and directs the Secretary of the Interior periodically,

“... having due regard to the zones of temperature and to the distribution, abundance, economic value, breeding habits and times and lines of migratory flight of such birds, to determine when, to what extent, if at all, and by what means, it is compatible . . . to allow hunting, taking, [and] killing, . . . of any such bird, . . . and to adopt suitable regulations permitting . . . the same, in accordance with such determinations, which regulations shall become effective . . .”

Essentially, any hunting that is not provided for by federal regulation is unlawful. The Service's annual hunting regulations are intended to limit the number of ducks and geese taken by hunters in order to assure the survival of waterfowl and the continued recreational, hunting, economic, and other benefits associated with them.

The Service's mission is to conserve, protect, and enhance fish and wildlife and their habitats, including its goal to perpetuate and improve waterfowl populations for the benefit of people. The Service's hunting regulations can be guided by specific waterfowl management programs, as is the case for MVP Canada geese in the Mississippi flyway. As part of its mission, the Service adopted objectives, including setting population

objectives, to achieve management goals for certain waterfowl populations; achieving beneficial waterfowl migration and distribution patterns and providing the opportunity to harvest waterfowl by devising hunting regulations consistent with population and harvest objectives.

Although the Service has ultimate responsibility for protecting migratory birds, the states also play a major role in waterfowl management. State efforts help the Service carry out its mission, such as law enforcement, and cooperation allows the states to represent their interests in hunting migratory waterfowl. The Service considers the views and advice of the four flyway councils in determining the annual limits on waterfowl hunting, such as MVP geese in the Mississippi flyway. Each year, in developing the hunting regulations for MVP geese, the Mississippi Flyway Council and the Service review current data on the goose population and previous harvests. The flyway states participating in the program are to reach agreement on specific hunting regulations that will accomplish the program's growth and distribution goals for the coming season. Specifically, they will identify harvest objectives (the maximum numbers of MVP geese that all hunters can shoot) for the flyway as a whole as well as individual states. The Council then formally recommends these objectives and specific harvest-control measures to the Service for its consideration in developing proposed federal hunting regulations each year.

In the absence of Council recommendations, the Service proposes regulations that, in its judgment, will fulfill the program's goals. States respond to the Service's proposed regulations, and the Service then issues final hunting regulations. These regulations generally identify a harvest objective for certain states or areas and other limits, such as season lengths, bag limits, and shooting hours.

Although states have the flexibility to devise their own procedures for administering the hunting season, they are not allowed to implement hunting procedures or regulations more liberal than federal regulations, even if the federal regulations are based on a voluntary cooperative flyway council program affecting a nonthreatened waterfowl population. Section 708 provides that states can make and enforce laws that are not inconsistent with federal law or that give further protection to migratory birds. The act gives the Service the authority to require states to devise effective procedures to ensure consistent compliance with the federal regulations.

Objectives, Scope, and Methodology

In January 1985 Senators Jim Sasser and Albert Gore, Jr., and Representative Ed Jones of Tennessee requested that we review the MVP program. The requesters raised the concern that hunters in Tennessee and the other southern states (Arkansas, Kentucky, Mississippi, and Louisiana) were being deprived of an equitable share of Canada geese relative to northern states. They also said that the Service, by allowing large harvests of birds in the north, has altered the natural instinct of the geese to fly south.

After a preliminary review of the program's status and interviews with state and federal officials, we found that the "equitable harvests" issue between northern and southern states was subsumed by two conditions with broad impact on the program. These were the program's 5-year record of substantial overharvests and the associated 37-percent decline in the MVP Canada goose flock. These conditions were in direct conflict with the program's objectives and were at the root of much controversy between the state agencies and the Service. Furthermore, we found no immediate or obvious solution to (and many risks associated with) the issue of equitably dividing allowable MVP goose harvests between northern and southern states. Thus, in subsequent discussion with the requesters' offices, the scope of our review was revised to examine the program's progress and the level of cooperation between the Service and the Council in carrying out the program.

To respond to the request, we examined the Service's legislation, regulations, and various documents and statistics regarding federal migratory bird and Canada goose protection and management. We also reviewed the Service's legal authority to take action to require states to limit harvests of Canada geese. Our review was not intended to determine the number of Canada geese that the Service must protect for long-term stability of this resource.

Persons Interviewed

In conducting our review, we interviewed 10 state administrators for the wildlife management agency, office, or department in the respective states. The administrators are the representatives to the Council's special MVP committee. For some states, we also interviewed the wildlife biologist or waterfowl technician designated as the representative to the Council's Technical Section. For each interview, we wanted to obtain views, opinions, and information on how the states cooperate with each other and the Service through the flyway council on Canada goose management; to understand the states' perspectives on the program and procedures for complying with the harvest objectives and hunting

regulations; and to identify, if appropriate, actions the Service could take to improve the program.

Because Wisconsin and Illinois have harvested about 70 percent of the flyway's MVP Canada goose harvest since 1979, we analyzed their harvest control procedures and results to determine how effectively their procedures have kept harvests within program and federal limits.

We attended the Council's March 1985 meeting in Washington, D.C., to observe its process for making program decisions. Information obtained from the participating states was supplemented by reviewing plans, correspondence, Council minutes and other Council documents, and documents generated between the Council and the Service.

At the Fish and Wildlife Service, we interviewed officials in the Office of Migratory Bird Management in Washington, D.C., and its Surveys branch at the Patuxent Wildlife Research Center in Laurel, Maryland. This office coordinates and conducts waterfowl population and harvest surveys; develops annual hunting regulations; and provides overall guidance for national waterfowl management activities. It also maintains liaison with the flyway councils by assigning a staff member as a flyway representative. We interviewed and obtained information from the Service's Mississippi flyway representative, who has worked closely with the Council in developing the MVP program and providing advice on MVP management.

We also interviewed the regional director and migratory bird coordinator in the Service's Region 3 (Minneapolis, Minn.) and the migratory bird coordinator and waterfowl biologist in Region 4 (Atlanta, Ga.). These two regional offices share jurisdiction in the Mississippi flyway and participate in council MVP management meetings.

We interviewed the Service's Cooperative Wildlife Research Unit Leader at the University of Wisconsin (Madison), who has conducted long-term research on MVP Canada geese and is a recognized expert on their biology, population, and migratory trends. His research is financially supported by the Council and the Service, who consider his findings and analysis in managing the program.

Data Analyzed

For our review, we used the population and harvest estimates prepared by the Service and the Council. Service and Council representatives consider the population data sufficiently accurate for formulating harvest

objectives and making program decisions. On occasion, however, state representatives questioned the quality of the data for decisionmaking. Their concerns are presented in the report where appropriate. The agencies' population estimates vary each year due in part to unpredictable weather. The primary population measure is based on a coordinated census in each state in December when state and federal biologists count the geese on the ground. Another measure is based on the rate of goose reproduction during the summer in Canada. Because the accuracy of the population estimates, particularly the December count, is uneven some years, the Service and the Council consider various factors in order to adjust the population estimate, rather than always relying on the mid-winter count's raw data. We have noted in the report where we have used adjusted data.

Each year, the Service develops harvest estimates by surveying a stratified random sample of hunters, who fill out a post-season questionnaire reporting how many waterfowl they shot (ducks, Canada geese, etc.) by state, county, and month. The questionnaire-based estimates are refined by cross-referencing goose tails sent by a sample of hunters from every state. The sample yields, on average, a sampling error at the state level of about + or - 15 percent (95-percent confidence level) and + or - 5 percent (95-percent confidence level) at the flyway level. The Service considers these accuracy levels to be sufficient for most management purposes related to a species harvested in large numbers over wide areas, such as the Canada goose in the Mississippi flyway.

In reporting harvest data, we applied the Service's Cooperative Wildlife Unit Leader's harvest adjustments to the federal data we used. The Unit Leader's data are generally accepted by the Council and the Service for refining the harvest data for each state. His research shows that the proportion of MVP geese in Wisconsin's and Illinois' total Canada goose harvests are about 91 and 87 percent, respectively, and other goose populations make up the remainder. Similarly, his research shows that the proportion of MVP geese in Kentucky's, Tennessee's, and Michigan's total Canada goose harvest is 76, 55, and 34 percent, respectively. However, due to significant changes since 1981 in hunting seasons in these three states to protect MVP geese, the Service's flyway representative said that these relative shares may have changed but to what extent is not yet clear.

In commenting on our draft report, Tennessee and Michigan objected to our reporting of their estimated MVP Canada goose harvests, indicating disagreement with the results based on the Cooperative Wildlife

Research Unit Leader's research. We have added qualifications to tables 2.1 and 2.2 where these estimates are found. (See pp. 24 and 26.) However, these estimates are the best information now available. According to the Unit Leader, further research (goose leg banding, and band recovery and analysis) may alter these proportions somewhat, but he does not expect significant changes. Further, he said that it would be premature for the Service to make any hunting regulatory changes in response to a state's disagreement with the MVP harvest estimates because no state has provided alternative data justifying such a change. Service officials said that more research by the Unit Leader will determine what changes, if any, have occurred in Kentucky, Tennessee, and Michigan. We did not independently evaluate the validity of the population or harvest estimates.

We made our review in accordance with generally accepted government auditing standards. Our work was performed between January and July 1985, with some supplemental information collected and analyzed through September 1985. We requested and received official comments on the draft report from the Department of the Interior and the administrative agencies in Arkansas, Illinois, Indiana, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Tennessee, and Wisconsin. Their comments and our responses have been incorporated, where appropriate, in the report. We did not receive comments from Louisiana and Mississippi.

