WOODCOCK MANAGEMENT SYSTEM

AND DATA BASE

FEBRUARY 1988

MAINE DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

WILDLIFE RESOURCE ASSESSMENT SECTION

GAME BIRD PROJECT
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PART I. WOODCOCK MANAGEMENT SYSTEM</strong></td>
<td>3</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>4</td>
</tr>
<tr>
<td>REGULATORY AUTHORITY</td>
<td>5</td>
</tr>
<tr>
<td>MANAGEMENT GOALS AND OBJECTIVES</td>
<td>6</td>
</tr>
<tr>
<td>MANAGEMENT GOALS</td>
<td>6</td>
</tr>
<tr>
<td>MANAGEMENT OBJECTIVES</td>
<td>6</td>
</tr>
<tr>
<td>ASSUMPTIONS</td>
<td>6</td>
</tr>
<tr>
<td>MANAGEMENT DECISION PROCESS</td>
<td>8</td>
</tr>
<tr>
<td>DECISION MAKING</td>
<td>8</td>
</tr>
<tr>
<td>CRITERIA FOR DECISION MAKING</td>
<td>8</td>
</tr>
<tr>
<td>MANAGEMENT OPTIONS</td>
<td>14</td>
</tr>
<tr>
<td>MANAGEMENT SYSTEM OUTPUTS</td>
<td>15</td>
</tr>
<tr>
<td>MANAGEMENT RECOMMENDATIONS</td>
<td>15</td>
</tr>
<tr>
<td>CHRONOLOGY OF WOODCOCK MANAGEMENT ACTIVITIES</td>
<td>16</td>
</tr>
<tr>
<td><strong>PART II. WOODCOCK MANAGEMENT DATABASE</strong></td>
<td>18</td>
</tr>
<tr>
<td>WOODCOCK DATA COLLECTION SUMMARY</td>
<td>19</td>
</tr>
<tr>
<td>WOODCOCK HARVEST DATA</td>
<td>19</td>
</tr>
<tr>
<td>WOODCOCK POPULATION SURVEY</td>
<td>20</td>
</tr>
<tr>
<td>HABITAT EVALUATION</td>
<td>20</td>
</tr>
<tr>
<td>WOODCOCK MANAGEMENT SYSTEM REVIEW</td>
<td>21</td>
</tr>
<tr>
<td>SYSTEM INPUTS</td>
<td>21</td>
</tr>
<tr>
<td>LIST OF APPENDICES</td>
<td>22</td>
</tr>
</tbody>
</table>
PART I. - WOODCOCK MANAGEMENT SYSTEM
INTRODUCTION

The primary purpose of this document is to describe the system which is to be used by the Maine Department of Inland Fisheries and Wildlife (MDIFW) biologists to make woodcock management recommendations. Included are the process to translate data into management decisions (Part I) and techniques to estimate various woodcock population parameters (Part II). Goals of the current management system were outlined in the 1985 woodcock assessment.

This document does not address social, political, or economic questions related to woodcock management. Such questions should be raised in the revision of the woodcock assessment.
REGULATORY AUTHORITY

The U. S. Fish and Wildlife Service’s (FWS) responsibility for the conservation and management of woodcock in the United States is based on the Convention for the Protection of Migratory Birds between the U.S. and Great Britain (for Canada), and its implementing legislation, the Migratory Bird Treaty Act of 1918 (Appendix I). While fulfilling this mandate, the FWS works closely with state conservation agencies, private organizations and individuals with interests in woodcock. The MDIFW determine Maine’s woodcock regulations within frameworks established by the FWS. In general, MDIFW sets hunting season opening and closing dates and bag limits within outside dates and bag limits established by federal frameworks. Maine migratory bird laws and rules (which include woodcock) are contained in Chapters 701-721 of Title 12, Maine Revised Statutes and Amendments, Part 10, Inland Fisheries and Wildlife (Appendix II).
MANAGEMENT GOALS AND OBJECTIVES

A goal and objectives for woodcock management were established in 1985 and 1986 to guide woodcock management in Maine through 1990. The goal and objectives were defined through recommendations made to MDIFW by a game bird working group comprised of several representatives of the public.

Management Goal

Increase woodcock population levels.

Management Objectives

Abundance Objective

Increase spring woodcock numbers in all Wildlife Management Units (WMU’s) by 25% by 1990.

Harvest objective

Maintain harvest and hunter numbers at or near 1985 levels.

Assumptions

Woodcock management goals and objectives are based on the following assumptions from the 1985 woodcock assessment:

- The 1985 woodcock population was below carrying capacity;
• Data averaged over the three-year period of 1983-85 will serve as the base year for singing-ground survey comparisons in Criteria A.

• The singing-ground survey will serve as the primary data input criteria of the management goal.
MANAGEMENT DECISION PROCESS

Current management decisions relate primarily to establishing woodcock hunting season dates, lengths, and bag limits within federal frameworks while maintaining harvests and hunter numbers at or near 1985 levels.

The following sections describe the decision process, the input criteria to the decision process, and the management options which may result.

Decision Making

Decision making is a series of yes and no answers to questions related to woodcock population status (Figure 1). Based on input criteria, the responses to the questions are determined and the flow chart guides the decision-maker to the appropriate management option.

Criteria for Decision Making

Is the woodcock population on target, stable, increasing, or decreasing in all WMU'S? These questions are currently answered on the basis of the following criteria. Rules or thumb are also given for evaluating data inputs.
Two major assumptions of the decision making process are that counts of singing male woodcock reflect woodcock population trends and that changes in harvest rates reflect changes in populations.

Criteria A

This input answers the question "Is the population on target (from 1983-85 levels)?" based on data from the singing-ground survey (Appendix III). If the running three-year average (starting with 1986 data) in the breeding index is 25% greater than the average 1983-85 breeding index (2.4), then the population is considered to be on target. The direction in which the 3-year average index varies from the 1983-85 index determines whether the population is above or below the target population.

Criteria B

Is the population stable, increasing or decreasing? Several indicators are currently utilized to detect changes in woodcock numbers and harvests. Again, the singing-ground survey data serve as a key component used to answer these questions. Other supportive data are collected and used in the decision making process. For example, the wing-collection survey is precise enough to detect differences in harvest/hunter. However, changes in season frameworks can make comparisons misleading. Still other indicators in Criteria B are indirect measures and/or have such a small sample size or high variance that none give a reliable picture by themselves. Statistically significant differences may be unlikely even if a real change occurs. For this reason, more than one criteria are considered.
The input in Criteria B includes four indices directly and one supportive index (Figure 2). These are the singing-ground survey (Appendix III), the wing-collection survey (Appendix IV), the FWS's Annual Questionnaire Survey of U.S. Waterfowl Hunters (Appendix V), and singing-ground survey data collected each spring at Moosehorn National Wildlife Refuge (Appendix VI). A three-year average of these indicators is used to determine if populations are stable or changing. Three out of four of these indicators (surveys) must agree to decide that woodcock populations are increasing or decreasing.

As was the case in Criteria A, the singing-ground survey data is used in the determination of population change. However, in this case, a decision can be made if the running three-year average is at least ± 10% of the previous three-year average (not the base year, as was the case in Criteria A).

Annual data from the wing-collection survey include three indices; a recruitment index and indices of daily and seasonal hunting success (Appendix IV). It is assumed that changes in these indices reflect changes in woodcock populations. These data are useful when there are no significant changes in woodcock hunting regulations between years. A three-year average change (> 10%) in the recruitment index suggests woodcock populations are increasing or decreasing. A three-year change (> 10%) in the daily hunting success and seasonal hunting success suggests woodcock populations are increasing or decreasing. All three of these indicators must agree to decide that woodcock populations are increasing or decreasing based on wing-collection survey results.
Figure 2. Data inputs to Criteria B.

- FWS SINGING-GROUND SURVEY
- FWS WING-COLLECTION SURVEY
- WATERFOWL HUNTER'S QUESTIONNAIRE
- SINGING-GROUND SURVEY (MNRF)
- WOODCOCK HUNTER SURVEY
- CRITERIA B
Estimates of harvest and hunter activity for migratory birds other than waterfowl are obtained in the USFWS's Annual Questionnaire Survey of U.S. Waterfowl Hunters (Appendix V). The compilers of this information caution users of problems associated with sampling one group (waterfowl hunters) to give estimates of the activities of another group (woodcock hunters). However, a three-year average change (> 10%) in the harvest/hunter estimate can be used as an indicator of woodcock population change.

Singing-ground surveys and other data, collected each spring at the Moosehorn National Wildlife Refuge, provide additional information on breeding populations and nesting conditions in eastern Maine (Appendix VI). These data will be treated in a similar fashion as the FWS singing-ground data mentioned previously in this section.

Supporting Criteria

Maine woodcock hunters (cooperators) annually provide information on woodcock flush rates and harvests per man-hour (Appendix VII). A three-year average change in flush rate/man-hour (> 10%) is indicative of a woodcock population change. However, changes in hunter effort, woodcock migrations, observability due to foliage conditions, and weather need to be considered. Sample sizez are too small to consider statistically significant differences between years. This survey can best be used to acquire personal opinions from hunters on trends in woodcock numbers and hunting conditions.
Management Options

Management Option I

Maximize bag limits and season length within federal frameworks. Select opening day compatible with woodcock and other game bird goals and objectives established for Maine.

Make recommendation to the FWS that federal frameworks be liberalized to allow greater use of the woodcock resource in Maine when appropriate.

Management Option II

Make recommendations to the FWS that more restrictive frameworks be established for Eastern Region woodcock populations.

Conservation and management of woodcock habitat is the key to achieving population goals. Therefore, it is necessary to develop an effective extension program that addresses the woodcock population issue. Program should include, but not be limited to, cooperation with extension specialists, natural resource information and education departments, and industrial forest landowners. A top priority would be to assist commercial timberland companies incorporate woodcock habitat management in their timber management activities.
MANAGEMENT SYSTEM OUTPUTS

Management Recommendations

Recommendations from the management system currently can result in either of the following actions:

- Maximize hunting opportunity within federal frameworks; or
- Restrict hunting opportunity within federal frameworks by selecting one or more of the following options;
  - Delay opening season date; and/or
  - Reduce number of hunting days; and/or
  - Reduce daily bag limit;

Under current regulatory authority and federal frameworks, we do not have the option to: select an opening day prior to 1 October, allow more than 45 hunting days, or increase the daily bag limit to more than 3 birds. Any liberalizations in woodcock hunting seasons will require prior liberalization of the hunting frameworks by the FWS. This is not likely to happen until the population goal for woodcock in the Eastern Region is attained. The FWS does solicit comments on federal frameworks from the MDIFW and the public annually.
CHRONOLOGY OF WOODCOCK MANAGEMENT ACTIVITIES

The chronology of events in the woodcock management system begin with exchanges of information between the FWS (via the Migratory Bird Regulations Committee, Appendix VIII), the state agencies (e.g. MDIFW) and the public concerning woodcock regulations. Each year, this information is channeled through an extensive but well-documented Federal and State administrative process. For a complete review of the annual regulatory process, see SEIS 88-Final Supplemental Environmental Impact Statement: Issurance of Annual Regulations Permitting the Sport Hunting of Migratory Birds. (Appendix IX).

Next, the FWS administers the wing-collection survey and the singing-ground survey to assess the status of rangewide woodcock populations. In Maine, the singing-ground survey is conducted each spring by primarily MDIFW and FWS personnel. Concurrent with the breeding season, the woodcock study leader provides the woodcock research staff at the Moosehorn National Wildlife Refuge (MNWR) with technical assistance to assess breeding and nesting conditions at the refuge.

The next step in the woodcock management system requires publication of survey results in the Woodcock Administrative Report (Appendix X). The Wildlife Division staff review and discuss results of these surveys and conditions of the recently completed breeding season.

In mid-summer, the FWS publishes the proposed woodcock hunting season frameworks in the Federal Register. Shortly thereafter, the MDIFW conducts a public hearing, when necessary, to discuss the status of woodcock and the proposed season
frameworks. Hearings are generally held only when changes to the previous hunting season are proposed or when changes will result in opening the hunting season prior to October 1. During years when this public hearing is conducted, the dates and bag limit for the upcoming woodcock season are tentatively defined. The MDIFW then sends its season recommendations to the FWS and publishes the proposed woodcock season in the appropriate media in Maine (Appendix XI). The FWS, once it has received input from each state and interested individuals, selects the final season frameworks and bag limits and publishes them in the Federal Register.

By early fall, a summary of Federal hunting regulations are published (Appendix XII). In early December, the woodcock study leader contacts a number of woodcock hunters for their input regarding hunting conditions during the recently completed woodcock season. Information received from these hunters is used in a report filed annually with the Webless Migratory Game Bird Committee, a subcommittee of the Atlantic Waterfowl Council Technical Section.
PART II. - WOODCOCK MANAGEMENT DATA BASE
WOODCOCK DATA COLLECTION SUMMARY

Woodcock Harvest Data

Wing-collection Survey

Participants in this survey are selected in a nonrandom manner and are asked to mail one wing from each woodcock they shoot to the FWS. During the winter, trained individuals determine the sex and age of harvested woodcock by feather sizes and patterns of wings. These harvest data are used to determine reproductive success of woodcock during the previous breeding season. In addition, this survey also provides data on changes in size and distribution of the harvest (Appendix IV).

Annual Questionnaire Survey of Waterfowl Hunters

Trends in woodcock harvests and hunter numbers have been monitored annually by the FWS and, until 1984, by the MDIFW. Estimates of harvest and hunter activity for migratory birds other than waterfowl are obtained in the FWS's Annual Questionnaire Survey of U.S. Waterfowl Hunters (Appendix V). Currently, this survey is the sole source of annual harvest data for Maine.

Woodcock Cooperators Survey

Data on hunting conditions and woodcock numbers are recorded on a daily basis by participating hunters. Data are summarized and entered into a database in Bangor (Appendix VII).
Woodcock Population Survey

*Singing-ground survey*

The singing-ground survey is conducted each spring throughout Maine, and data are sent to FWS for analysis. Results are published annually in the Woodcock Administrative Report (Appendix X).

Habitat Evaluation

*Five-year Evaluation*

Habitat conditions are reevaluated every 5 years as part of the planning update. US Forest Service forest inventory data and MDIFW wetland inventory data are the sources of information.

Habitat Demonstration Areas

In order to provide landowners with information on habitat manipulation, a number of demonstration areas have been established around the State. The Moosehorn National Wildlife Refuge in Calais is the most noteworthy demonstration area in the northeast. A *Landowner’s Guide to Woodcock Management in the Northeast* highlights the key points of the research conducted on habitat conversion for woodcock (Appendix XII). A number of State-owned Wildlife Management Areas have been created as well to demonstrate habitat management for game birds in different areas of the State.
WOODCOCK MANAGEMENT SYSTEM REVIEW

A list of action items has been developed identifying components of the current management system which need to be addressed.

System Inputs

- Develop an adequate survey to estimate annual woodcock hunter effort and harvest.
- Develop a system to evaluate the quality and quantity of woodcock habitat in Maine.
- Develop an extension program to provide both small and large landowners with information on woodcock habitat requirements.
- Investigate how industrial timberland management (i.e. clearcutting and biomass harvesting) relates to woodcock population densities and recruitment.
- Investigate techniques used to analyze trend data.
LIST OF APPENDICES

I. Migratory Bird Treaty Act
II. Maine migratory bird laws
III. Woodcock singing-ground survey
IV. Wing-collection surveys
V. FWS's Annual Questionnaire Survey of U.S. Waterfowl Hunters
VI. Moosehorn National Wildlife Refuge's Singing-ground Survey Results
VII. Maine woodcock Cooperators Survey
VIII. Migratory Bird Regulations Committee
IX. Federal and state administrative process
X. Woodcock Administrative Report
XI. Copy of proposed woodcock season
XII. Summary of Federal Hunting Regulations
XIII. Landowner's Guide to Woodcock Management in the Northeast
APPENDIX I.
Convention for the Protection of Migratory Birds

Signed at Washington August 16, 1916;
Ratification advised by the Senate August 29, 1916;
Ratified by the President September 1, 1916;
Ratified by Great Britain October 20, 1916;
Ratifications exchanged at Washington December 7, 1916;
Proclaimed December 8, 1916.

1. Migratory birds included in terms of convention.
2. Close seasons.
3. Close season on specified migratory game birds for 10 years.
4. Special protection for wood and elder ducks.
5. Taking of nests or eggs prohibited.
6. Shipment or export of migratory birds or their eggs.
7. Permits to kill migratory birds in particular communities.
9. Ratification; duration.

Whereas, Many species of birds in the course of their annual migrations traverse certain parts of the United States and the Dominion of Canada; and

Whereas, Many of these species are of great value as a source of food or in destroying insects which are injurious to forests and forage plants on the public domain, as well as to agricultural crops, in both the United States and Canada, but are nevertheless in danger of extermination through lack of adequate protection during the nesting season or while on their way to and from their breeding grounds;

The United States of America and His Majesty the King of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas, Emperor of India, being desirous of saving from indiscriminate slaughter and of insuring the preservation of such migratory birds as are either useful to man or are harmless, have resolved to adopt some uniform system of protection which shall effectively accomplish such objects and to the end of concluding a convention for this purpose have appointed as their respective Plenipotentiaries:

The President of the United States of America, Robert Lansing, Secretary of State of the United States; and
His Britannic Majesty, the Right Honorable Sir Cecil Arthur Spring Rice, G. C. V. O., K. C. M. G., etc., His Majesty's Ambassador Extraordinary and Plenipotentiary at Washington;

Who, after having communicated to each other their respective full powers which were found to be in due and proper form, have agreed to and adopted the following articles:

Article I.

The High Contracting Powers declare that the migratory birds included in the terms of this Convention shall be as follows:
1. Migratory Game Birds:
   (a) Anatidae or waterfowl, including brant, wild ducks, geese, and swans.
   (b) Gruidae or cranes, including little brown, sandhill, and whooping cranes.
(c) Rallidae or rails, including coots, gallinules and sora and other rails.
(d) Limicolae or shorebirds, including avocets, curlew, dowitchers, godwits, knots, oyster catchers, phalaropes, plovers, sandpipers, snipe, stilts, surf birds, turnstones, willet woodcock and yellowlegs.
(e) Columbidae or pigeons including doves and wild pigeons.

2. Migratory Insectivorous Birds:
   Bobolinks, catbirds, chincadees, cuckoos, flickers, flycatchers, grosbeaks, humming birds, kinglets, martins, meadowlarks, night-hawks or bull bats, nut-hatches, orioles, robins, shrikes, swallows, swifts, tanagers, tityreas, thrushes, vireos, warblers, wax-wings, whippoorwills, woodpeckers and wrens, and all other perching birds which feed entirely or chiefly on insects.

3. Other Migratory Nongame Birds:
  Auks, auklets, bitterns, fulmars, gannets, grebes, guillemots, gulls, herons, jaegers, loons, murrels, petrels, puffins, shearwaters, and terns.

**Article II.**

The High Contracting Powers agree that, as an effective means of preserving migratory birds there shall be established the following close seasons during which no hunting shall be done except for scientific or propagating purposes under permits issued by proper authorities.

1. The close season on migratory game birds shall be between March 10 and September 1, except that the close season on the Limicolae or shorebirds in the Maritime Provinces of Canada and in those States of the United States bordering on the Atlantic Ocean which are situated wholly or in part north of Chesapeake Bay shall be between February 1 and August 15, and that Indians may take at any time scoters for food but not for sale. The season for hunting shall be further restricted to such period not exceeding three and one-half months as the High Contracting Powers may severally deem appropriate and define by law or regulation.

2. The close season on migratory insectivorous birds shall continue throughout the year.

3. The close season on other migratory nongame birds shall continue throughout the year, except that Eskimos and Indians may take at any season auks, auklets, guillemots, murrels and puffins, and their eggs for food and their skins for clothing, but the birds and eggs so taken shall not be sold or offered for sale.

**Article III.**

The High Contracting Powers agree that during the period of ten years next following the going into effect of this Convention, there shall be a continuous close season on the following migratory game birds, to wit:

Bird-tailed pigeons, little brown, sandhill and whooping cranes,
MIGRATORY BIRD TREATY ACT

CH. 126.—An Act To give effect to the convention between the United States and Great Britain for the protection of migratory birds concluded at Washington, August sixteenth, nineteen hundred and sixteen, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act shall be known by the short title of the “Migratory Bird Treaty Act.”

Sec. 1. That unless and except as permitted by regulations made as hereinafter provided, it is unlawful to hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time or in any manner, any migratory bird, included in the terms of the convention between the United States and Great Britain for the protection of migratory birds concluded August sixteenth, nineteen hundred and sixteen, or any part, nest, or egg of any such bird.

Sec. 2. That subject to the provisions and in order to carry out the purposes of the convention, the Secretary of Agriculture is authorized and directed, from time to time, 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 with the terms of the convention to allow hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export of any such bird, or any part, nest, or egg thereof, and to adopt suitable regulations permitting and governing the same, in accordance with such determinations, which regulations shall become effective when approved by the President.

Sec. 3. It shall be unlawful to ship, transport, or carry by any means whatever, from one State, Territory, or District to or through another State, Territory, or District, or to or through a foreign country, any bird, or any part, nest, or egg thereof, captured, killed, taken, shipped, transported, or carried at any time contrary to the laws of the State, Territory, or District in which it was captured, killed, or taken, or from which it was shipped, transported, or carried.

Sec. 4. That any employee of the Department of Agriculture authorized by the Secretary of Agriculture to enforce the provisions of this Act shall have power, without warrant, to arrest any person committing a violation of this Act in his presence or view and to take such person immediately for examination or trial before an officer or court of competent jurisdiction; shall have power to execute any warrant or other process issued by an officer or court of competent jurisdiction for the enforcement of the provisions of this Act; and shall have authority, with a search warrant, to search any place. The several judges of the courts established under the laws of the United States, and United States commissioners may, within their respective jurisdictions, upon proper oath or affirmation showing probable cause, issue warrants in all such cases. All birds, or parts, nests, or eggs thereof, captured, killed, taken, shipped, transported, carried, or possessed contrary to the provisions of this Act or of any regulations made pursuant thereto shall, when found, be seized by any such employee, or by any marshal or deputy marshal, and, upon conviction of the offender or upon judgment of a court of the United States that the same were captured, killed, taken, shipped, transported, carried, or possessed contrary to the provisions of this Act or of any regulation made pursuant thereto, shall be forfeited to the United States and disposed of as directed by the court having jurisdiction.
APPENDIX II.
4.02 Migratory Birds

A. Hunting and Possession

1. Scope and General Prohibition

For the purpose of this section, migratory game birds include and are limited to the following species: rails, gallinules, woodcock, snipe, geese, brant, wild ducks, and sea ducks (eider, scoter, and old squaw). Except as expressly provided in these regulations or by statute or other regulation, it shall be unlawful to hunt, capture, kill, take, possess, transport, buy, or sell any migratory game bird or part thereof.

2. Hunting Methods

It shall be lawful to hunt migratory game birds by the aid of dogs, artificial decoys, manually or mouth-operated bird calls, with longbow and arrow, or by the practice of falconry, or with shotgun (not larger than No. 10 gauge and incapable of holding more than three shells) fired from the shoulder. Every other method is unlawful.

It shall be lawful to hunt migratory game birds from floating craft (except a sinkbox), including those capable of being propelled by motor, sail and wind, or both, only when (i) the motor of such craft has been completely shut off and/or the sails furled, as the case may be and (ii) the progress or motion of the craft in the water has ceased and the craft is drifting, beached, moored, resting at anchor, or is being propelled solely by paddle, oars, or pole.

It shall be lawful to use a motor or sail on a craft as a means of retrieving or picking up dead or injured birds.

All migratory game birds, including waterfowl, may be taken on or over standing crops (including aquatics), flooded standing crops, flooded harvested crop lands, grain crops properly shucked on the field where grown, or grains found scattered solely as a result of normal agricultural planting or harvesting and in addition, all migratory game birds, except waterfowl, may be taken on or over lands where shelled, shucked, or unshucked corn, wheat or other grain, salt or other feed has been distributed or scattered solely as a result of valid agricultural operations or procedures.

3. Transportation

Any person, without a permit, may transport lawfully killed and possessed migratory game birds into, within, or out of any state, or export such birds to a foreign country during and after the open seasons in the state where taken, subject to the conditions and restrictions specified in this part.

If such birds are dressed, one fully feathered wing must remain attached to each bird so as to permit species identification while being transported between the place where taken and the personal abode of the possessor or between the place where taken and a commercial preservation facility.

Any package or container in which such birds are transported shall have the name and address of the shipper and of the consignee and an accurate statement of the numbers and kinds of birds contained therein clearly and conspicuously marked on the outside thereof.
4. Possession for the Purpose of Processing, Transportation, or Storage

No hunter who legally takes and possesses any migratory game birds shall place or leave any such birds in the custody of any other person for picking, cleaning, processing, shipping, transportation, or storage (including temporary storage) unless such birds have a tag attached signed by the hunter stating his address, the total number and kinds of birds, and the date such birds were killed.

No person may receive or have in custody any migratory game birds belonging to another person unless such birds are tagged as provided above.

No hunter who legally takes and possesses any migratory game birds shall place or leave such birds at any place for storage (including temporary storage) other than at his personal abode unless such birds are tagged as provided above. Legally possessed migratory game birds being transported in any vehicle as the personal baggage of the possessor shall not be deemed to be in storage or temporary storage.

Any commercial picking establishment or cold-storage or locker plant receiving, possessing, or having in custody any migratory game birds shall maintain accurate records showing the numbers and kinds of such birds, the dates received and disposed of, and the names and addresses of the persons from whom such birds were received and to whom such birds were delivered. The records required to be maintained shall be retained by the person or persons responsible for their preparation and maintenance for a period of 1 year following the close of the open season on migratory game birds prescribed for the state in which such picking establishment or cold-storage or locker plant is located.

5. Termination of Possession

For the purposes of this part, the possession of birds legally taken by any hunter shall be deemed to have ceased when such birds have been delivered by him to a post office, a common carrier, or a commercial cold-storage or locker plant for transportation by the postal service or a common carrier to some person other than the hunter.

6. Wounded Live Migratory Game Birds

Every migratory game bird wounded by hunting and reduced to possession by the hunter shall be immediately killed and become a part of the daily bag limit.

7. Possession of Plumage

Any person, without a permit, may possess and transport for his own use the plumage and skins of lawfully taken migratory game birds.

8. Wanton Waste of Migratory Game Birds

No person shall kill or cripple any migratory game bird pursuant to this regulation without any visible means to retrieve and without making a reasonable effort to retrieve the bird and include it in his daily bag limit. The shooting of crippled waterfowl from a motorboat under power will be permitted on those coastal waters and all waters of rivers and streams lying seaward from the first upstream bridge.
B. Seasons, Daily Bag Limits, Possession Limits and Shooting Hours for Migratory Game Birds

1. Webless Migratory Birds

<table>
<thead>
<tr>
<th>Species</th>
<th>Open Season</th>
<th>Daily Limit</th>
<th>Possession Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodcock</td>
<td>Oct. 1-Nov. 14</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Common Snipe</td>
<td>Sept. 1-Dec. 16</td>
<td>8</td>
<td>16</td>
</tr>
</tbody>
</table>

(Rev. 8/85) 4.02
APPENDIX III.
Singing-Ground Survey

Surveys to assess the woodcock population status are key elements in the management of the woodcock. In the federal system for woodcock, the annual singing-ground survey provides the most significant information to guide range-wide management (Tautin et al. 1983).

The singing-ground survey was developed in 1937 when Mendall, Swanson, and Aldous established the first route at the Moosehorn National Wildlife Refuge near Calais, Maine. Since these earlier times the survey has been expanded, refined, and randomized and remains as statistically sound as any audio-index strip-census technique. In 1986, 1,150 comparable routes were run range-wide. It is important to point out that the singing-ground survey does not provide direct estimates of woodcock populations, as other surveys of migratory birds. However, the survey is useful as an index to the size of the breeding population and in long-term trend analyses. Therefore, from a management standpoint, the survey appears adequate at this time.
## NORTH AMERICAN WOODCOCK SINGING GROUND SURVEY

**U.S. FISH AND WILDLIFE SERVICE.**
**OFFICE OF MIGRATORY BIRD MANAGEMENT, LAUREL, MARYLAND USA 20708-9619**

**EXAMPLE**
**CANADIAN WILDLIFE SERVICE, DEPARTMENT OF THE ENVIRONMENT**
**OTTAWA, ONTARIO, CANADA K1A 0H3**

### SURVEY YEAR
1990

### STATE OR PROVINCE
MD

### COUNTY

### ROUTE NUMBER
7

### DATE OF SURVEY
88 05 05

### OBSERVER'S NAME (PRINT)
J. B. Bortner

### WAS THIS ROUTE RUN BY YOU LAST YEAR?

### MAILING ADDRESS
STREET: MRMO, U.S. FISH AND WILDLIFE SERVICE
CITY: LAUREL
STATE/PROVINCE: MD
ZIP CODE: 21708

### OFFICIAL SUNSET
2:49 PM

### ROUTE NAME

### SWING CONDITION
0 CLEAR
1 1/4 OVERCAST
2 1/2 OVERCAST
3 3/4 OVERCAST
4 3/4 OVERCAST - ADD 15 MIN

### TEMPERATURE

### WIND
0 CALM
1 GENTLE (1-3 mph)
2 LIGHT (3-8 mph)
3 MODERATE (8-12 mph)
4 STRONG (12+ mph)

### PRECIPITATION
0 NONE
1 MIST
2 SLOW, HEAVY RAIN
3 HEAVY RAIN
4 MEDIUM RAIN
5 LIGHT RAIN

### DO NOT WRITE IN THIS LINE

### STOP NUMBER
1 2 3 4 5 6 7 8 9 10

### ODOMETER READING
03.6 04.0 04.4 04.8 05.2 05.6 06.0 06.4 06.8 07.2

### TIME
8:11 8:14 8:17 8:20 8:23 8:27 8:30 8:34 8:37 8:40

### NUMBER HEARD PEENTING
0 0 0 0 0 0 0 0 0 0

### DISTURBANCE
Low

### REMARKS
tractor plowing

### TOTAL WOODCOCK HEARD PEENTING
10

### TOTAL STOPS

### ACCEPTABLE STOPS

### TOTAL WOODCOCK ON ACC. STOPS

### ROUTE STATUS

### SUNSET TIMES FOR THIS ROUTE:

<table>
<thead>
<tr>
<th>DATE</th>
<th>APR 25</th>
<th>APR 30</th>
<th>MAY 5</th>
<th>MAY 10</th>
<th>MAY 15</th>
<th>MAY 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAVES</td>
<td>7 35</td>
<td>7 42</td>
<td>7 49</td>
<td>7 55</td>
<td>8 02</td>
<td>8 06</td>
</tr>
<tr>
<td>STAIRED TIME</td>
<td>6 35</td>
<td>6 42</td>
<td>6 49</td>
<td>6 55</td>
<td>7 02</td>
<td>7 08</td>
</tr>
</tbody>
</table>

**STATE/PROVINCIAL COORDINATOR:**
GREG SEPPIK 227-454-3521

PLEASE READ INSTRUCTIONS ON REVERSE SIDE CAREFULLY AND COMPLETELY.

Main Points to consider are listed below:
1. Conduct survey within dates shown on map (see reverse).
2. Make sure to conduct survey at proper time for any condition.
3. Stops should be at 0.6 mi (1.0 km) Intervals, listen for exactly 2 minutes at each stop.
4. Do not conduct survey if temperature is below 24°F (-4°C), in strong wind, or in heavy precipitation.
5. Contact your state coordinator promptly if unable to run your route within the designated dates.
6. Fill out all sections of this form and immediately mail form.
APPENDIX IV.
Wing-Collection Survey

The USFWS administers a survey called the wing-collection survey. Participants in this survey are selected in a nonrandom manner from several sources and include hunters who: (1) participated in the previous year's survey; (2) requested that they be included in the survey; or (3) indicated in a state or federal hunting survey that they hunted woodcock during the previous season. The participants are asked to submit a wing from each woodcock killed along with supplemental information on their hunting activities (Kelly 1986). Age and sex ratios in the harvest are derived annually at the USFWS's "wingbee". These ratios provide data on recruitment from the previous breeding season. This survey also provides data on changes in size and distribution of the harvest by participating hunters. In 1986, 1,500 hunters cooperated and mailed in one wing from over 10,700 birds.
**WOODCOCK SURVEYS**

**BUSINESS REPLY MAIL**
FIRST CLASS
PERMIT NO. 13BN
LAUREL, MD

POSTAGE WILL BE PAID BY DEPARTMENT OF INTERIOR

DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
OFFICE OF MIGRATORY BIRD MANAGEMENT
LAUREL, MARYLAND 20708

---

**FOR EACH DAY’S HUNT, RECORD FOLLOWING:**

(IF SPECIFICALLY HUNTING WOODCOCK BUT NONE BAGGED, SEND EMPTY ENVELOPE WITH INFORMATION LISTED IN SPACES PROVIDED)

**IMPORTANT PLEASE READ**

1. Use ONE envelope for each day's hunt, and enclose ONE wing from each woodcock you bag.
2. Do NOT give envelopes to other hunters, and do NOT enclose wings from birds they shoot.
3. Continue sending wings throughout the entire season.
4. Do not wrap wings in foil or plastic as this causes spoilage.
5. Mail as soon as possible—NO POSTAGE REQUIRED.

Form 3-156a
(Rev. May 1982)

---

<table>
<thead>
<tr>
<th>DATE OF HUNT:</th>
<th>Hunter number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nearest Town(s):</td>
<td></td>
</tr>
<tr>
<td>County(s):</td>
<td></td>
</tr>
<tr>
<td>State:</td>
<td></td>
</tr>
</tbody>
</table>

**PLEASE RECORD (FOR PARTY)**

<table>
<thead>
<tr>
<th>No. Hours Hunted:</th>
<th>No. Hunters in Party:</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Woodcock Flushed by Party:</td>
<td></td>
</tr>
<tr>
<td>No. Woodcock Retrieved by Party:</td>
<td></td>
</tr>
<tr>
<td>No. Woodcock Critically</td>
<td>Not Retrieved by Party:</td>
</tr>
</tbody>
</table>

---

Form 3-156a
(Rev. May 1982)
APPENDIX V.
TRENDS IN HARVEST AND HUNTING ACTIVITY FOR MIGRATORY GAME BIRDS OTHER THAN WATERFOWL AND COOTS: 1987 SEASON UPDATE

Estimates of harvest and hunting activity for nine species or groups of migratory game birds other than waterfowl and coots, as obtained in the USFWS Annual Questionnaire Survey of U.S. Waterfowl Hunters, are presented here at the State level for the 1986 and 1987 seasons (Tables 1-6) together with a summary of national estimates for the 5-year period 1983-1987 (Table 7). Most of these species have been included in the harvest survey since 1984 and long-term averages and trends at regional and national levels are also summarized (Tables 8-9). These estimates are best treated as index values for detecting major short-term changes from year to year at regional or national levels and for identifying long-term trends at State (and other) levels. Even for these purposes the results must be used cautiously since there are problems with using a waterfowl hunter sampling frame to study other hunting and since, to expedite preparation of this report, simplified analytical procedures have been used involving assumptions which may, in varying degrees, be poorly met. For background information on survey procedures and the results of earlier surveys and on the uses and limitations of these results, see "Hunting and harvest trends for migratory game birds other than waterfowl: 1964-76" by E.K. Martin, 1979, USFWS Spec. Sci. Rep.--Wildl. No 218.

The latest results, most of which also appear in the accompanying tables, are outlined briefly by species below. (As background, numbers of waterfowl hunters decreased by about 9% from 1986.)

**Mourning Dove (Tables 1, 7, 8, and 9)**

Numbers of waterfowl hunters hunting mourning doves decreased between 1986 and 1987 at about the same rate as waterfowl hunters decreased. Average dove harvest increased but total harvest decreased. Simple t-tests of State-level differences between 1986 and 1987 detected no significant changes in these differences. The long-term (1964-86) trend in percentage hunting has been upward in the Eastern and Central Units but downward in the Western Unit with the latter being especially evident since 1974. Average bag has shown no consistent direction in the Eastern Unit but elsewhere decreases are indicated. The decrease in the Western Unit is related primarily to the 1964-73 period, while that in the Central Unit has been most pronounced during the 1974-86 period.

**White-winged Dove (Tables 2, 7, 8, and 9)**

Hunter participation is at the lowest level recorded since this survey began in 1966. Bag per hunter is close to the long-term average while total harvest remains well below average. Hunter participation has shown a significant decrease over the long term, but changes in average harvest have shown no such directional consistency over time.

**Band-tailed Pigeon (Tables 2, 7, 8, and 9)**

Hunter participation and success were both up slightly from the lows of last season. Over the long-term, the proportion hunting has changed little because of a nearly parallel decrease in waterfowl hunters. A significant decrease is indicated for average bag in the Pacific Coast States, apparently due to decreases during the early period and a sharp decrease between the 1966-75 period and the 1976-86 period rather than to a steady decline. For the inland states, a significant decrease is indicated for the 1978-86 period.

**Sandhill (Little Brown) Crane (Tables 2, 7, 8, and 9)**

Hunter participation and harvest both increased from 1986. Percentage hunting has increased significantly since 1968, while average harvest has been relatively stable over the long term.

**Common Snipe (Tables 2, 7, 8, and 9)**

Both total hunters and harvest increased slightly from 1986. Long-term trends have been mixed with hunter participation showing significant decreases since 1974 though not over the longer period since 1964 except in the Atlantic Flyway. Average bag has increased since 1964, but mostly during 1974-86 and primarily in the Mississippi Flyway.
Table 3. American woodcock hunting activity and success by duck stamp purchasers during the 1986-87 and 1987-88 seasons (1987-88 estimates are preliminary).

<table>
<thead>
<tr>
<th>Flyway and State</th>
<th>Stamp buyers participating</th>
<th>Birds harvested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>24.8 31.0 3,100 3,800</td>
<td>1.6 2.0 4,800 7,500</td>
</tr>
<tr>
<td>Delaware</td>
<td>6.6 8.3 600 700</td>
<td>1.6 2.3 900 1,600</td>
</tr>
<tr>
<td>Florida</td>
<td>4.6 4.8 900 900</td>
<td>2.5 3.9 2,200 3,300</td>
</tr>
<tr>
<td>Georgia</td>
<td>7.9 8.1 1,300 1,300</td>
<td>2.9 1.7 3,900 2,100</td>
</tr>
<tr>
<td>Maine</td>
<td>35.3 36.5 4,400 4,200</td>
<td>5.1 6.5 22,700 27,500</td>
</tr>
<tr>
<td></td>
<td>A Maryland 6.7 7.4 2,600 2,800</td>
<td>1.4 3.5 3,600 9,800</td>
</tr>
<tr>
<td></td>
<td>T Massachusetts 23.6 24.3 4,200 4,300</td>
<td>3.5 3.1 14,800 13,300</td>
</tr>
<tr>
<td></td>
<td>L New Hampshire 28.4 30.2 2,500 2,500</td>
<td>3.1 2.7 7,800 6,700</td>
</tr>
<tr>
<td></td>
<td>A New Jersey 11.9 15.8 2,200 2,600</td>
<td>3.2 4.0 7,100 10,100</td>
</tr>
<tr>
<td></td>
<td>N New York 17.1 19.0 9,600 9,600</td>
<td>2.1 2.8 20,200 26,600</td>
</tr>
<tr>
<td></td>
<td>T North Carolina 6.8 6.9 1,900 1,900</td>
<td>3.8 3.0 7,100 5,500</td>
</tr>
<tr>
<td></td>
<td>I Pennsylvania 19.7 20.4 10,500 10,000</td>
<td>1.9 2.1 20,300 21,300</td>
</tr>
<tr>
<td></td>
<td>C Rhode Island 17.0 22.7 400 600</td>
<td>1.7 4.5 600 2,500</td>
</tr>
<tr>
<td></td>
<td>South Carolina 7.5 10.7 1,400 1,900</td>
<td>3.7 3.4 5,100 6,600</td>
</tr>
<tr>
<td></td>
<td>Vermont 28.4 33.9 1,800 2,000</td>
<td>3.2 3.7 5,800 7,400</td>
</tr>
<tr>
<td></td>
<td>Virginia 7.9 9.6 1,500 1,800</td>
<td>2.0 2.7 5,000 4,900</td>
</tr>
<tr>
<td></td>
<td>West Virginia 21.2 14.9 400 200</td>
<td>4.6 2.0 1,700 400</td>
</tr>
<tr>
<td></td>
<td>Others (a) 6.1 7.4 tr. 100</td>
<td>1.2 5.0 tr. 400</td>
</tr>
<tr>
<td></td>
<td>Total 14.6 15.9 49,600 51,000</td>
<td>2.7 3.1 131,700 157,300</td>
</tr>
<tr>
<td></td>
<td>Alabama 4.7 6.1 500 600</td>
<td>3.7 5.0 2,000 3,000</td>
</tr>
<tr>
<td></td>
<td>Arkansas 3.6 4.9 1,300 1,700</td>
<td>2.4 3.5 3,200 5,700</td>
</tr>
<tr>
<td></td>
<td>Illinois 4.9 6.1 2,500 3,100</td>
<td>2.8 2.5 6,900 7,700</td>
</tr>
<tr>
<td></td>
<td>Indiana 12.4 13.1 1,700 1,700</td>
<td>3.4 4.7 5,900 7,900</td>
</tr>
<tr>
<td></td>
<td>Iowa 4.5 6.9 1,400 2,000</td>
<td>2.6 2.0 3,700 3,900</td>
</tr>
<tr>
<td></td>
<td>Kentucky 7.6 6.5 900 800</td>
<td>3.0 1.7 2,800 1,300</td>
</tr>
<tr>
<td></td>
<td>Louisiana 13.5 16.3 13,500 15,000</td>
<td>8.2 8.3 110,900 125,500</td>
</tr>
<tr>
<td></td>
<td>Michigan 27.9 28.7 14,200 14,700</td>
<td>4.8 4.8 68,800 71,100</td>
</tr>
<tr>
<td></td>
<td>Minnesota 10.8 11.9 14,100 14,300</td>
<td>2.4 5.2 34,500 74,000</td>
</tr>
<tr>
<td></td>
<td>Mississippi 6.5 5.4 1,200 800</td>
<td>2.7 3.4 3,400 2,900</td>
</tr>
<tr>
<td></td>
<td>Missouri 5.5 6.4 2,100 2,300</td>
<td>2.9 3.4 5,900 7,700</td>
</tr>
<tr>
<td></td>
<td>Ohio 13.0 14.0 3,300 3,300</td>
<td>2.7 1.8 8,900 5,800</td>
</tr>
<tr>
<td></td>
<td>Tennessee 5.5 6.1 1,100 1,200</td>
<td>2.9 2.8 3,300 3,400</td>
</tr>
<tr>
<td></td>
<td>Wisconsin 18.4 21.1 16,400 17,600</td>
<td>3.7 3.7 59,800 64,300</td>
</tr>
<tr>
<td></td>
<td>Total 11.8 13.4 74,400 78,900</td>
<td>4.3 4.9 319,800 384,300</td>
</tr>
<tr>
<td></td>
<td>C Kansas 3.0 3.2 1,000 800</td>
<td>1.7 2.5 1,700 2,100</td>
</tr>
<tr>
<td></td>
<td>E Nebraska 1.4 1.6 500 500</td>
<td>2.2 0.9 1,100 500</td>
</tr>
<tr>
<td></td>
<td>M Oklahoma 2.8 3.2 500 500</td>
<td>2.8 2.1 1,300 1,000</td>
</tr>
<tr>
<td></td>
<td>T Texas 2.2 2.6 2,000 2,200</td>
<td>5.7 4.2 11,500 9,200</td>
</tr>
<tr>
<td></td>
<td>Others (a) 0.4 0.3 600 400</td>
<td>3.8 2.3 2,300 1,000</td>
</tr>
<tr>
<td></td>
<td>Total 1.4 1.6 4,600 4,400</td>
<td>3.9 3.1 17,900 13,700</td>
</tr>
<tr>
<td></td>
<td>U.S. Total 10.0 11.3 128,600 134,300</td>
<td>3.7 4.1 469,400 555,200</td>
</tr>
</tbody>
</table>

(a) No open season on woodcock in State where duck stamp was purchased, and no data are available for reassignment of hunters to State of harvest.
APPENDIX VII.
WOODCOCK HUNTER DATA SHEET

<table>
<thead>
<tr>
<th>MO-DAY</th>
<th>TOWN #</th>
<th>Number in Party</th>
<th>Hours Hunted</th>
<th>Leave Blank</th>
<th>Number Flushed</th>
<th>Number Killed</th>
<th>Cover Code</th>
<th>Weather Code</th>
</tr>
</thead>
</table>

Cooperators Name:

* Use one line for each town hunted

(See Back)

**Cover Codes (Use combinations as necessary):**

- A - ALDER
- B - ASPEN
- C - CONIFERS
- D - MAPLE BEECH
- E - BIRCH
- F - OLD FIELDS
- G - OTHER (specify)

**Weather Codes:**

- M - CLEAR & WARM
- Q - WINDY
- N - CLEAR & COOL
- R - OTHER (specify)
- O - OVERCAST
- P - PRECIPITATION
WOODCOCK HUNTER QUESTIONNAIRE

(please circle appropriate response)

1. How did your woodcock season compare to last year?
   Better  Same  Worse

2. Did you hunt with a dog?  Yes  No  If yes, which breed(s)?

3. In general, weather conditions during the season were:
   Wet  Dry  Average

4. Did you experience any major migrations of woodcock through your area?
   Yes  No  If yes, approximately when did this occur?

5. Did you lose any coverts this past year to development?  Yes  No
   Or to anything else? (Please explain)

6. Was access restricted (gated roads, posted land, etc.) in areas where you hunt?  Yes  No

7. How did grouse numbers this season compare to last year?
   Better  Same  Worse

8. Hunting pressure has: increased  decreased  remained the same in recent years.

ADDITIONAL COMMENTS:
APPENDIX VIII.
Committee members will include a Regional Director representing each Flyway. Each Regional Director will have the staff support of their Regional Migratory Bird Coordinator. The Chief, Office of Migratory Bird Management, will serve as the Executive Secretary and a non-voting Committee Member and will report directly to the Chairman and Director. The Migratory Bird Management Office and the Flyway Representatives will provide advice to the Committee through the Executive Secretary.
APPENDIX IX.
ISSUANCE OF ANNUAL
REGULATIONS PERMITTING
THE SPORT HUNTING
OF MIGRATORY BIRDS

U. S. FISH AND WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR
Federal and State Calendar of events pertaining to setting woodcock hunting regulations.

The development of annual regulations is based on population data but the final regulations are the result of a series of exchanges of information throughout the year. The following is the schedule of major activities and meetings related to the establishment of woodcock hunting regulations for 1986-87.

January 21

State conservation agency Directors received the 1986 regulations schedule of events and meeting pertaining to migratory birds from the U.S. Fish and Wildlife Service (Service).

February 5

Service Regulations Committee (Appendix VIII) met to consider proposed changes in basic and annual hunting regulations relating to woodcock and other webless migratory birds.

March 13

Recommendations of the Service Regulations Committee were published in the Federal Register as part of a "Notice of Proposed Rule-making". The recommendations were open to public comment until July 14.

March 23

The Service Regulations Committee met to consider recommendations of the Flyway Councils regarding basic and annual regulations.

April-May

The singing-ground survey (Appendix III), which involves counts of singing male woodcock heard along predetermined routes, is run throughout the woodcock's breeding range and is interpreted as an index to the size of the breeding population.

June 6

Supplemental proposals for migratory game bird hunting regulations are published in the Federal Register.

June 18

The Service Regulations Committee met to develop regulation recommendations for woodcock and other webless migratory birds.
The information collected as a result of the singing-ground survey and the wing-collection survey are consolidated into an administrative report (Appendix X) and is made available to the various State agencies and Service Regulations Committee members.

General consensus of the MDIFW Wildlife Division staff (after review of the singing-ground survey, wing-collection survey (Appendix IV), and the woodcock hunter survey (Appendix VII) is that no changes in the general woodcock season scheme (45-day season beginning October 1 with a 3-bird daily bag limit) were warranted for 1986.

A public hearing was held in Washington D.C. to review the latest information and further consider woodcock seasons and bag limits. Following the hearing the Service Regulations Committee met to review the comments.

Proposed frameworks for woodcock hunting regulations were published in the Federal Register. Copies of proposals were forwarded to State conservation agencies.

A public hearing in Augusta was held concerning Maine's 1986 woodcock season. Specific hunting dates for Maine were sent to the Service, following public comment, by the July 31 deadline.

Maine's proposed woodcock season was published in the appropriate media.

Final frameworks for selecting woodcock seasons for the 1986-87 season were published in the Federal Register.

Seasons, bag limits and possession limits for woodcock were published in the Federal Register.

A Summary of Federal Hunting Regulations for 1986-87 (Appendix XII) for woodcock and other webless migratory birds was published and distributed to appropriate agencies and individuals.
Brief summary of informational exchange and review prior to selecting woodcock hunting seasons.

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Federal</th>
<th>State</th>
</tr>
</thead>
</table>
| January-March    | 1. Exchanges of information dealing with proposed changes in woodcock regulations with opportunity for review and comment via Federal Register.  
2. Coordinate singing-ground survey participants. |                                                                  |
2. Provide technical assistance to Moosehorn National Wildlife Refuge research staff to assess breeding and nesting conditions. |
A. Singing-ground survey results.  
B. Wing collection results.  
2. Review results of both surveys.  
3. Publish proposed framework for next hunting season. | 1. Review survey results and discuss with Wildlife Division staff.  
2. Conduct public hearing and discuss woodcock status and proposed season framework.  
3. Review public comment and select season.  
Publish woodcock season in appropriate media. |
| August           | Final framework selected and published in Federal Register after receiving input from states. | Conduct Woodcock Season (1986 - 1 Oct.-14 Nov.) |
| September-November| Summary of Federal hunting regulations published. | Contact woodcock hunters for input regarding hunting conditions of previous woodcock season. |
APPENDIX X.
American Woodcock
Harvest and Breeding
Population Status, 1988

Department of the Interior  U.S. Fish & Wildlife Service
APPENDIX XI.
Director (FWS/MBMO)
U.S. Fish and Wildlife Service
Department of the Interior
Washington, D.C. 20240

Dear Sir:

In response to your recent letter transmitting a summary of the approved frameworks for the 1987-88 seasons on doves, rails, woodcock, snipe, and common moorhens and purple gallinules, open season dates on the species applicable to this State have been selected as follows (all dates inclusive):

CHECK THE APPROPRIATE BLOCK AND INDICATE APPLICABLE DATES - ALSO INDICATE THOSE SEASONS THAT ARE CLOSED AND THOSE FOR WHICH THE SELECTION IS DEFERRED

MOURNING DOVES: (between Sept. 1 and Jan. 15)

[ ] Option 1. Limits—12 doves daily, 24 in possession

[ ] 70 consecutive days From _____ to _____

or

[ ] 2 or 3 periods totaling not more than 70 days

From _____ to _____

and

From _____ to _____

and

From _____ to _____

OR

[ ] Option 2. Limits—15 doves daily, 30 in possession

[ ] 60 consecutive days From _____ to _____

or

[ ] 2 or 3 periods totaling not more than 60 days

From _____ to _____

and

From _____ to _____

and

From _____ to _____

Also, check one below:

[ ] Half-days
[ ] Full days

MAINE

(State)
<table>
<thead>
<tr>
<th>Species</th>
<th>Season</th>
<th>Bag Limit</th>
<th>Notes</th>
<th>Date Range</th>
<th>Date Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>** Rails (Sora and Virginia)**</td>
<td>(between Sept. 1 and Jan. 20)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[x] 70 consecutive days</td>
<td>From 1 SEPT. to 9 NOV.</td>
<td>25/25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[ ] 2 periods totaling 70 days</td>
<td>From to and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>From to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>** Woodcock **</td>
<td>(between Oct. 1 and Jan. 31)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[x] 45 consecutive days</td>
<td>From 1 OCT. to 14 NOV.</td>
<td>3/6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[ ] 2 periods totaling 45 days</td>
<td>From to and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>From to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>** Common Snipe **</td>
<td>(between Sept. 1 and Jan. 31)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[x] 107 consecutive days</td>
<td>From 1 SEPT. to 16 DEC.</td>
<td>8/16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[ ] 2 periods totaling 107 days</td>
<td>From to and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>From to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>** Common Moorhens and Purple Gallinules **</td>
<td>(between Sept. 1 and Jan. 20)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[x] 70 consecutive days</td>
<td>From 1 SEPT. to 9 NOV.</td>
<td>15/30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[ ] 2 periods totaling 70 days</td>
<td>From to and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>From to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Woodcock, snipe, rail, and moorhen and gallinule seasons starting after September 30 may be selected in August along with waterfowl seasons.*

*Signature*

*Commissioner*

(State)

SEL-ME
APPENDIX XII.
SUMMARY OF FEDERAL HUNTING REGULATIONS 1986-87

MOURNING DOVES, WHITE-WINGED AND WHITE-TIPPED DOVES, BAND-TAILED PIGEONS, RAILS, WOODCOCK, SNIPE, SEA DUCKS, TEAL IN SEPTEMBER, DUCKS IN 4 STATES, SANDHILL CRANES, COMMON MOORHENS AND PURPLE GALLINULES, AND ALL MIGRATORY GAME BIRDS IN ALASKA, PUERTO RICO, THE VIRGIN ISLANDS AND HAWAII

Notice: THE FOLLOWING INFORMATION IS ONLY A SUMMARY OF THE MAJOR REGULATIONS OF INTEREST TO MOST HUNTERS. HUNTERS SHOULD ALSO CONSULT THE ACTUAL FEDERAL REGULATIONS, WHICH ARE FOUND IN TITLE 50, CODE OF FEDERAL REGULATIONS, PART 26, AND WHICH ARE AVAILABLE AT LAW ENFORCEMENT OFFICES LISTED LATER, FOR THE FULL TEXT OF THE APPLICABLE REGULATIONS. HUNTERS SHOULD ALSO CONSULT STATE LAWS, WHICH MAY BE MORE RESTRICTIVE, AND SPECIAL REGULATIONS FOR STATE AND FEDERAL PUBLIC HUNTING AREAS.

GENERAL INFORMATION

In addition to State regulations, the following Federal rules apply to the taking, possession, shipping, transporting, and storing of migratory game birds.

Restriction. No person shall take migratory game birds:

- With a trap, snare, net, rifle, pistol, shotgun larger than a 10 gauge, punt gun, battery gun, machine gun, flamethrower, poison, drug, explosive, or stupefying substance.
- With a shotgun capable of holding more than three shells, unless it is plugged with a one-piece filler which is inseparable of removal without disassembling the gun.
- From a sink box (a low floating device, having a depression affording the hunter a means of concealment beneath the surface of the water.)
- From or with the aid or use of a car or other motor driven land conveyance, or any aircraft, except that paraphernalia and single or double amputees of the legs may take from any stationary motor vehicle or stationary motor-driven land conveyance. "Paraphernalia" means an individual affiliated with paralysis of the lower half of the body with involvement of both legs usually due to disease of or injury to the spinal cord.
- From or by means of any motor boat or sailboat unless the motor has been completely shut off and/or the sail furled, and its propeller theretofore has ceased.
- By the use or aid of live decoys. All live, same or captive ducks and geese shall be removed for a period of 10 consecutive days prior to hunting, and concealed in an enclosure which substantially reduces the audibility of their calls and totally conceals such tame birds from the sight of migratory waterfowl.
- Using records or tapes of migratory bird calls, or sounds, or electronically amplified imitations of birds.
- By driving, rallying, or chasing birds with any motorized conveyance or any sailboat to put them in the range of the hunters.
- By the aid of baiting (placing feed such as corn, wheat, salt, or other feed to constitute a lure or enticement) or on or over any baited area. Hunters should be aware that a baited area is considered to be baited for 10 days after the removal of the bait, and it is not necessary for the hunter to know an area is baited to be in violation.

Closed Season. No person shall take migratory game birds during the closed season.

Shooting or Hawking Hours. No person shall take migratory game birds except during the hours open to shooting and hawking as prescribed.

Daily Bag Limit. No person shall take in any one day more than one daily bag limit.

Field Possession Limit. No person shall possess more than one daily bag limit while in the field or while returning from the field to one's camp, home, etc.

Wanton Waste. All migratory game birds shall be retrieved, if possible, and retained in the custody of the hunter in the field.

Tagging. No person shall give, put or leave any migratory game birds at any place or in the custody of another person unless the birds are tagged by the hunter with the following information: (a) the hunter's signature, (b) the hunter's address, (c) the total number of birds involved, by species, and (d) the dates such birds were killed.

Tagging is required if the birds are being transported by another person (for the hunter, or if the birds have been left for cleaning, storage (including temporary storage), alignment, or taxidermy services.

Possession of Live Birds. Wounded birds reduced to possession shall be immediately killed and included in the daily bag limit.

Dressing. No person shall completely field dress any migratory game bird (except doves and band-tailed pigeons) and then transport the birds from the field. The head or one fully feathered wing must remain attached to all such birds while being transported from the field to one's home or to a migratory bird preservation facility.
## RAILS, WOODCOCK AND SNIPE

<table>
<thead>
<tr>
<th>Rails (Sora &amp; Virginia)</th>
<th>Rails (Clapper &amp; King)</th>
<th>Woodcock</th>
<th>Common Snipe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily bag limit</td>
<td>25 (1)</td>
<td>5 (3)</td>
<td>8</td>
</tr>
<tr>
<td>Possession limit</td>
<td>25 (1)</td>
<td>10 (3)</td>
<td>16</td>
</tr>
</tbody>
</table>

Shooting Hours: One-half hour before sunrise until sunset daily on all species, except as noted otherwise.

### CHECK STATE REGULATIONS FOR ADDITIONAL RESTRICTIONS, INCLUDING AREA DESCRIPTIONS.

### Seasons in the Atlantic Flyway

<table>
<thead>
<tr>
<th>State</th>
<th>Season</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>Sept. 1-Nov. 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delaware</td>
<td>Sept. 1-Nov. 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Florida</td>
<td>Sept. 1-Nov. 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Georgia</td>
<td>Sept. 17-Dec. 25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maine</td>
<td>Sept. 1-Nov. 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maryland</td>
<td>Sept. 1-Nov. 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Sept. 1-Nov. 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Hampshire</td>
<td>Closed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Jersey (4b)</td>
<td>Closed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Zone</td>
<td>Sept. 1-Nov. 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Zone</td>
<td>Sept. 1-Nov. 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td>Closed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Island</td>
<td>Closed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remainder of State</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Carolina</td>
<td>Sept. 15-Nov. 22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Sept. 1-Nov. 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhode Island</td>
<td>Sept. 15-Nov. 22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Carolina</td>
<td>Sept. 15-Oct. 19 &amp; Nov. 1-Dec. 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vermont</td>
<td>Sept. 27-Dec. 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virginia</td>
<td>Sept. 8-Nov. 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Virginia</td>
<td>Sept. 1-Nov. 6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Seasons in the Mississippi Flyway

<table>
<thead>
<tr>
<th>State</th>
<th>Season</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama (10)</td>
<td>Nov. 12-Jan. 20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arkansas</td>
<td>Sept. 1-Nov. 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illinois</td>
<td>Sept. 1-Nov. 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indiana</td>
<td>Sept. 1-Nov. 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iowa (1)</td>
<td>Sept. 6-Nov. 14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kentucky</td>
<td>Sept. 1-Sept. 30 &amp; Oct. 8-Jan. 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Louisiana</td>
<td>Sept. 20-Sept.28 &amp; Nov. 8-Jan. 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michigan</td>
<td>Sept. 15-Nov. 14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minnesota</td>
<td>Oct. 18-Dec. 28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missouri</td>
<td>Oct. 18-Dec. 28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio</td>
<td>Sept. 1-Nov. 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tennessee</td>
<td>Sept. 8-Nov. 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wisconsin</td>
<td>Closed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Seasons in the Central Flyway

<table>
<thead>
<tr>
<th>State</th>
<th>Season</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado (1)</td>
<td>Sept. 1-Nov. 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kansas</td>
<td>Sept. 15-Nov. 21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Montana (2)</td>
<td>Closed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nebraska (3)</td>
<td>Sept. 1-Nov. 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Mexico (1)</td>
<td>Sept. 1-Oct. 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Dakota</td>
<td>Closed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Dakota (3)</td>
<td>Closed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Texas</td>
<td>Sept. 1-Nov. 9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Seasons in the Pacific Flyway

<table>
<thead>
<tr>
<th>State</th>
<th>Season</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado (1)</td>
<td>Sept. 1-Nov. 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Montana (3)</td>
<td>Closed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nebraska (3)</td>
<td>Sept. 1-Nov. 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Mexico (1)</td>
<td>Sept. 1-Oct. 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wyoming (5)</td>
<td>Sept. 1-Nov. 9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Note: No seasons are prescribed for woodcocks. Snipe seasons have been deferred by all other States in the Pacific Flyway. Consult waterfowl regulations to be published later for information concerning the snipe season in Montana.

### Federal Duck Stamp

Each waterfowl hunter 16 years of age or over must carry on his person a valid Migratory Bird Hunting and Conservation Stamp, or duck stamp, signed in ink across the face. Hunters under 16 may voluntarily purchase a duck stamp and help preserve wetlands for waterfowl.
APPENDIX XIII.
MOOSEHORN NATIONAL WILDLIFE REFUGE,  
U.S. FISH AND WILDLIFE SERVICE  
LIFE SCIENCES AND AGRICULTURE EXPERIMENT STATION  
UNIVERSITY OF MAINE AT ORONO

A Landowner’s Guide to  
Woodcock Management in the Northeast

Greg F. Sepik, Moosehorn National Wildlife Refuge,  
Calais, Maine

Ray B. Owen, Jr., University of Maine,  
Orono, Maine

Malcolm W. Caulton, University of Maine,  
Orono, Maine

62