Migratory bird hunting activity and harvest during the 2001 and 2002 hunting seasons

Final Report

February 2007

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This report should be cited as: U.S. Fish and Wildlife Service. 2007. Migratory bird hunting activity and harvest during the 2001 and 2002 hunting seasons – Final Report. U.S. Department of the Interior, Washington, D.C. U.S.A.

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Abstract: National surveys of waterfowl, dove, band-tailed pigeon (*Columba fasciata*), American woodcock (*Scolopax minor*), common snipe (*Gallinago gallinago*), rail, gallinule, and American coot (*Fulica americana*) hunters were conducted during the 2001 and 2002 migratory bird hunting seasons. About 1.4 million waterfowl hunters harvested 14,131,800 (±5%) ducks and 3,619,300 (±5%) geese in 2001, and about 1.3 million waterfowl hunters harvested 12,439,000 (±4%) ducks and 3,333,600 (±6%) geese in 2002. Mallard (*Anas platyrhynchos*), green-winged teal (*A. crecca*), gadwall (*A. strepera*), wood duck (*Aix sponsa*), and blue-winged teal (*A. discors*) were the most-harvested duck species, and Canada goose (*Branta canadensis*) was the predominant goose species in the harvest. About 1.2 million dove hunters harvested 23,576,000 (±7%) mourning doves (*Zenaida macroura*) in 2001 and 22,719,100 (±4%) in 2002. Woodcock hunters numbered about 140,000 in 2001 and 148,000 in 2002, and they harvested 341,900 (±19%) birds in 2001 and 265,600 (±18%) in 2002. Among the lesser-hunted species, about 29,000 people hunted snipe in 2001 (24,000 in 2002), and they harvested 85,500 (±39%) and 68,200 (±29%) snipe in 2001 and 2002, respectively; about 6,000 rail hunters harvested 41,200 (±75%) rails in 2001 and 23,800 (±48%) rails in 2002; gallinule hunters (about 8,000 in 2001 and 3,000 in 2002) harvested 11,200 (±77%) gallinules in 2001 and 13,700 (±66%) in 2002; and coot hunters (about 41,000 in 2001 and 22,000 in 2002) harvested 284,400 (±80%) coots in 2001 and 205,400 (±89%) in 2002.

INTRODUCTION

State wildlife agencies and the U.S. Fish and Wildlife Service (Service) established the national, cooperative Migratory Bird Harvest Information Program (HIP) in 1992 (Elden et al. 2002). This cooperative state-federal program was designed to provide annually an appropriate sample frame for national surveys of licensed migratory bird hunters, including those who hunt species for which adequate harvest information was lacking. The HIP requires licensed migratory bird hunters to identify themselves as such annually to the state licensing authority, provide the state their name, address, and date of birth, and carry evidence of their compliance whenever they hunt migratory birds in that state. States are required to collect this information from each licensed migratory bird hunter, provide the migratory bird hunters with proof of compliance, and ask each migratory bird hunter a series of screening questions about their hunting success the previous year. Additionally, the states must provide all of this information to the Service within 30 days of collection. The Service is responsible for using the data provided by the states to conduct national hunter activity and harvest surveys annually for all migratory game birds.

A two-year pilot phase of the HIP was conducted in 1992 and 1993 in California, Missouri, and South Dakota. The implementation phase began with the addition of Maryland in 1994, followed by Michigan, Oklahoma, and Oregon in 1995; Alabama, Georgia, Idaho, Illinois, Maine, Minnesota, Mississippi, Pennsylvania, Tennessee, and Vermont in 1996; and Arizona, Delaware, Florida, Kentucky, North Carolina, and Texas in 1997. All remaining states except Hawaii entered the program in 1998.

From the pilot phase through the 1995-96 hunting season, the Service conducted two HIP surveys annually to estimate hunting activity and harvest: a waterfowl (ducks, sea ducks, geese,

and coots) survey and an upland game bird (doves, band-tailed pigeons, and woodcock) survey. In 1996, the Service revised and expanded the HIP survey design and conducted four harvest surveys in participating states: a waterfowl survey, a dove and band-tailed pigeon survey, a woodcock survey, and a coot, snipe, rail, and gallinule survey. Those four surveys were conducted nationwide during the 2001-02 (hereafter 2001) and 2002-03 (hereafter 2002) hunting seasons. The purpose of this report is to present the HIP hunter activity and harvest estimates for the 2001 and 2002 migratory bird hunting seasons.

HIP SURVEY DESIGN AND METHODS

Sample Frame

The HIP sample frame consisted of hunters who identified themselves as potential migratory bird hunters when they purchased state hunting licenses. People who hunted migratory birds in more than one state had to comply with the HIP requirement in each state in which they hunted, thus, the HIP sample frame was specific to each state. Some states required all persons hunting migratory game birds to obtain HIP certification, including those who were otherwise exempt from state license requirements (e.g., juniors, seniors, disabled veterans, landowners). In most states, however, migratory bird hunters who were exempt from state hunting license requirements were also exempt from the HIP requirement. The states used five general methods to identify migratory bird hunters and collect their names, addresses, and previous-year hunting activity information:

(1) In 2001, 15 states (13 in 2002) required migratory bird hunters to fill out a separate form to obtain a special migratory bird permit or stamp in addition to the regular state hunting license. Some of these states instructed hunting license vendors to send the completed forms directly to the Service weekly, whereas others had the vendors send the forms to the state, which then key-punched the data and sent electronic files to the Service twice a month.

(2) Five states (4 in 2002) incorporated HIP certification into their regular small game or universal hunting licenses. Migratory bird hunters in these states were not required to obtain a separate permit, but were required to provide their information and indicate their migratory bird hunting status directly on their hunting license or license application. The states entered the data and sent electronic data files to the Service twice a month.

(3) Sixteen states (19 in 2002) incorporated HIP certification into their electronic licensing systems. License vendors were prompted via computer terminals to ask migratory bird hunters the required HIP certification questions. Hunters' responses were entered directly at the "point-of-sale" and electronic files containing the HIP information were forwarded to the Service twice a month.

(4) Thirteen states implemented the HIP using a telephone certification system. Migratory bird hunters were instructed by the state to call a toll-free number, whereupon they were asked the series of required HIP questions. After answering the questions, each migratory bird hunter was issued a unique HIP certification number to be written on his/her hunting license, which served

as proof of compliance with the HIP requirements. Electronic files were sent to the Service twice a month.

(5) Several states issued hunting licenses and/or HIP certification via the Internet, as a secondary licensing method. HIP data collected through Internet licensing were sent to the Service in electronic files twice a month.

Stratification and Sample Selection

The states were required to ask migratory bird hunters a series of screening questions about the species they hunted and their hunting success the previous year. We used this prior year information as a predictor of current year hunting activity and success. We assigned each hunter to success/activity strata for ducks, geese, doves, band-tailed pigeons, woodcock, coot/snipe, and rails/gallinules based on his/her responses to the screening questions.

We assigned hunters to one "duck" stratum and one "goose" stratum, each consisting of three levels: "None" - did not hunt or bagged 0 ducks (geese) last year; "Bagged 1-10" ducks (geese) last year; and "Bagged >10" ducks (geese) last year. Some states along the Atlantic coast have special sea duck seasons, that is, separate season dates and bag limits for hunting eiders (*Somateria* spp.), scoters (*Melanitta* spp.), and long-tailed ducks (*Clangula hyemalis*) in certain zones. Additionally, Alaska has separate sea duck bag limits that pertain to the aforementioned species as well as harlequin ducks (*Histrionicus histrionicus*), common mergansers (*Mergus merganser*), and red-breasted mergansers (*M. serrator*). In those states, we established two sea duck strata: "Yes" – hunted sea ducks the previous year; and "No" – did not hunt sea ducks the previous year. Similarly, in Atlantic and Pacific coast states with special brant (*Branta bernicla*) hunting regulations, hunters who intended to hunt brant during the current season were assigned to one of two strata: "Yes" – intend to hunt brant during the current season; and "No" – do not intend to hunt brant during the current season.

Dove survey stratification also was comprised of three levels: "None" - did not hunt or bagged 0 doves last year; "Bagged 1-30" doves last year; and "Bagged >30" doves last year. In Arizona, California, Colorado, New Mexico, Oregon, and Utah, we established two strata for band-tailed pigeons: "Yes" – intend to hunt band-tailed pigeons during the current season; and "No" – do not intend to hunt band-tailed pigeons during the current season.

Stratification for woodcock consisted of two levels for states with few woodcock hunters ("Yes" - hunted woodcock last year; and "No" - did not hunt woodcock last year), and three levels for states with many woodcock hunters: "None" - did not hunt or bagged 0 woodcock; "Bagged 1-30" woodcock last year; and "Bagged >30" woodcock last year.

Coot/snipe and rail/gallinule stratification both had two levels: "Yes" - hunted coots and/or snipe (rails and/or gallinules) last year; and "No" - did not hunt either coots or snipe (rails or gallinules) last year.

The stratification was intended to maximize sampling efficiency for each species/species group by sampling the small group of active/very successful hunters at a high rate, the larger group of less successful hunters at a lower rate, and the very large group of migratory bird hunters who rarely, if ever, hunt the species/species group at a very low rate. For example, for the 2001 dove harvest survey in Alabama, we sampled about 6% of the hunters in the "Bagged >30" dove stratum, 3% of those in the "Bagged 1-10" stratum, and 0.6% of the hunters in the "None" stratum.

Sampling rates were state-specific, and they were established prior to the first sample selection in August. We set the sampling rates based on the number of migratory bird hunter name and address records that we expected to receive from each state, and the state-specific sample sizes that we would need to obtain desired precision levels. Thus, if the total number of names and addresses that we received in time to sample them was either much lower or much higher than the number we expected for any state, the sample sizes for that state were either inadequate or excessive. We adjusted sampling rates the following year in an attempt to maximize precision and minimize cost.

Survey Methodology

The HIP surveys were developed with the goal of reducing or eliminating several common sources of survey bias while maximizing survey response rates. A daily hunting diary format was used to reduce memory and prestige bias, both of which result in overestimation (Atwood 1956). Hunters selected for the surveys were asked to record the date of each hunt, the state and county where they hunted that day, and how many birds of various species they personally bagged that day. They were also asked to report the total number of days they hunted for each species/species group, the total number of birds they bagged, and the total number of birds they knocked down but were unable to retrieve. This enabled hunters to provide useful information even if they forgot to record their daily hunting information, or if they did not receive the form until after the hunting season began. Hunters needing additional space were asked to place a toll-free telephone call to the Service and request additional forms. Each form included a unique hunter identification number with a code identifying the survey type (waterfowl, dove and band-tailed pigeon, woodcock, or snipe, rail, gallinule, and coot) and the state from which the hunter was selected. Participation in these surveys was voluntary.

All surveys were conducted using Dillman's Total Design Method for mail surveys (Dillman 1978, Dillman 1991). This is a survey implementation method designed to maximize survey response rates and ensure quality and timely responses. Our survey packet consisted of the diary-format survey form (Appendix A); a personalized letter that explained the purpose of the survey, instructions for completing the survey, and why participation was vital to the survey's success; and a postage-paid envelope for returning the survey to the Service at the end of the hunting season. Soon after the initial batch of names and addresses was received from a state, we selected four stratified samples (one for each survey type) according to predetermined sampling rates. The appropriate survey packet was sent to each selected hunter within one to two weeks after his/her name was received. The sample selection and initial mailing process continued with each subsequent batch of names and addresses (roughly twice per month), with

the last initial mailing occurring on or shortly after the closing date of the state's last migratory bird hunting season. For all hunters who received their initial packets before the hunting season ended, we sent reminder postcards at the close of the season asking hunters to return their completed survey forms. For hunters who received the initial packet after the close of the hunting season, a reminder postcard was mailed approximately one week after the initial packet. Two to three weeks after the reminder postcard, we sent a follow-up packet via regular mail to all hunters who had not yet responded. Finally, three to four weeks later, we sent an additional follow-up packet to the remaining non-respondents.

Data Editing

We used the hunter identification number on each returned form to identify the sample frame (i.e., state) from which the respondent was selected and record the date of response. We sorted returned survey forms into those from active hunters and those from people who did not hunt the species we asked them about. All returned forms from active hunters were initially reviewed for data quality and completeness, and any discrepancies and errors were reconciled and corrected using predetermined criteria. Few forms contained detectable errors and correction of those errors was usually straightforward. Some examples of routine corrections are: (1) when people reported hunts in states other than the state for which they were selected, we simply deleted those hunts from the hunters' records; (2) when people reported the harvest of more than one hunter, we used notes included with their survey forms to adjust the daily and season totals appropriately; and (3) when people reported harvesting species for which the state did not have a hunting season, we either deleted those entries from the hunters' records or attributed the harvest to a legal species in that state. For example, if a hunter reported harvesting band-tailed pigeons in a state other than Arizona, California, Colorado, New Mexico, Oregon, or Utah, we assumed they were reporting harvest of rock pigeons (*C. livia*) and we deleted those records.

Upon completion of the initial error check, each returned form from an active hunter was scanned using an optical character recognition scanning system to record all the information on each form. Next, our clerical staff edited each record to correct any errors made by the scanning software, and then verified the data by comparing the corrected data with its original paper survey form, again correcting any errors they found. Finally, we compiled the data from each survey form into a database and each file was run through an error-check program which identified remaining errors such as invalid season dates, duplicate forms, and reported harvest greater than the legal bag limit.

Post-stratification

The stratification scheme described above depends on most hunters providing accurate answers to the HIP screening questions. Although we expect that most hunters give accurate responses when they are asked the screening questions, many of the state licensing systems rely upon license vendors to ask the questions and record the hunters' answers. Stratification data collected directly from hunters, e.g., through telephone HIP registration systems, are more reliable than similar data collected by systems that employ license vendors (Games et al. 2002).

License vendors have little incentive to ask the questions and record the answers correctly, and there are indications that some of them bypass most or all of the questions (Barton et al. 2002). When that happens, the answers to the screening questions default to "None" or "No", with the result that some very active hunters are assigned to the wrong activity/success strata.

Typically, this results in lower precision, but it does not bias the estimates. There is little noticeable effect when the sample for the "None" or "No" stratum is large enough to be representative of the stratum. However, when stratum-specific sample sizes are very small due to low sampling rates and/or low response rates, a single response from a very active hunter in the "None" or "No" stratum can exert a large influence on the overall point estimates of days afield and harvest. Although the associated variance estimates show that resulting point estimates are very imprecise, we recognize that many users of harvest estimates tend to disregard variance estimates. Therefore, in cases where one response or a few responses in the "None" or "No" stratum had undue influence on the resulting point estimate, we reassigned the response to a different stratum on the assumption that the screening question information was incorrect. We relied on detecting large deviations from state-level estimates for other years to make the decisions about which responses we post-stratified.

Analysis

We summarized each hunter's record as the total number of days afield, number of birds bagged (retrieved kill), and number of birds he/she knocked down but could not retrieve (unretrieved kill) that he/she reported for the entire season in the sample state, and we used those state-specific season totals to obtain estimates of harvest and hunter activity for each state and species/species group combination. For each of the surveyed species/species groups for which there was a hunting season in the sample state, we used the analysis methods described below (Cochran 1977, Steel and Torrie 1980). Referenced equations are summarized in Appendix B.

For each stratum, we estimated the mean number of days hunted, mean retrieved kill, and mean unretrieved kill and their respective variances (Equations 1 & 2). In addition, we calculated the proportion of active hunters (at least one day hunted) and its variance (Equations 3 & 4) for each stratum. Then, combining the stratum-specific means and variances with the number of hunters in each stratum, we estimated state-level totals for days afield, retrieved kill, and unretrieved kill (Equation 5) and their variances (Equation 6). We also estimated state-level totals of active hunters (Equation 7) and their variances (Equation 8) for each species/species group, by combining the stratum-specific proportions with the number of hunters in the appropriate stratum.

We estimated one additional parameter from the waterfowl survey data. The proportion of active waterfowl hunters (as opposed to active hunters of a specific species/species group) was estimated by counting a hunter as "active" if he/she reported hunting at least one day for any of the waterfowl species/species groups (i.e., ducks, geese, sea ducks, or brant).

We obtained management unit-level (e.g., flyway-level) and national estimates of total days afield, retrieved kill, and unretrieved kill for all species/species groups by summing the state-

level estimates. However, we were unable to estimate the number of active hunters at the management unit and national levels because some people hunt in more than one state, thus summing the state-level estimates would result in some duplication. We also could not estimate hunter activity and harvest and their variances at less than the state level, therefore we were unable to provide separate estimates for the Central and Pacific Flyway portions of Colorado, Montana, New Mexico, and Wyoming. Instead, we included all of Colorado, New Mexico, and Wyoming in the Central Flyway and all of Montana in the Pacific Flyway. We were able to generate flyway-specific point estimates of total duck and total goose harvest for those states using information from another source (see below).

Parts Collection Surveys

The Service has conducted a cooperative Waterfowl Parts Collection Survey (PCS) annually to estimate the species, age, and sex composition of the duck harvest since 1961 and the species and age composition of the goose harvest since 1962. We provided about 12,000 hunters who agreed to participate in this survey with large, postage-paid "wing envelopes" and asked them to send us a wing from each duck, brant, and coot they shot and the tail feathers and wing primary feather tips from each goose they shot throughout the hunting season. We also asked hunters to report the state, county, and date of harvest for each specimen they submitted. After the waterfowl hunting seasons ended, teams of federal and state biologists examined the specimens to determine the species, age, and sex of the birds.

We combined species composition estimates derived from the PCS with harvest estimates from the HIP waterfowl survey to calculate species-specific duck and goose harvest estimates. Date information provided by PCS participants was combined with HIP survey results to estimate harvests during special seasons (September teal seasons, September teal and wood duck seasons, September Canada goose seasons, and late seasons for resident Canada geese). Similarly, county information from the PCS was used to derive flyway-specific harvest estimates for Colorado, Montana, New Mexico, and Wyoming. Estimates of the number of immatures per adult in the harvest (age ratio), and the number of males per female (sex ratio) were calculated for each species and state. Because sampling intensity varied among states, we weighted state age and sex ratios by harvest estimates from the HIP waterfowl survey to obtain flyway and nationwide ratios.

The Service also has conducted a Woodcock Wing Collection Survey annually since 1977, primarily to estimate the age and sex composition of the woodcock harvest. Age and sex ratio estimates obtained from the woodcock wings collected in 2001 and 2002 were reported in "American woodcock population status, 2003" (Kelley 2001). This wing survey was expanded in 1997 to include rail wings to determine the species composition of the rail harvest, and band-tailed pigeon wings to obtain age ratio estimates.

SURVEY RESULTS AND DISCUSSION

Sample Frame

Some states (e.g., Iowa and Massachusetts) started issuing hunting licenses and HIP certifications as early as December of the year before the license was valid, whereas others (e.g., Ohio and Texas) did not begin issuing licenses and collecting HIP data until August. We asked all states to hold their HIP data until early August, and then begin sending the data twice a month. By early October we had received data from every state, a total of 2.4 million records in 2001 and 2.5 million in 2002. Most states continued to send us data twice a month for the rest of the season, and we received 3,756,600 (2001) and 3,751,006 (2002) records within the prescribed sampling time frame, i.e., two weeks after the closing date of the last migratory bird hunting season in each state (Appendix C1). Our samples were drawn only from those records. Maine was unable to provide any HIP name and address data for 2002 (Appendix D), therefore we used the 2001 data as the sample frame for 2002 surveys of Maine hunters.

The states reported HIP-certifying a combined total of 3,974,644 hunters for the 2001 hunting season and 3,875,160 for the 2002 season (Appendix D). Although we received the names and addresses of about 93% of all HIP-certified hunters in time to sample them, the number of records received from Florida, Kentucky, Michigan, Rhode Island, and Washington in 2001 and from California, Florida, Kentucky, Mississippi, and Utah in 2002 was only 30-75% of the number of HIP certifications issued by those states. Thus, the hunters selected for surveys in those states may not have been representative of all HIP-certified hunters.

During the first few years of the program we did not know how many HIP certifications to expect from each state because there were no state-specific estimates of migratory bird hunters available at the time. Now, however, we have six years of data (1999-2004, Appendix D) that enable us to identify suspect HIP certification totals. Because those totals are the basis for the expansion factors for our survey results, they have a significant effect on the statewide estimates.

In some cases, a large change in HIP certifications from one year to the next was simply the result of a change in licensing practices. For example, in 2002, Montana implemented an electronic licensing system that resulted in a large increase compared to 2001 (Appendix D), when the state required migratory bird hunters to fill out a separate paper HIP permit. In other cases (Florida and Michigan in 2001 and California, Colorado, Florida, Idaho, Mississippi, and Utah in 2002), it seemed apparent that a large number of the state's migratory bird hunters were not HIP-certified for some other, as yet unknown reason.

When it was obvious that a state's reported HIP certifications did not include many of the state's migratory bird hunters, we increased the state's expansion factor (total number of migratory bird hunters) to approximately the average of the years for which we received apparently reliable totals from that state (Appendix C2, see numbers in bold print). We believe that the resulting adjusted expansion factors provided much more accurate hunter activity and harvest estimates than unadjusted expansion factors.

Summaries of hunters' responses to the HIP screening questions regarding prior year hunting success are presented in Appendix E1-5. When we did not receive all of the HIP certification data, we adjusted the stratum counts to equal total HIP certifications (or estimated total migratory bird hunters), in proportion to the stratum counts for the data that we did receive. Absence of data in any category for a state indicates that the state did not have an open hunting season for that species/species group.

Sample Selection and Response Rates

We sampled hunters for the four survey types, at predetermined stratum-specific sampling rates, until the hunting seasons ended. The resulting stratum-specific sample sizes are presented in Appendix F1-5. Most of the sample sizes were adequate, but in some cases we did not receive enough of the state's name and address data within the prescribed time frame. This resulted in sample sizes that were smaller than expected for those states. There were also some stratification data coding discrepancies that resulted in a few inordinately large sample sizes (e.g., the 2002 snipe, rail, gallinule, and coot survey sample for Utah).

State-specific response rates for the waterfowl harvest surveys ranged from 47-80%, with an overall rate of 64% for 2001 and 62% for 2002 (Appendix G1). Response rates for the other 3 surveys were similar, at 63% (2001) and 62% (2002) for the dove and band-tailed pigeon surveys (Appendix G2), 68% (2001) and 64% (2002) for the woodcock surveys (Appendix G3), and 64% (both 2001 and 2002) for the snipe, rail, gallinule, and coot surveys (Appendix G4).

Waterfowl Hunter Activity and Harvest Estimates (Tables 1-8, Figures 1-3)

State-specific estimates of active hunters, days afield, seasonal harvest per hunter, and species-specific harvest estimates for ducks and geese are presented by flyway (Table 1A-E). Flyway-specific point estimates of total duck and goose harvest for Colorado, Montana, New Mexico, and Wyoming are shown in Table 2.

We estimated sea duck hunter activity and harvest separately from other ducks for states that had special sea duck seasons or regulations (Table 3). We also estimated brant hunter activity and harvest along the Atlantic and Pacific coasts separately (Table 4). Sea duck and brant harvest estimates are also shown in the species-specific estimates in Table 1, but they are not included in the estimates of birds bagged per active hunter that are shown there because active sea duck and brant hunters are not mutually exclusive from active duck and goose hunters. We estimated unretrieved kill at the flyway and national levels for ducks, geese, sea ducks, and brant (Table 5).

Estimates for special September duck seasons are given in Table 6, and Table 7 shows estimates of Canada goose harvest during special resident Canada goose seasons compared to regular season harvest. Table 8 summarizes the waterfowl harvest in Canada; those data were provided by the Canadian Wildlife Service, which conducts annual surveys similar to those conducted in the United States.

Long-term trends in duck harvest, goose harvest, and active waterfowl hunters since 1961 are shown in Figures 1-3. The curves are locally weighted regression (lowess) lines (Cleveland and Devlin 1988) that fit a pattern to the majority of the estimates and identify points that deviate from that pattern. The figures show lowess lines and point estimates from the previous national waterfowl harvest survey from 1961-2001 and point estimates from the HIP waterfowl harvest survey for 1999-2002. Federal Duck Stamp sales for 2001 and 2002 (Appendix H) and the long-term trends in Federal Duck Stamp sales (Appendix I) are also provided in this report.

Waterfowl Harvest Age and Sex Ratios (Tables 9-13, Figures 4-7)

We collected 83,031 duck wings and 20,138 goose tails and primary tips through the 2001 PCS, whereas the 2002 sample consisted of 92,477 duck wings and 22,245 goose tails and wing primary feather tips. State-specific mallard harvest age ratios are shown in Table 9, and Table 10 shows both overall and female-specific harvest age ratios of all duck species at the flyway and national levels. We also report state-specific mallard harvest sex ratios (Table 11), as well as flyway and national estimates of both overall and adult sex ratios for all duck species (Table 12). Table 13 gives age ratios for geese. Long-term trends in age ratios of mallards (Figure 4), northern pintails (*A. acuta*) (Figure 5), American black ducks (*A. rubripes*) and wood ducks (Figure 6), and lesser scaup (*Aythya affinis*) (Figure 7) are depicted by lowess lines.

Hunter Activity and Harvest Estimates for Other Migratory Game Birds (Tables 14-24)

Estimated numbers of active hunters, days afield, harvest, and birds harvested per hunter are given in Table 14 for mourning doves, Table 15 for white-winged doves (*Z. asiatica*) and Table 16 for band-tailed pigeons. Results of the woodcock harvest survey are presented in Table 17. Tables 18-21 give the estimates for common snipe (Table 18), rails (Table 19; all species combined), gallinules (Table 20), and American coots (Table 21). We also estimated unretrieved kill for these species/species groups (Tables 22 and 23).

We believe that the number of rail wings collected each year was too low to provide reliable annual species composition estimates, even at the flyway and national levels. Therefore, we used 5-year averages to obtain species-specific estimates of sora (*Porzana carolina*), Virginia rail (*Rallus limicola*), clapper rail (*R. longirostris*), and king rail (*R. elegans*) harvest (Table 24). The 2001 species estimates were based on 1,164 rail wings collected from 1997-2001, and the 2002 estimates were based on 1,169 wings collected from 1998-2002.

In addition to the 4 surveys described earlier, we conducted a sandhill crane (*Grus canadensis*) harvest survey only in Alaska. In 2001, we sampled 477 hunters, 376 of whom responded (79% response rate); the 2002 sample size was 620 hunters and the response rate was 71% (438 responses). We estimated that 900 ($\pm$ 51%) crane hunters spent 3,400 ($\pm$ 46%) days hunting cranes and harvested 1,100 ($\pm$ 88%) cranes in 2001. In 2002, 1,200 ($\pm$ 37%) hunters harvested 900 ($\pm$ 40%) sandhill cranes during 4,100 ($\pm$ 31%) days of crane hunting.

Mid-continent sandhill crane hunting activity and harvest in the Central Flyway states are estimated in a separate annual survey. Results of that survey for the 2001 and 2002 seasons were

reported in, “Sandhill crane harvest and hunter activity in the Central Flyway during the 2002-2003 hunting season” (Martin 2003).

ACKNOWLEDGMENTS

These surveys could not be conducted without the close cooperation of the state wildlife agencies, and we appreciate the efforts of all state personnel who were involved with the HIP at various levels. We particularly appreciate the cooperation of the following individuals who were responsible for getting the HIP sample frame for their state to the Service:

Stacey Norris, Alabama Department of Conservation and Natural Resources
Doris Kirchhofer, Alaska Department of Fish and Game
Amber Munig, Arizona Game and Fish Department
Alice Browning, Arkansas Game and Fish Commission
Richard Reyes and Colleen Cross, California Department of Fish and Game
Lyn Stevens, Colorado Division of Wildlife
Peter Good, Connecticut Department of Environmental Protection
Lynn Herman, Delaware Department of Natural Resources and Environmental Control
Carl Weathington and Susan Weaver, Florida Fish and Wildlife Conservation Commission
David Neyhart and Mike Hughes, Georgia Department of Natural Resources
Gary Rasco, Idaho Department of Fish and Game
Don Newton, Illinois Department of Natural Resources
John Olson, Indiana Department of Natural Resources
Sue Rhone, Iowa Department of Natural Resources
Vicki Shanley, Kansas Department of Wildlife and Parks
Rebecca Games, Kentucky Department of Fish and Wildlife Resources
Janis Landry, Louisiana Department of Wildlife and Fisheries
Vesta Billing and Danny Morris, Maine Department of Inland Fisheries and Wildlife
Bill Harvey, Maryland Department of Natural Resources
H W Heusmann, Massachusetts Division of Fisheries and Wildlife
Carol Goggins-Jones and Lisa Winters, Michigan Department of Natural Resources
Roger Lake and Margaret Dexter, Minnesota Department of Natural Resources
Terrell Chester and Curtis Thornhill, Mississippi Department of Wildlife, Fisheries and Parks
Sheila Theobald, Missouri Department of Conservation
Nancy Kraft, Montana Department of Fish, Wildlife and Parks
Kit Hams, Nebraska Game and Parks Commission
Patty Wagner, Nevada Department of Wildlife
Richard Cunningham, New Hampshire Fish and Game Department
Paulette Nelson, New Jersey Division of Fish and Wildlife
Tim Mitchusson, New Mexico Department of Game and Fish
Art Jacobsen, New York Department of Environmental Conservation
Jyothi Mandadi, North Carolina Wildlife Resources Commission
Jerry Gulke, North Dakota Game and Fish Department
Bill Page and Cheryl Allen, Ohio Department of Natural Resources
Rodney Derrick and Robert Taylor, Oklahoma Department of Wildlife Conservation

Brenda Gronsdahl and Valerie Finger, Oregon Department of Fish and Wildlife
Valerie Kazakavage, Pennsylvania Game Commission
Margaret McGrath, Rhode Island Division of Fish and Wildlife Resources
Derrell Shipes and Diane Lee, South Carolina Department of Natural Resources
Chuck Schleuter and Art Smith, South Dakota Game, Fish and Parks Department
Gary Clouse and Loy Fulford, Tennessee Wildlife Resources Agency
Mike Berger, Texas Parks and Wildlife Department
Tom Aldrich, Utah Division of Wildlife Resources
Sandy Barton, Vermont Fish and Wildlife Department
Ken Perry, Virginia Department of Game and Inland Fisheries
Tom Owens and Mike Keeling, Washington Department of Wildlife
Anne Johansen, West Virginia Department of Natural Resources
Brian Dhuey, Wisconsin Department of Natural Resources
Jean Cole, Wyoming Game and Fish Department

The Harvest Surveys Section's survey clerks (Barbara Martin, Pamela Mathias, Peggy Powell, Kim Zembower, Ellen Griffin-Pollard, and Robert Mack), mail clerk (Joe Duncan), and secretary (Susane Finucane) were also major contributors to this project.

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Table 1A. Estimates of waterfowl harvest and hunter activity in the Atlantic Flyway during the 2001 and 2002 hunting seasons.

	Connecticut		Delaware		Florida	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	11,768	13,619	15,198	19,880	1,471	748
Domestic Mallard	95	81	208	445	134	873
Black Duck	3,227	2,594	3,192	6,288	134	125
Mallard x Black Duck Hybrid	285	243	139	508	0	0
Mottled Duck	0	0	0	0	13,107	12,096
Gadwall	285	243	1,457	2,922	401	499
Wigeon	664	730	763	1,651	1,605	374
Green-winged Teal	1,234	567	12,908	10,480	11,502	22,197
Blue-winged/Cinnamon Teal	0	0	694	381	41,594	47,012
Northern Shoveler	0	0	1,041	1,842	8,961	4,489
Northern Pintail	95	81	1,319	2,350	2,675	1,496
Wood Duck	4,840	4,296	5,205	6,224	19,259	12,969
Redhead	0	81	0	64	2,407	125
Canvasback	95	0	0	0	0	0
Greater Scaup	0	0	278	64	1,872	499
Lesser Scaup	0	0	69	381	29,691	11,597
Ring-necked Duck	190	162	139	127	45,874	44,394
Goldeneyes	95	324	0	64	0	0
Bufflehead	380	486	1,527	2,032	401	624
Ruddy Duck	0	0	69	0	1,070	1,247
Long-tailed Duck	2,200	2,365	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	0	135	0	1,300	0	125
Hooded Merganser	190	243	69	572	2,274	1,746
Other Mergansers	759	649	555	64	134	125
Other Ducks	0	0	69	64	535	3,242
Total Duck Harvest	26,400±24%	26,900±22%	45,300±12%[c]	57,700±22%	185,100±32%	166,600±24%
Total Active Duck Hunters[a]	3,200±13%	2,800±15%	4,500±11%	4,700±10%	12,600±36%	13,100±27%
Total Duck Hunter Days Afield[a]	20,100±20%	18,800±19%	33,100±12%	35,800±13%	93,100±39%	103,800±34%
Seasonal Duck Harvest Per Hunter	8.3±28%	9.7±27%	10.1±17%	12.2±17%	14.7±49%	12.7±36%
Goose Species Composition						
Canada Goose	18,100	21,360	10,896	21,076	1,200	0
Snow Goose	0	40	20,140	14,723	0	0
Blue Goose	0	0	264	101	0	0
Ross's Goose	0	0	0	0	0	0
White-fronted Goose	0	0	0	0	0	0
Brant	300	800	300	1,600	0	0
Other Geese	0	0	0	0	0	0
Total Goose Harvest	18,400±28%	22,200±31%	31,600±16%	37,500±35%	1,200±146%	200±196%[d]
Total Active Goose Hunters[b]	2,900±14%	3,000±15%	4,800±9%	4,500±11%	800±138%	200±196%
Total Goose Hunter Days Afield[b]	17,700±20%	19,000±21%	28,100±14%	28,900±19%	1,500±138%	400±196%
Seasonal Goose Harvest Per Hunter	6.2±32%	7.5±34%	6.6±18%	8.3±36%	1.5±201%	1.0±277%
Active Waterfowl Hunters	4,600±10%	3,900±12%	5,900±9%	5,900±8%	12,600±36%	13,100±27%
Sample Sizes						
Duck Wings	295	338	647	889	1,384	1,336
Goose Tails	460	543	474	367	2	0

Table 1A. Estimates of waterfowl harvest and hunter activity in the Atlantic Flyway during the 2001 and 2002 hunting seasons.

	Georgia		Maine		Maryland	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	12,327	10,536	8,222	13,668	69,505	62,835
Domestic Mallard	193	152	197	0	4,104	4,496
Black Duck	193	227	6,154	8,436	14,033	20,806
Mallard x Black Duck Hybrid	0	0	443	747	1,721	1,568
Mottled Duck	193	227	0	0	0	0
Gadwall	3,852	3,335	0	0	3,839	3,659
Wigeon	2,119	455	49	160	5,693	3,659
Green-winged Teal	6,742	4,700	2,856	8,062	25,949	17,251
Blue-winged/Cinnamon Teal	5,971	1,592	492	160	6,090	1,882
Northern Shoveler	578	531	0	53	794	941
Northern Pintail	578	227	98	481	3,442	1,568
Wood Duck	62,793	26,303	7,681	6,353	18,402	14,010
Redhead	385	0	0	0	132	209
Canvasback	193	0	0	0	530	0
Greater Scaup	193	227	0	107	794	3,137
Lesser Scaup	5,393	3,714	0	107	2,648	18,715
Ring-necked Duck	9,438	4,624	640	1,602	1,192	4,077
Goldeneyes	0	0	739	374	397	1,046
Bufflehead	0	834	2,019	1,442	11,518	9,096
Ruddy Duck	770	303	0	0	1,192	2,196
Long-tailed Duck	0	0	869	1,532	6,462	5,908
Eiders	0	0	10,930	11,268	0	0
Scoters	0	0	3,402	3,501	10,438	7,192
Hooded Merganser	2,697	1,213	1,723	1,228	927	1,777
Other Mergansers	193	0	886	1,121	265	1,673
Other Ducks	0	0	0	0	132	0
Total Duck Harvest	114,800±35%	59,200±34%	47,400±31%	60,400±32%	190,200±14%	187,700±14%
Total Active Duck Hunters[a]	14,300±37%	10,700±40%	6,900±26%	6,000±25%	21,400±9%	17,300±8%
Total Duck Hunter Days Afield[a]	106,200±51%	49,400±29%	34,400±28%	36,300±30%	138,500±14%	107,300±11%
Seasonal Duck Harvest Per Hunter	8.0±51%	5.6±52%	6.9±40%	10.0±41%	8.9±16%	10.8±16%
Goose Species Composition						
Canada Goose	26,100	21,100	5,165	10,600	152,373	115,320
Snow Goose	0	0	35	0	35,227	11,367
Blue Goose	0	0	0	0	0	413
Ross's Goose	0	0	0	0	0	0
White-fronted Goose	0	0	0	0	0	0
Brant	0	0	0	0	800	700
Other Geese	0	0	0	0	0	0
Total Goose Harvest	26,100±47%	21,100±52%	5,200±51%	10,600±45%	188,400±15%	127,800±11%
Total Active Goose Hunters[b]	11,200±30%	8,700±34%	4,100±34%	3,800±33%	28,600±6%	21,800±6%
Total Goose Hunter Days Afield[b]	47,700±38%	43,500±48%	17,800±44%	18,600±44%	187,500±11%	141,300±9%
Seasonal Goose Harvest Per Hunter	2.3±56%	2.4±62%	1.3±61%	2.8±56%	6.6±16%	5.9±12%
Active Waterfowl Hunters	14,400±37%	10,800±40%	7,900±24%	7,700±23%	30,200±7%	27,600±4%
Duck Wings	596	781	864	975	1,343	1,721
Goose Tails	55	106	150	227	904	1,272

Table 1A. Estimates of waterfowl harvest and hunter activity in the Atlantic Flyway during the 2001 and 2002 hunting seasons.

	Massachusetts		New Hampshire		New Jersey	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	6,742	9,294	5,919	7,409	16,118	20,938
Domestic Mallard	59	87	38	80	69	810
Black Duck	4,039	4,363	1,697	2,483	13,617	12,650
Mallard x Black Duck Hybrid	505	349	151	481	1,112	1,184
Mottled Duck	0	0	0	0	0	0
Gadwall	119	87	0	0	486	1,309
Wigeon	89	44	0	160	417	1,371
Green-winged Teal	1,307	1,265	716	1,322	11,950	13,211
Blue-winged/Cinnamon Teal	0	0	38	40	208	62
Northern Shoveler	0	0	0	0	1,112	499
Northern Pintail	119	87	38	80	1,389	561
Wood Duck	3,000	2,923	4,185	4,165	5,002	4,175
Redhead	30	0	0	0	0	249
Canvasback	30	0	0	0	0	0
Greater Scaup	0	175	113	40	208	685
Lesser Scaup	0	305	38	120	69	499
Ring-necked Duck	149	218	113	40	278	1,059
Goldeneyes	59	87	0	200	69	312
Bufflehead	1,841	654	264	240	3,752	9,784
Ruddy Duck	0	0	0	0	417	499
Long-tailed Duck	298	0	222	0	1,429	0
Eiders	6,131	2,301	389	1,260	0	0
Scoters	1,071	1,499	889	540	1,071	2,600
Hooded Merganser	267	305	603	400	2,084	4,237
Other Mergansers	446	654	189	200	903	2,306
Other Ducks	0	0	0	40	139	0
Total Duck Harvest	26,300±14%	24,700±18%	15,600±18%	19,300±18%	61,900±16%	79,000±20%
Total Active Duck Hunters[a]	3,300±10%	3,100±11%	2,900±11%	2,600±13%	7,100±8%	7,300±8%
Total Duck Hunter Days Afield[a]	18,600±12%	21,800±15%	17,600±14%	17,200±16%	44,500±11%	48,000±14%
Seasonal Duck Harvest Per Hunter	8.0±17%	8.0±21%	5.3±21%	7.3±22%	8.7±18%	10.8±21%
Goose Species Composition						
Canada Goose	11,777	12,800	3,809	6,265	22,638	29,942
Snow Goose	23	0	68	35	6,662	5,253
Blue Goose	0	0	23	0	0	53
Ross's Goose	0	0	0	0	0	0
White-fronted Goose	0	0	0	0	0	0
Brant	900	700	0	0	6,800	9,800
Other Geese	0	0	0	0	0	53
Total Goose Harvest	12,700±26%	13,500±21%	3,900±24%	6,300±21%	36,100±26%	45,100±19%
Total Active Goose Hunters[b]	2,300±13%	2,300±12%	1,800±15%	2,200±14%	4,400±11%	4,500±11%
Total Goose Hunter Days Afield[b]	13,200±21%	14,100±17%	8,800±19%	13,600±19%	22,900±16%	25,400±16%
Seasonal Goose Harvest Per Hunter	5.4±29%	5.8±24%	2.2±29%	2.8±26%	8.2±29%	10.1±22%
Active Waterfowl Hunters	4,100±8%	3,700±9%	3,200±10%	3,100±12%	8,000±7%	8,400±6%
Sample Sizes						
Duck Wings	759	550	401	447	862	1,227
Goose Tails	563	372	171	179	633	873

Table 1A. Estimates of waterfowl harvest and hunter activity in the Atlantic Flyway during the 2001 and 2002 hunting seasons.

	New York		North Carolina		Pennsylvania	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	81,685	108,463	39,930	44,316	126,961	125,723
Domestic Mallard	913	1,023	2,735	1,680	3,123	2,093
Black Duck	18,180	26,367	3,464	4,780	13,899	15,307
Mallard x Black Duck Hybrid	2,241	1,972	729	388	1,562	1,701
Mottled Duck	0	0	365	0	0	0
Gadwall	1,826	2,556	7,111	10,465	1,093	1,570
Wigeon	3,321	3,652	12,216	10,724	1,405	1,570
Green-winged Teal	12,618	15,119	23,156	28,941	7,496	11,905
Blue-winged/Cinnamon Teal	1,411	803	6,746	2,972	1,874	1,308
Northern Shoveler	415	876	3,829	2,713	625	523
Northern Pintail	2,075	4,163	6,017	3,488	625	785
Wood Duck	27,477	26,732	84,601	71,190	73,241	61,488
Redhead	1,162	876	2,553	517	156	0
Canvasback	83	0	182	0	0	0
Greater Scaup	1,577	6,647	1,823	1,550	937	1,832
Lesser Scaup	913	3,652	49,593	31,396	2,186	3,532
Ring-necked Duck	2,656	4,528	8,752	11,887	2,342	1,177
Goldeneyes	3,570	5,989	0	0	312	916
Bufflehead	3,321	11,102	5,105	9,819	4,685	6,410
Ruddy Duck	166	146	2,917	904	468	1,177
Long-tailed Duck	1,616	4,293	0	0	156	262
Eiders	0	195	0	0	0	0
Scoters	6,284	3,512	1,459	517	937	392
Hooded Merganser	747	2,118	2,917	4,134	4,685	4,317
Other Mergansers	2,241	3,214	0	388	1,874	6,410
Other Ducks	0	0	0	129	156	0
Total Duck Harvest	176,500±9%	238,000±10%	266,200±31%	242,900±26%	250,800±32%	250,400±29%
Total Active Duck Hunters[a]	20,100±6%	20,500±6%	29,700±27%	23,700±32%	35,200±13%	32,000±15%
Total Duck Hunter Days Afield[a]	128,300±7%	134,200±8%	169,600±34%	159,200±34%	249,400±24%	178,900±22%
Seasonal Duck Harvest Per Hunter	8.8±11%	11.6±12%	9.0±41%	10.3±41%	7.1±34%	7.8±33%
Goose Species Composition						
Canada Goose	91,481	108,679	46,035	38,259	219,729	214,010
Snow Goose	4,772	3,121	365	270	5,895	1,865
Blue Goose	147	0	0	0	0	0
Ross's Goose	0	0	0	0	0	0
White-fronted Goose	0	0	0	0	0	0
Brant	6,600	7,200	4,700	6,000	125	124
Other Geese	0	0	0	270	251	0
Total Goose Harvest	103,000±11%	119,000±14%	51,100±38%	44,800±38%	226,000±17%	216,000±23%
Total Active Goose Hunters[b]	15,700±7%	15,500±6%	16,500±27%	16,000±32%	45,400±9%	47,000±10%
Total Goose Hunter Days Afield[b]	85,900±9%	97,600±11%	55,100±35%	58,800±42%	273,100±13%	258,100±16%
Seasonal Goose Harvest Per Hunter	6.5±13%	7.7±16%	3.1±47%	2.8±49%	5.0±19%	4.6±25%
Active Waterfowl Hunters	22,900±6%	24,200±5%	29,900±27%	24,200±31%	55,300±9%	53,200±11%
Sample Sizes						
Duck Wings	2,075	3,190	1,460	1,880	1,606	1,914
Goose Tails	1,374	1,684	254	290	1,802	1,737

Table 1A. Estimates of waterfowl harvest and hunter activity in the Atlantic Flyway during the 2001 and 2002 hunting seasons.

	Rhode Island		South Carolina		Vermont	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	1,438	988	21,408	23,562	9,168	14,052
Domestic Mallard	13	11	1,880	3,110	32	0
Black Duck	1,033	882	1,880	1,316	1,930	3,108
Mallard x Black Duck Hybrid	170	96	289	478	450	345
Mottled Duck	0	0	1,446	718	0	0
Gadwall	52	32	7,232	2,033	32	106
Wigeon	248	106	5,352	3,229	129	213
Green-winged Teal	327	255	18,081	15,549	1,222	1,859
Blue-winged/Cinnamon Teal	26	11	6,075	4,545	32	53
Northern Shoveler	0	11	3,472	1,674	0	53
Northern Pintail	65	21	434	478	257	292
Wood Duck	261	138	62,633	86,954	2,509	1,674
Redhead	0	11	434	0	32	0
Canvasback	0	0	145	0	0	0
Greater Scaup	157	584	145	718	193	27
Lesser Scaup	65	191	15,333	5,980	64	159
Ring-necked Duck	39	11	13,452	13,157	225	505
Goldeneyes	170	255	0	0	579	2,231
Bufflehead	797	425	1,013	1,076	129	292
Ruddy Duck	39	21	0	120	97	0
Long-tailed Duck	30	0	0	0	64	0
Eiders	1,386	727	0	0	32	0
Scoters	784	273	0	0	64	53
Hooded Merganser	288	170	5,352	5,143	97	106
Other Mergansers	1,111	1,881	145	239	161	770
Other Ducks	0	0	0	120	0	0
Total Duck Harvest	8,500±36%	7,100±26%	166,200±41%	170,200±49%	17,500±16%	25,900±23%
Total Active Duck Hunters[a]	1,000±18%	700±15%	15,200±26%	15,600±28%	1,700±27%	2,600±23%
Total Duck Hunter Days Afield[a]	7,300±28%	4,700±19%	108,700±38%	111,400±39%	13,300±18%	19,800±27%
Seasonal Duck Harvest Per Hunter	8.1±40%	10.7±31%	10.9±49%	10.9±56%	10.1±31%	9.8±32%
Goose Species Composition						
Canada Goose	3,700	3,600	16,000	27,600	4,367	6,450
Snow Goose	0	0	0	0	2,184	1,150
Blue Goose	0	0	0	0	0	0
Ross's Goose	0	0	0	0	0	0
White-fronted Goose	0	0	0	0	0	0
Brant	600	600	0	0	250	0
Other Geese	0	0	0	0	0	0
Total Goose Harvest	4,300±42%	4,200±21%	16,000±56%	27,600±34%	6,800±21%	7,600±33%
Total Active Goose Hunters[b]	800±23%	600±19%	4,800±32%	9,800±27%	2,100±22%	2,200±21%
Total Goose Hunter Days Afield[b]	5,400±41%	4,300±28%	20,300±36%	41,600±41%	9,400±23%	8,100±26%
Seasonal Goose Harvest Per Hunter	5.5±48%	6.7±28%	3.3±64%	2.8±44%	3.2±31%	3.5±39%
Active Waterfowl Hunters	1,300±15%	900±13%	16,100±27%	15,700±28%	2,300±27%	3,100±21%
Sample Sizes						
Duck Wings	555	607	1,149	1,423	544	975
Goose Tails	315	341	107	80	218	185

Table 1A. Estimates of waterfowl harvest and hunter activity in the Atlantic Flyway during the 2001 and 2002 hunting seasons.

	Virginia		West Virginia		Flyway Total	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	43,272	59,553	1,548	3,262	472,682	538,846
Domestic Mallard	857	867	0	64	14,651	15,870
Black Duck	9,104	15,226	113	512	95,889	125,469
Mallard x Black Duck Hybrid	1,714	1,927	16	96	11,527	12,084
Mottled Duck	0	0	0	0	15,111	13,041
Gadwall	5,998	10,985	0	0	33,785	39,803
Wigeon	3,535	4,336	32	32	37,637	32,466
Green-winged Teal	11,032	5,589	0	288	149,094	158,560
Blue-winged/Cinnamon Teal	964	385	145	128	72,362	61,335
Northern Shoveler	643	482	0	0	21,468	14,688
Northern Pintail	1,392	1,060	0	0	20,619	17,220
Wood Duck	21,315	19,369	1,081	1,855	403,484	350,818
Redhead	0	193	16	0	7,308	2,324
Canvasback	321	0	0	0	1,578	0
Greater Scaup	214	1,349	0	0	8,505	17,639
Lesser Scaup	5,141	5,107	32	0	111,237	85,457
Ring-necked Duck	4,392	9,058	16	0	89,887	96,626
Goldeneyes	107	385	0	0	6,097	12,183
Bufflehead	3,642	6,456	0	0	40,392	60,774
Ruddy Duck	0	675	0	0	7,206	7,288
Long-tailed Duck	6,700	547	0	0	20,045	14,905
Eiders	0	0	0	0	18,868	15,752
Scoters	0	7,653	0	0	26,399	29,292
Hooded Merganser	3,320	4,047	0	32	28,240	31,791
Other Mergansers	428	1,349	0	32	10,289	21,075
Other Ducks	107	0	0	0	1,139	3,595
Total Duck Harvest	124,200±13%	156,600±14%	3,000±45%	6,300±35%	1,725,900±9%[c]	1,778,900±8%
Total Active Duck Hunters[a]	18,100±10%	18,900±10%	600±39%	700±30%	197,800[e]	182,400[e]
Total Duck Hunter Days Afield[a]	90,300±12%	98,000±12%	2,300±29%	5,300±42%	1,275,500±9%	1,149,800±8%
Seasonal Duck Harvest Per Hunter	6.8±17%	8.3±17%	4.8±60%	9.3±46%		
Goose Species Composition						
Canada Goose	53,868	67,827	4,900	5,100	692,137	709,987
Snow Goose	1,353	983	0	0	76,724	38,808
Blue Goose	0	0	0	0	434	567
Ross's Goose	0	0	0	0	0	0
White-fronted Goose	0	0	0	0	0	0
Brant	3,500	5,900	0	0	24,875	33,424
Other Geese	80	89	0	0	330	412
Total Goose Harvest	58,800±13%	74,800±25%	4,900±44%	5,100±51%	794,500±7%	783,400±8%[d]
Total Active Goose Hunters[b]	16,700±10%	16,800±10%	1,100±33%	800±33%	164,100[e]	159,800[e]
Total Goose Hunter Days Afield[b]	75,700±13%	75,600±14%	5,000±47%	5,800±42%	875,000±6%	854,700±7%
Seasonal Goose Harvest Per Hunter	3.3±16%	4.1±27%	4.7±55%	6.3±60%		
Active Waterfowl Hunters	23,400±9%	24,000±8%	1,300±27%	1,100±25%	243,400[e]	230,600[e]
Sample Sizes						
Duck Wings	1,099	1,555	186	197	15,825	20,005
Goose Tails	715	812	181	188	8,378	9,256

Table 1B. Estimates of waterfowl harvest and hunter activity in the Mississippi Flyway during the 2001 and 2002 hunting seasons.

	Alabama		Arkansas		Illinois	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	54,401	46,850	770,762	570,803	232,580	215,745
Domestic Mallard	2,291	358	0	459	1,030	1,026
Black Duck	573	0	1,233	459	773	3,335
Mallard x Black Duck Hybrid	573	0	822	0	0	770
Mottled Duck	0	0	0	459	0	0
Gadwall	38,940	36,121	260,620	210,151	27,044	24,371
Wigeon	4,581	1,431	44,396	43,131	6,439	8,209
Green-winged Teal	6,872	3,219	137,709	106,911	26,787	22,832
Blue-winged/Cinnamon Teal	12,026	5,007	14,388	12,389	16,484	9,235
Northern Shoveler	2,291	2,503	71,938	39,002	14,939	4,361
Northern Pintail	573	1,073	24,664	20,648	6,697	513
Wood Duck	52,684	56,507	58,783	87,639	44,816	36,171
Redhead	0	0	1,644	0	1,288	1,026
Canvasback	573	0	411	0	0	0
Greater Scaup	0	358	0	0	0	770
Lesser Scaup	573	1,073	18,909	6,424	7,469	9,748
Ring-necked Duck	11,453	16,451	28,364	19,271	12,363	11,544
Goldeneyes	2,863	0	822	459	1,030	770
Bufflehead	2,863	1,073	4,111	1,835	5,409	3,335
Ruddy Duck	0	0	822	0	1,288	0
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	0	0	0	0	0	257
Hooded Merganser	573	3,576	3,289	7,800	3,606	1,283
Other Mergansers	0	0	0	0	258	0
Other Ducks	0	0	411	459	0	0
Total Duck Harvest	194,700±40%	175,600±42%	1,444,100±13%	1,128,300±13%	410,300±12%	355,300±15%
Total Active Duck Hunters	14,900±24%	14,900±24%	88,200±8%	81,800±9%	34,000±8%	32,900±9%
Total Duck Hunter Days Afield	120,000±34%	96,600±26%	740,600±11%	673,100±12%	345,800±10%	291,100±12%
Seasonal Duck Harvest Per Hunter	13.1±46%	11.8±48%	16.4±15%	13.8±15%	12.1±15%	10.8±17%
Goose Species Composition						
Canada Goose	13,500	13,700	7,659	11,772	64,019	67,551
Snow Goose	900	0	84,253	70,631	0	0
Blue Goose	0	0	62,232	41,692	341	420
Ross's Goose	0	0	14,361	13,243	0	0
White-fronted Goose	900	0	30,637	22,563	341	629
Brant	0	0	0	0	0	0
Other Geese	0	0	957	0	0	0
Total Goose Harvest	15,300±46%	13,700±50%	200,100±33%	159,900±36%	64,700±18%	68,600±19%
Total Active Goose Hunters	8,100±29%	6,800±32%	24,500±15%	19,200±17%	27,900±9%	25,500±10%
Total Goose Hunter Days Afield	42,800±39%	31,900±43%	122,600±25%	91,800±25%	230,800±13%	199,000±14%
Seasonal Goose Harvest Per Hunter	1.9±55%	2.0±60%	8.2±36%	8.3±40%	2.3±20%	2.7±22%
Active Waterfowl Hunters	14,900±24%	15,900±24%	89,000±8%	81,900±9%	41,100±7%	37,400±8%
Sample Sizes						
Duck Wings	340	491	3,513	2,459	1,593	1,385
Goose Tails	17	15	209	326	190	327

Table 1B. Estimates of waterfowl harvest and hunter activity in the Mississippi Flyway during the 2001 and 2002 hunting seasons.

	Indiana		Iowa		Kentucky	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	73,984	81,716	117,517	92,638	116,068	104,978
Domestic Mallard	389	486	292	179	1,244	420
Black Duck	3,505	3,162	292	0	4,974	6,719
Mallard x Black Duck Hybrid	389	486	0	0	1,244	0
Mottled Duck	0	0	0	0	0	0
Gadwall	6,620	7,539	12,278	18,957	12,021	12,597
Wigeon	779	730	4,385	5,723	2,073	2,100
Green-winged Teal	6,814	7,539	29,818	40,954	7,047	5,039
Blue-winged/Cinnamon Teal	5,062	1,702	49,404	48,286	3,316	5,039
Northern Shoveler	779	0	10,524	2,504	2,487	1,680
Northern Pintail	973	243	6,724	5,723	2,073	840
Wood Duck	13,434	20,915	45,603	42,384	30,261	28,974
Redhead	973	486	3,216	2,146	0	0
Canvasback	0	0	1,462	0	0	0
Greater Scaup	0	0	585	537	0	420
Lesser Scaup	584	1,702	8,185	6,080	1,244	7,558
Ring-necked Duck	4,673	2,189	3,508	3,934	2,073	1,680
Goldeneyes	195	0	0	894	1,244	0
Bufflehead	779	243	877	1,073	2,073	3,779
Ruddy Duck	0	243	292	537	0	0
Long-tailed Duck	0	0	0	179	0	0
Eiders	0	0	0	0	0	0
Scoters	0	0	0	0	0	0
Hooded Merganser	973	973	2,339	537	4,560	5,879
Other Mergansers	195	243	0	537	0	0
Other Ducks	0	0	0	0	0	0
Total Duck Harvest	121,100±15%	130,600±32%	297,300±13%	273,800±14%	194,000±34%	187,700±43%
Total Active Duck Hunters	18,200±14%	16,300±14%	25,100±8%	23,300±9%	22,300±24%	16,700±26%
Total Duck Hunter Days Afield	117,100±12%	117,500±18%	202,900±10%	179,100±13%	227,800±31%	169,500±31%
Seasonal Duck Harvest Per Hunter	6.7±21%	8.0±35%	11.9±15%	11.7±16%	8.7±41%	11.2±50%
Goose Species Composition						
Canada Goose	47,800	58,600	56,862	63,420	22,654	22,319
Snow Goose	0	0	3,599	1,079	686	0
Blue Goose	0	0	1,440	0	686	485
Ross's Goose	0	0	0	0	0	485
White-fronted Goose	0	0	0	0	1,373	2,911
Brant	0	0	0	0	0	0
Other Geese	0	0	0	0	0	0
Total Goose Harvest	47,800±18%	58,600±16%	61,900±22%	64,500±19%	25,400±43%	26,200±34%
Total Active Goose Hunters	16,400±13%	16,700±11%	16,100±10%	15,600±11%	14,200±30%	13,600±28%
Total Goose Hunter Days Afield	101,300±17%	110,200±16%	104,900±15%	109,100±15%	85,600±33%	141,600±44%
Seasonal Goose Harvest Per Hunter	2.9±22%	3.5±19%	3.8±24%	4.1±22%	1.8±52%	1.9±44%
Active Waterfowl Hunters	20,700±13%	19,800±12%	27,700±7%	25,300±8%	23,400±23%	18,200±25%
Sample Sizes						
Duck Wings	622	537	1,017	1,531	468	447
Goose Tails	258	145	172	239	37	54

Table 1B. Estimates of waterfowl harvest and hunter activity in the Mississippi Flyway during the 2001 and 2002 hunting seasons.

	Louisiana		Michigan		Minnesota	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	127,354	107,227	122,801	195,301	327,003	259,507
Domestic Mallard	0	0	578	513	664	0
Black Duck	0	421	6,555	9,496	332	1,736
Mallard x Black Duck Hybrid	378	0	1,157	2,053	332	0
Mottled Duck	30,656	22,877	0	0	0	0
Gadwall	308,451	185,964	3,856	6,159	17,263	44,264
Wigeon	46,741	28,070	5,783	5,389	16,599	21,264
Green-winged Teal	180,718	117,052	18,892	44,911	50,129	73,773
Blue-winged/Cinnamon Teal	288,203	164,350	4,820	3,336	130,801	121,942
Northern Shoveler	65,853	30,175	3,663	2,310	15,935	10,415
Northern Pintail	30,467	15,439	5,205	13,088	10,623	17,358
Wood Duck	70,017	68,070	27,568	39,522	105,903	125,848
Redhead	3,785	702	8,675	3,593	20,583	13,019
Canvasback	568	140	964	0	4,316	434
Greater Scaup	1,135	1,404	2,313	10,779	1,992	5,207
Lesser Scaup	59,419	53,473	8,482	16,168	36,850	46,434
Ring-necked Duck	43,145	34,386	5,398	16,168	85,652	88,527
Goldeneyes	189	0	4,434	9,496	8,300	15,189
Bufflehead	2,271	982	10,217	20,018	11,287	18,226
Ruddy Duck	0	140	1,542	513	664	2,170
Long-tailed Duck	0	0	193	257	0	0
Eiders	0	0	0	0	0	0
Scoters	0	0	386	513	996	0
Hooded Merganser	5,109	2,386	2,892	4,106	5,976	11,717
Other Mergansers	1,135	281	1,928	2,310	0	3,472
Other Ducks	1,703	561	0	0	0	0
Total Duck Harvest	1,267,300±15%	834,100±16%	248,300±22%	406,000±26%	852,200±9%	880,500±9%
Total Active Duck Hunters	56,900±12%	57,300±13%	36,200±16%	38,800±12%	91,500±7%	87,100±7%
Total Duck Hunter Days Afield	532,000±18%	413,600±15%	210,600±18%	260,500±16%	581,400±8%	568,400±10%
Seasonal Duck Harvest Per Hunter	22.3±20%	14.6±21%	6.9±28%	10.5±28%	9.3±11%	10.1±11%
Goose Species Composition						
Canada Goose	4,747	0	114,383	102,600	230,311	224,010
Snow Goose	40,828	15,450	217	0	341	0
Blue Goose	55,070	24,278	0	0	2,047	3,990
Ross's Goose	5,697	4,414	0	0	0	0
White-fronted Goose	75,009	80,558	0	0	0	0
Brant	0	0	0	0	0	0
Other Geese	949	0	0	0	0	0
Total Goose Harvest	182,300±35%	124,700±46%	114,600±24%	102,600±20%	232,700±12%	228,000±13%
Total Active Goose Hunters	20,900±19%	14,800±24%	29,500±16%	28,700±12%	67,600±8%	65,200±8%
Total Goose Hunter Days Afield	119,700±33%	104,600±36%	156,500±19%	138,300±14%	420,000±10%	398,900±10%
Seasonal Goose Harvest Per Hunter	8.7±40%	8.4±52%	3.9±29%	3.6±23%	3.4±14%	3.5±15%
Active Waterfowl Hunters	56,900±12%	58,200±13%	46,000±15%	47,400±10%	100,900±6%	100,000±7%
Sample Sizes						
Duck Wings	6,697	5,943	1,288	1,582	2,567	2,029
Goose Tails	192	113	528	606	682	400

Table 1B. Estimates of waterfowl harvest and hunter activity in the Mississippi Flyway during the 2001 and 2002 hunting seasons.

	Mississippi		Missouri		Ohio	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	107,403	94,493	322,317	124,707	68,847	92,508
Domestic Mallard	0	266	645	0	0	1,328
Black Duck	0	133	0	165	4,953	11,066
Mallard x Black Duck Hybrid	0	133	0	165	743	885
Mottled Duck	1,354	133	0	0	0	0
Gadwall	32,492	29,812	67,432	33,398	7,925	9,738
Wigeon	5,415	5,190	10,002	5,429	2,724	443
Green-winged Teal	15,569	17,967	40,975	18,426	4,705	12,393
Blue-winged/Cinnamon Teal	5,190	5,723	41,298	12,175	13,621	10,180
Northern Shoveler	6,543	9,982	24,521	7,403	1,238	4,426
Northern Pintail	3,385	4,392	16,777	4,607	743	2,213
Wood Duck	43,999	50,973	14,841	6,581	21,050	24,344
Redhead	677	133	1,613	823	495	443
Canvasback	0	0	0	0	248	0
Greater Scaup	226	133	323	165	0	1,770
Lesser Scaup	2,708	4,126	7,421	987	5,944	3,541
Ring-necked Duck	1,354	4,126	4,840	3,290	2,724	5,311
Goldeneyes	226	0	645	165	743	885
Bufflehead	677	266	323	494	3,467	5,311
Ruddy Duck	0	133	0	0	0	443
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	0	0	0	0	0	0
Hooded Merganser	3,385	8,252	3,226	823	1,734	1,328
Other Mergansers	0	0	0	0	248	443
Other Ducks	0	133	0	0	248	0
Total Duck Harvest	230,600±27%	236,500±31%	557,200±41%	219,800±13%	142,400±22%	189,000±43%
Total Active Duck Hunters	15,000±17%	14,200±24%	33,500±14%	20,600±26%	20,600±22%	24,300±23%
Total Duck Hunter Days Afield	119,700±19%	107,100±24%	299,300±24%	147,900±17%	167,000±23%	180,100±28%
Seasonal Duck Harvest Per Hunter	15.4±32%	16.6±40%	16.6±43%	10.7±29%	6.9±32%	7.8±48%
Goose Species Composition						
Canada Goose	5,000	6,363	64,948	23,541	104,800	105,043
Snow Goose	1,000	1,224	34,312	15,353	0	0
Blue Goose	500	979	15,931	11,515	0	0
Ross's Goose	500	245	3,268	1,791	0	0
White-fronted Goose	500	489	2,042	0	0	0
Brant	0	0	0	0	0	0
Other Geese	0	0	0	0	0	357
Total Goose Harvest	7,500±32%	9,300±80%	120,500±38%	52,200±29%	104,800±16%	105,400±22%
Total Active Goose Hunters	4,600±28%	2,900±56%	18,100±16%	12,200±20%	30,300±15%	28,900±16%
Total Goose Hunter Days Afield	15,500±42%	12,900±76%	104,300±25%	66,400±23%	204,900±18%	186,400±17%
Seasonal Goose Harvest Per Hunter	1.6±43%	3.3±97%	6.6±41%	4.3±35%	3.5±22%	3.6±27%
Active Waterfowl Hunters	15,100±16%	15,100±25%	37,400±13%	25,300±25%	26,700±20%	33,000±20%
Sample Sizes						
Duck Wings	1,022	1,777	1,727	1,336	575	427
Goose Tails	15	38	295	204	313	295

Table 1B. Estimates of waterfowl harvest and hunter activity in the Mississippi Flyway during the 2001 and 2002 hunting seasons.

	Tennessee		Wisconsin		Flyway Total	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	207,132	169,659	147,877	218,143	2,796,047	2,374,276
Domestic Mallard	0	1,964	336	0	7,470	6,999
Black Duck	5,938	5,105	2,689	6,001	31,816	47,796
Mallard x Black Duck Hybrid	349	393	1,344	600	7,331	5,485
Mottled Duck	0	0	0	0	32,010	23,469
Gadwall	44,710	25,527	6,049	17,103	845,701	661,701
Wigeon	12,225	5,105	10,755	12,302	172,897	144,517
Green-winged Teal	23,053	19,244	38,986	46,209	588,076	536,469
Blue-winged/Cinnamon Teal	8,034	785	35,625	39,608	628,270	439,758
Northern Shoveler	9,082	5,105	7,058	6,601	236,850	126,468
Northern Pintail	11,876	4,320	4,369	9,302	125,148	99,759
Wood Duck	52,744	39,273	52,429	68,714	634,131	695,915
Redhead	699	393	9,074	4,801	52,722	27,564
Canvasback	349	0	2,689	0	11,578	574
Greater Scaup	349	785	1,680	6,901	8,603	29,228
Lesser Scaup	6,986	4,713	6,049	20,104	170,824	182,132
Ring-necked Duck	6,637	11,782	18,485	20,404	230,667	239,065
Goldeneyes	699	0	2,016	7,802	23,406	35,658
Bufflehead	1,746	4,320	15,796	18,304	61,896	79,260
Ruddy Duck	0	0	0	300	4,609	4,479
Long-tailed Duck	0	0	0	0	193	435
Eiders	0	0	0	0	0	0
Scoters	0	1,178	1,344	600	2,726	2,548
Hooded Merganser	3,493	6,676	2,353	3,601	43,506	58,936
Other Mergansers	0	1,178	3,697	2,400	7,460	10,863
Other Ducks	0	393	0	0	2,362	1,546
Total Duck Harvest	396,100±55%	307,900±27%	370,700±13%	509,800±13%	6,726,300±7%	5,834,900±5%
Total Active Duck Hunters	26,500±43%	20,000±48%	62,400±9%	69,700±9%	545,100[e]	517,900[e]
Total Duck Hunter Days Afield	276,800±49%	230,100±41%	423,800±13%	450,500±9%	4,364,800±5%	3,885,000±5%
Seasonal Duck Harvest Per Hunter	15.0±70%	15.4±55%	5.9±16%	7.3±16%		
Goose Species Composition						
Canada Goose	52,900	75,852	63,289	95,594	852,872	870,364
Snow Goose	0	1,548	0	306	166,136	105,591
Blue Goose	0	0	411	0	138,657	83,358
Ross's Goose	0	0	0	0	23,826	20,179
White-fronted Goose	0	0	0	0	110,802	107,151
Brant	0	0	0	0	0	0
Other Geese	0	0	0	0	1,907	357
Total Goose Harvest	52,900±52%	77,400±50%	63,700±15%	95,900±15%	1,294,200±9%	1,187,000±9%
Total Active Goose Hunters	29,400±32%	38,100±31%	51,200±9%	60,000±8%	358,800[e]	348,200[e]
Total Goose Hunter Days Afield	230,100±43%	422,900±46%	276,300±13%	319,400±11%	2,215,400±7%	2,333,400±10%
Seasonal Goose Harvest Per Hunter	1.8±61%	2.0±59%	1.2±17%	1.6±17%		
Active Waterfowl Hunters	26,900±43%	22,600±48%	82,800±8%	93,100±7%	609,500[e]	593,200[e]
Sample Sizes						
Duck Wings	1,134	784	1,103	1,699	23,666	22,427
Goose Tails	97	50	155	313	3,160	3,125

Table 1C. Estimates of waterfowl harvest and hunter activity in the Central Flyway during the 2001 and 2002 hunting seasons.

	Colorado		Kansas		Nebraska	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	93,707	54,541	97,739	93,112	133,947	112,577
Domestic Mallard	71	0	0	0	0	0
Black Duck	0	0	0	0	0	0
Mallard x Black Duck Hybrid	0	0	0	0	0	0
Mottled Duck	0	0	0	0	0	0
Gadwall	8,770	5,825	19,154	36,572	13,535	21,212
Wigeon	9,972	10,711	6,265	13,032	6,378	14,967
Green-winged Teal	9,901	10,711	21,839	35,206	19,758	33,149
Blue-winged/Cinnamon Teal	4,243	5,168	11,815	12,191	22,091	16,712
Northern Shoveler	1,414	2,114	3,401	3,783	4,356	4,499
Northern Pintail	1,909	1,832	7,339	4,624	6,845	4,224
Wood Duck	2,051	1,362	3,938	3,153	2,334	3,489
Redhead	424	611	2,864	2,838	2,022	1,837
Canvasback	141	0	537	0	311	0
Greater Scaup	0	47	179	210	0	735
Lesser Scaup	424	1,644	895	1,997	933	3,489
Ring-necked Duck	1,202	1,127	2,685	5,044	2,334	3,030
Goldeneyes	1,273	1,832	895	525	156	826
Bufflehead	636	846	537	1,051	1,245	735
Ruddy Duck	71	282	0	0	311	184
Long-tailed Duck	0	47	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	0	0	0	0	0	92
Hooded Merganser	141	188	716	1,261	778	459
Other Mergansers	778	611	0	0	467	92
Other Ducks	71	0	0	0	0	92
Total Duck Harvest	137,200±17%	99,500±14%	180,800±18%	214,600±16%	217,800±10%	222,400±10%
Total Active Duck Hunters	17,500±12%	12,700±14%	16,300±14%	15,400±13%	18,400±9%	17,000±9%
Total Duck Hunter Days Afield	114,200±16%	67,800±17%	101,000±14%	102,700±14%	145,900±10%	136,100±12%
Seasonal Duck Harvest Per Hunter	7.8±21%	7.8±19%	11.1±23%	13.9±20%	11.8±14%	13.1±14%
Goose Species Composition						
Canada Goose	60,201	66,218	72,707	80,982	83,833	56,322
Snow Goose	7,724	11,237	6,924	18,221	11,527	8,697
Blue Goose	454	1,115	2,518	3,471	2,725	4,721
Ross's Goose	1,893	1,544	629	3,760	1,886	497
White-fronted Goose	227	86	4,721	8,966	629	663
Brant	0	0	0	0	0	0
Other Geese	0	0	0	0	0	0
Total Goose Harvest	70,500±13%	80,200±15%	87,500±26%	115,400±31%	100,600±16%	70,900±15%
Total Active Goose Hunters	16,800±12%	16,300±11%	15,700±13%	15,200±13%	18,100±8%	15,300±9%
Total Goose Hunter Days Afield	104,300±37%	91,800±15%	89,700±18%	79,800±15%	148,200±11%	129,000±13%
Seasonal Goose Harvest Per Hunter	4.2±18%	4.9±19%	5.6±29%	7.6±34%	5.6±18%	4.6±18%
Active Waterfowl Hunters	25,900±9%	22,200±10%	19,400±13%	18,400±12%	24,300±8%	21,200±8%
Sample Sizes						
Duck Wings	1,940	2,118	1,010	2,042	1,400	2,422
Goose Tails	931	935	278	399	480	856

Table 1C. Estimates of waterfowl harvest and hunter activity in the Central Flyway during the 2001 and 2002 hunting seasons.

	New Mexico		North Dakota		Oklahoma	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	26,453	24,683	242,147	226,961	92,830	121,683
Domestic Mallard	0	0	0	360	0	0
Black Duck	0	0	0	240	0	0
Mallard x Black Duck Hybrid	0	0	0	0	0	0
Mottled Duck	0	0	0	0	0	0
Gadwall	7,393	5,205	82,880	98,282	25,834	40,718
Wigeon	7,855	4,929	24,450	31,119	7,289	14,171
Green-winged Teal	7,508	3,982	13,399	33,642	14,578	25,980
Blue-winged/Cinnamon Teal	2,772	1,853	33,981	42,413	10,612	3,118
Northern Shoveler	2,426	1,538	17,957	19,464	1,394	3,873
Northern Pintail	2,772	1,025	21,272	17,181	3,752	2,078
Wood Duck	1,271	1,065	1,105	2,043	1,394	3,118
Redhead	809	118	13,951	5,767	2,037	2,551
Canvasback	0	0	4,973	120	214	0
Greater Scaup	116	0	138	120	0	189
Lesser Scaup	231	315	23,483	25,472	429	4,062
Ring-necked Duck	809	1,025	6,769	5,887	3,323	8,786
Goldeneyes	0	315	691	601	214	472
Bufflehead	231	513	2,210	2,884	429	472
Ruddy Duck	0	0	1,243	601	214	94
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	0	0	0	240	0	0
Hooded Merganser	116	39	276	601	858	1,039
Other Mergansers	231	434	0	481	0	94
Other Ducks	809	2,760	276	120	0	0
Total Duck Harvest	61,800±42%	49,800±41%	491,200±9%	514,600±9%	165,400±31%	232,500±33%
Total Active Duck Hunters	5,100±20%	4,400±30%	36,400±6%	34,400±6%	10,800±33%	14,700±27%
Total Duck Hunter Days Afield	29,900±25%	24,300±32%	188,000±8%	179,000±8%	67,700±32%	107,600±33%
Seasonal Duck Harvest Per Hunter	12.2±47%	11.4±51%	13.5±11%	15.0±11%	15.3±45%	15.8±42%
Goose Species Composition						
Canada Goose	3,285	3,143	116,309	109,262	16,048	27,906
Snow Goose	7,166	5,724	21,779	9,589	4,751	3,815
Blue Goose	299	0	19,346	10,557	2,006	1,526
Ross's Goose	10,451	2,020	2,896	528	1,373	1,962
White-fronted Goose	0	112	1,854	264	422	1,090
Brant	0	0	0	0	0	0
Other Geese	0	0	116	0	0	0
Total Goose Harvest	21,200±43%	11,000±64%	162,300±15%	130,200±15%	24,600±31%	36,300±35%
Total Active Goose Hunters	3,400±22%	3,400±28%	26,500±7%	23,600±8%	7,800±30%	7,300±30%
Total Goose Hunter Days Afield	14,600±28%	19,600±55%	131,700±9%	118,400±11%	30,500±36%	36,700±42%
Seasonal Goose Harvest Per Hunter	6.2±48%	3.3±70%	6.1±16%	5.5±17%	3.1±43%	4.9±46%
Active Waterfowl Hunters	6,500±18%	5,600±26%	39,800±5%	37,800±5%	11,500±32%	16,300±26%
Sample Sizes						
Duck Wings	535	1,263	3,556	4,283	1,543	2,461
Goose Tails	71	98	1,401	1,480	233	333

Table 1C. Estimates of waterfowl harvest and hunter activity in the Central Flyway during the 2001 and 2002 hunting seasons.

	South Dakota		Texas		Wyoming	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	154,993	117,085	300,903	232,687	29,208	24,912
Domestic Mallard	0	0	342	218	0	0
Black Duck	0	0	0	218	0	0
Mallard x Black Duck Hybrid	0	0	342	0	0	0
Mottled Duck	0	0	14,378	7,401	0	0
Gadwall	29,023	36,700	302,957	163,686	2,410	2,787
Wigeon	12,227	14,653	128,029	85,108	3,663	4,050
Green-winged Teal	22,477	26,019	216,349	130,601	3,904	3,484
Blue-winged/Cinnamon Teal	24,577	21,226	264,616	107,963	434	2,221
Northern Shoveler	16,302	9,449	85,581	41,357	289	1,132
Northern Pintail	12,474	9,312	79,077	19,590	675	610
Wood Duck	3,582	4,930	95,166	64,430	578	305
Redhead	7,287	959	63,672	14,148	145	523
Canvasback	371	0	7,189	1,088	96	0
Greater Scaup	0	411	1,369	1,959	0	44
Lesser Scaup	3,582	4,519	41,764	44,840	96	436
Ring-necked Duck	4,199	4,108	57,853	44,187	48	436
Goldeneyes	247	137	1,369	1,306	819	2,352
Bufflehead	1,606	1,506	7,189	2,612	193	261
Ruddy Duck	865	137	1,369	653	0	0
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	0	0	0	0	0	0
Hooded Merganser	247	0	6,162	6,312	0	87
Other Mergansers	247	411	685	1,088	241	261
Other Ducks	0	137	11,639	6,748	0	0
Total Duck Harvest	294,300±14%	251,700±14%	1,688,000±23%	978,200±24%	42,800±28%	43,900±19%
Total Active Duck Hunters	22,400±9%	19,200±10%	139,900±17%	103,400±22%	4,200±16%	4,400±15%
Total Duck Hunter Days Afield	150,000±12%	123,700±11%	721,000±20%	539,700±27%	26,600±36%	26,000±17%
Seasonal Duck Harvest Per Hunter	13.1±17%	13.1±17%	12.1±28%	9.5±33%	10.1±32%	9.9±24%
Goose Species Composition						
Canada Goose	163,926	131,274	123,859	96,286	15,000	16,000
Snow Goose	13,421	13,111	186,905	153,759	0	0
Blue Goose	9,586	10,621	49,097	31,349	0	0
Ross's Goose	1,917	664	47,424	38,813	0	0
White-fronted Goose	1,150	830	82,015	73,147	0	0
Brant	0	0	0	0	0	0
Other Geese	0	0	0	746	0	0
Total Goose Harvest	190,000±13%	156,500±16%	489,300±25%	394,100±34%	15,000±20%	16,000±48%
Total Active Goose Hunters	26,300±7%	22,400±8%	76,600±19%	66,600±22%	3,700±16%	4,000±16%
Total Goose Hunter Days Afield	172,800±10%	148,600±11%	217,400±23%	192,900±29%	22,300±21%	22,200±20%
Seasonal Goose Harvest Per Hunter	7.2±15%	7.0±18%	6.4±31%	5.9±40%	4.0±25%	4.0±50%
Active Waterfowl Hunters	31,700±7%	30,000±7%	167,500±16%	139,900±20%	6,900±11%	6,200±11%
Sample Sizes						
Duck Wings	2,383	1,838	4,931	4,494	888	1,008
Goose Tails	991	943	877	528	218	242

Table 1C. Estimates of waterfowl harvest and hunter activity in the Central Flyway during the 2001 and 2002 hunting seasons.

	Flyway Total	
Duck Species Composition	2001	2002
Mallard	1,171,926	1,008,243
Domestic Mallard	413	578
Black Duck	0	458
Mallard x Black Duck Hybrid	342	0
Mottled Duck	14,378	7,401
Gadwall	491,954	410,988
Wigeon	206,128	192,740
Green-winged Teal	329,713	302,774
Blue-winged/Cinnamon Teal	375,141	212,864
Northern Shoveler	133,120	87,210
Northern Pintail	136,116	60,477
Wood Duck	111,418	83,894
Redhead	93,211	29,351
Canvasback	13,832	1,208
Greater Scaup	1,802	3,714
Lesser Scaup	71,837	86,774
Ring-necked Duck	79,221	73,631
Goldeneyes	5,664	8,367
Bufflehead	14,275	10,879
Ruddy Duck	4,073	1,951
Long-tailed Duck	0	47
Eiders	0	0
Scoters	0	332
Hooded Merganser	9,294	9,987
Other Mergansers	2,648	3,472
Other Ducks	12,795	9,857
Total Duck Harvest	3,279,300±12%	2,607,200±10%
Total Active Duck Hunters	271,100[e]	225,500[e]
Total Duck Hunter Days Afield	1,544,300±10%	1,306,800±12%
Seasonal Duck Harvest Per Hunter		
Goose Species Composition		
Canada Goose	655,168	587,395
Snow Goose	260,197	224,153
Blue Goose	86,031	63,360
Ross's Goose	68,469	49,788
White-fronted Goose	91,018	85,158
Brant	0	0
Other Geese	116	746
Total Goose Harvest	1,161,000±11%	1,010,600±14%
Total Active Goose Hunters	194,900[e]	174,200[e]
Total Goose Hunter Days Afield	931,500±7%	839,000±8%
Seasonal Goose Harvest Per Hunter		
Active Waterfowl Hunters	333,400[e]	297,600[e]
Sample Sizes		
Duck Wings	18,186	21,929
Goose Tails	5,480	5,814

Table 1D. Estimates of waterfowl harvest and hunter activity in the Pacific Flyway during the 2001 and 2002 hunting seasons.

	Arizona		California		Idaho	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	13,811	8,732	307,911	191,277	106,695	131,631
Domestic Mallard	0	103	1,206	710	138	226
Black Duck	0	0	0	0	0	0
Mallard x Black Duck Hybrid	0	0	0	0	0	0
Mottled Duck	0	0	0	0	0	0
Gadwall	2,141	2,722	66,537	60,579	4,837	4,819
Wigeon	4,925	4,674	149,407	114,056	12,784	18,374
Green-winged Teal	9,101	5,958	203,886	203,453	8,292	11,070
Blue-winged/Cinnamon Teal	964	1,541	36,721	30,239	207	753
Northern Shoveler	1,285	1,900	113,562	88,180	1,244	3,163
Northern Pintail	2,355	565	91,201	67,885	2,764	3,238
Wood Duck	107	0	33,104	21,005	1,589	2,184
Redhead	0	514	4,385	4,160	138	678
Canvasback	214	0	6,687	609	0	0
Greater Scaup	0	0	6,248	4,262	0	452
Lesser Scaup	214	514	13,921	11,872	276	828
Ring-necked Duck	2,570	3,133	17,867	16,134	1,175	1,054
Goldeneyes	107	616	4,385	2,638	967	10,467
Bufflehead	749	1,284	5,371	7,509	138	2,109
Ruddy Duck	0	154	2,302	1,725	138	301
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	0	0	329	0	0	75
Hooded Merganser	0	0	1,754	203	207	226
Other Mergansers	214	154	110	0	207	151
Other Ducks	642	1,335	110	101	0	0
Total Duck Harvest	39,400±26%	33,900±20%	1,067,000±10%	826,600±10%	141,800±20%	191,800±19%
Total Active Duck Hunters	3,700±14%	4,100±14%	51,000±7%	39,400±8%	12,100±25%	17,500±15%
Total Duck Hunter Days Afield	28,000±22%	25,700±17%	476,600±9%	373,200±9%	72,000±15%	106,200±18%
Seasonal Duck Harvest Per Hunter	10.8±30%	8.2±24%	20.9±12%	21.0±13%	11.7±32%	11.0±24%
Goose Species Composition						
Canada Goose	3,723	2,059	30,666	31,403	64,595	44,255
Snow Goose	0	221	33,647	25,180	404	218
Blue Goose	0	0	213	0	0	0
Ross's Goose	338	221	13,203	13,024	101	0
White-fronted Goose	338	0	27,471	26,193	0	327
Brant	0	0	700	900	0	0
Other Geese	0	0	0	0	0	0
Total Goose Harvest	4,400±62%	2,500±11%	105,900±16%	96,700±16%	65,100±32%	44,800±23%
Total Active Goose Hunters	1,700±23%	1,300±25%	30,700±10%	27,200±12%	14,900±16%	12,000±16%
Total Goose Hunter Days Afield	10,500±33%	7,700±41%	228,500±14%	211,000±16%	91,600±21%	74,800±22%
Seasonal Goose Harvest Per Hunter	2.6±66%	1.9±41%	3.4±19%	3.6±19%	4.4±36%	3.7±28%
Active Waterfowl Hunters	4,100±13%	4,400±12%	52,600±7%	41,900±8%	17,000±23%	19,700±14%
Sample Sizes						
Duck Wings	368	660	9,734	8,146	2,052	2,547
Goose Tails	13	34	508	665	645	411

Table 1D. Estimates of waterfowl harvest and hunter activity in the Pacific Flyway during the 2001 and 2002 hunting seasons.

	Montana		Nevada		Oregon	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	94,828	77,128	13,126	18,693	145,060	180,239
Domestic Mallard	0	0	0	45	814	192
Black Duck	0	0	0	0	0	0
Mallard x Black Duck Hybrid	0	0	0	0	0	0
Mottled Duck	0	0	0	0	0	0
Gadwall	3,604	8,478	2,758	6,887	9,888	9,108
Wigeon	7,929	9,650	2,042	3,891	48,974	55,893
Green-winged Teal	4,005	8,202	10,395	5,948	30,012	41,513
Blue-winged/Cinnamon Teal	2,162	3,515	1,008	626	582	1,055
Northern Shoveler	721	2,206	2,758	3,488	14,308	10,354
Northern Pintail	1,602	3,722	2,387	2,102	18,496	18,024
Wood Duck	1,602	1,103	133	224	15,820	6,999
Redhead	400	1,447	106	402	116	383
Canvasback	240	69	80	0	582	96
Greater Scaup	0	138	0	89	4,188	8,533
Lesser Scaup	2,403	3,102	80	268	5,467	8,533
Ring-necked Duck	1,201	1,172	345	626	4,886	4,794
Goldeneyes	2,002	5,169	265	402	1,978	863
Bufflehead	160	965	451	760	9,655	8,149
Ruddy Duck	80	207	663	268	116	0
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	80	0	0	45	0	479
Hooded Merganser	240	207	0	45	1,396	767
Other Mergansers	240	620	106	89	1,163	1,726
Other Ducks	0	0	0	0	0	0
Total Duck Harvest	123,500±17%	127,100±11%	36,700±17%	44,900±23%	313,500±11%	357,700±13%
Total Active Duck Hunters	11,000±10%	14,700±10%	3,800±18%	3,900±18%	22,600±6%	21,900±6%
Total Duck Hunter Days Afield	72,900±16%	79,800±18%	26,000±27%	27,700±23%	167,500±9%	172,600±10%
Seasonal Duck Harvest Per Hunter	11.2±20%	8.6±15%	9.6±24%	11.5±29%	13.9±13%	16.3±15%
Goose Species Composition						
Canada Goose	46,726	49,621	5,948	6,293	46,269	58,083
Snow Goose	743	1,213	337	107	6,283	7,810
Blue Goose	0	0	0	0	0	0
Ross's Goose	319	280	215	0	0	0
White-fronted Goose	212	187	0	0	1,047	607
Brant	0	0	0	0	100	0
Other Geese	0	0	0	0	0	0
Total Goose Harvest	48,000±15%	51,300±16%	6,500±23%	6,400±20%	53,700±14%	66,500±17%
Total Active Goose Hunters	10,600±8%	13,800±9%	2,900±17%	2,900±19%	12,900±9%	12,400±9%
Total Goose Hunter Days Afield	59,600±13%	66,500±13%	14,900±30%	13,000±22%	71,100±12%	74,700±14%
Seasonal Goose Harvest Per Hunter	4.5±17%	3.7±18%	2.3±29%	2.2±27%	4.2±17%	5.3±19%
Active Waterfowl Hunters	14,700±7%	21,200±8%	4,500±16%	4,700±16%	23,900±6%	23,400±6%
Sample Sizes						
Duck Wings	1,542	1,844	1,384	1,004	2,695	3,731
Goose Tails	452	550	212	120	563	877

Table 1D. Estimates of waterfowl harvest and hunter activity in the Pacific Flyway during the 2001 and 2002 hunting seasons.

	Utah		Washington		Flyway Total	
Duck Species Composition	2001	2002	2001	2002	2001	2002
Mallard	72,777	55,830	256,081	229,310	1,010,289	892,841
Domestic Mallard	86	97	360	69	2,604	1,442
Black Duck	0	0	0	0	0	0
Mallard x Black Duck Hybrid	0	49	0	0	0	49
Mottled Duck	0	0	0	0	0	0
Gadwall	16,669	14,700	13,847	11,150	120,281	118,444
Wigeon	13,146	13,775	67,257	62,470	306,464	282,783
Green-winged Teal	31,018	32,174	27,694	31,720	324,403	340,038
Blue-winged/Cinnamon Teal	1,375	7,204	270	693	43,289	45,625
Northern Shoveler	6,358	18,837	5,934	8,449	146,170	136,578
Northern Pintail	12,888	10,222	16,455	13,436	148,147	119,194
Wood Duck	258	146	2,877	3,671	55,490	35,330
Redhead	2,062	1,947	4,496	1,385	11,704	10,917
Canvasback	1,031	0	809	69	9,642	843
Greater Scaup	344	243	4,586	5,541	15,365	19,258
Lesser Scaup	1,633	3,505	5,845	3,601	29,839	32,223
Ring-necked Duck	1,890	1,168	8,362	6,510	38,296	34,591
Goldeneyes	2,835	9,394	2,518	2,355	15,057	31,906
Bufflehead	1,976	2,190	9,351	3,809	27,852	26,775
Ruddy Duck	2,062	292	90	0	5,452	2,948
Long-tailed Duck	0	0	0	416	0	416
Eiders	0	0	0	0	0	0
Scoters	0	49	1,618	2,909	2,027	3,557
Hooded Merganser	86	0	1,079	1,385	4,762	2,832
Other Mergansers	1,804	730	1,169	485	5,014	3,955
Other Ducks	0	49	0	69	752	1,555
Total Duck Harvest	170,300±21%	172,600±15%	430,700±16%	389,500±14%	2,322,900±6%	2,144,100±6%
Total Active Duck Hunters	15,900±13%	16,000±16%	26,100±13%	24,000±10%	146,200[e]	141,500[e]
Total Duck Hunter Days Afield	114,800±20%	95,600±15%	200,000±12%	181,800±15%	1,157,900±5%	1,062,600±5%
Seasonal Duck Harvest Per Hunter	10.7±25%	10.8±22%	16.5±21%	16.2±17%		
Goose Species Composition						
Canada Goose	17,810	20,653	56,526	50,085	272,263	262,452
Snow Goose	90	0	3,574	6,730	45,078	41,479
Blue Goose	0	0	0	0	213	0
Ross's Goose	0	0	0	61	14,176	13,585
White-fronted Goose	0	123	0	424	29,069	27,861
Brant	0	0	1,100	100	1,900	1,000
Other Geese	0	123	0	0	0	123
Total Goose Harvest	17,900±27%	20,900±21%	61,200±21%	57,400±15%	362,700±9%	346,500±7%
Total Active Goose Hunters	10,900±11%	10,300±13%	14,600±13%	13,500±11%	99,300[e]	99,400[e]
Total Goose Hunter Days Afield	68,300±15%	66,300±18%	88,600±20%	62,300±14%	633,100±7%	576,400±8%
Seasonal Goose Harvest Per Hunter	1.6±29%	2.0±25%	4.2±25%	4.2±19%		
Active Waterfowl Hunters	17,700±12%	16,300±15%	28,600±12%	26,400±9%	169,200[e]	164,100[e]
Sample Sizes						
Duck Wings	1,982	3,546	4,790	5,624	24,547	27,102
Goose Tails	199	339	753	951	3,345	3,947

Table 1E. Estimates of waterfowl harvest and hunter activity in Alaska and the entire United States during the 2001and 2002 hunting seasons.

	Alaska		United States Total	
Duck Species Composition	2001	2002	2001	2002
Mallard	27,711	19,541	5,478,655	4,833,747
Domestic Mallard	0	0	25,138	24,889
Black Duck	0	0	127,705	173,723
Mallard x Black Duck Hybrid	0	0	19,201	17,617
Mottled Duck	0	0	61,498	43,911
Gadwall	1,946	1,170	1,493,668	1,232,106
Wigeon	16,960	14,312	740,086	666,817
Green-winged Teal	10,287	7,500	1,401,573	1,345,341
Blue-winged/Cinnamon Teal	278	482	1,119,340	760,064
Northern Shoveler	2,502	3,991	540,112	368,935
Northern Pintail	11,585	11,215	441,615	307,865
Wood Duck	0	0	1,204,524	1,165,958
Redhead	0	206	164,945	70,363
Canvasback	0	344	36,631	2,970
Greater Scaup	371	757	34,646	70,596
Lesser Scaup	463	1,307	384,200	387,893
Ring-necked Duck	463	1,239	438,534	445,152
Goldeneyes	1,112	5,160	51,337	93,274
Bufflehead	1,019	1,376	145,435	179,065
Ruddy Duck	0	0	21,339	16,665
Long-tailed Duck	0	0	20,238	15,803
Eiders	0	3,235	18,868	18,987
Scoters	2,900	0	34,053	35,729
Hooded Merganser	0	0	85,802	103,546
Other Mergansers	0	0	25,412	39,365
Other Ducks	0	2,265	17,047	18,817
Total Duck Harvest	77,600±12%	74,100±9%	14,132,000±5%[c]	12,439,200±4%
Total Active Duck Hunters[a]	5,700±5%	5,600±5%	1,165,900[e]	1,072,900[e]
Total Duck Hunter Days Afield[a]	28,200±9%	29,100±8%	8,370,600±4%	7,433,200±4%
Seasonal Duck Harvest Per Hunter	13.6±14%	13.3±10%		
Goose Species Composition				
Canada Goose	6,009	4,875	2,478,450	2,435,075
Snow Goose	0	329	548,135	410,360
Blue Goose	0	0	225,335	147,285
Ross's Goose	0	66	106,471	83,618
White-fronted Goose	491	329	231,380	220,499
Brant	500	400	27,275	34,824
Other Geese	0	0	2,353	1,639
Total Goose Harvest	7,000±21%	6,000±17%	3,619,400±5%	3,333,500±6%[d]
Total Active Goose Hunters[b]	2,500±11%	2,200±10%	819,600[e]	777,800[e]
Total Goose Hunter Days Afield[b]	9,400±15%	10,300±15%	4,664,400±4%	4,613,900±5%
Seasonal Goose Harvest Per Hunter	2.9±24%	2.7±20%		
Active Waterfowl Hunters	6,100±5%	6,000±4%	1,355,500[e]	1,285,500[e]
Sample Sizes				
Duck Wings	807	1,014	83,031	92,477
Goose Tails	68	103	20,431	22,245

[a] Duck hunter statistics do not include sea duck hunter statistics for states with special sea duck seasons: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Virginia, and Alaska. (Refer to Table 3.)

[b] Goose hunter statistics do not include brant hunter statistics for coastal states with brant seasons: Connecticut, Delaware, Maryland, Massachusetts, New Jersey, New York, North Carolina, Rhode Island, Virginia, California, Oregon, Washington, and Alaska. (Refer to Table 4.)

[c] Harvest estimate contains 400 sea ducks harvested in Delaware for which there were no species composition estimates from the Parts Collection Survey.

[d] Harvest estimate contains 200 geese harvested in Florida for which there were no species composition estimates from the Parts Collection Survey.

[e] Hunter number estimates at the flyway and national levels may be biased high because the HIP sample frames are state-specific; therefore hunters are counted twice if they hunt in more than one state. Variance inestimable.

Table 2. Flyway-specific point estimates of duck and goose harvest in Colorado, Montana, New Mexico, and Wyoming during the 2001 and 2002 hunting seasons.

	2001		2002	
	Central Flyway	Pacific Flyway	Central Flyway	Pacific Flyway
Duck Harvest				
Colorado	121,000	16,200	83,200	16,300
Montana	37,700	85,800	34,500	92,600
New Mexico	55,000	6,800	41,800	8,000
Wyoming	36,400	6,400	41,300	2,600
Goose Harvest				
Colorado	65,400	5,100	76,100	4,100
Montana	19,500	28,500	30,900	20,400
New Mexico	19,700	1,500	8,900	2,100
Wyoming	13,500	1,500	15,500	500

Table 3. Estimates of sea duck harvest and hunter activity for states with sea duck seasons and zones during the 2001 and 2002 hunting seasons.

	Harvest[a]		Active Hunters		Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	2001	2002	2001	2002	2001	2002	2001	2002
Connecticut	2,200 ± 47%	2,500 ± 103%	400 ± 40%	400 ± 85%	1,800 ± 43%	1,800 ± 102%	5.0 ± 62%	7.2 ± 134%
Delaware	400 ± 74%	1,300 ± 71%	200 ± 66%	300 ± 46%	200 ± 67%	800 ± 65%	2.5 ± 99%	4.7 ± 84%
Maine	15,200 ± 67%	16,300 ± 53%	2,000 ± 62%	2,500 ± 51%	5,500 ± 62%	13,600 ± 86%	7.4 ± 91%	6.5 ± 74%
Maryland	16,900 ± 43%	13,100 ± 31%	2,900 ± 28%	2,400 ± 24%	7,500 ± 40%	6,000 ± 36%	5.8 ± 51%	5.5 ± 39%
Massachusetts	7,500 ± 44%	3,800 ± 30%	900 ± 26%	700 ± 26%	3,500 ± 34%	2,200 ± 29%	8.6 ± 51%	5.7 ± 40%
New Hampshire	1,500 ± 59%	1,800 ± 69%	200 ± 45%	300 ± 46%	1,100 ± 63%	800 ± 53%	6.8 ± 75%	6.1 ± 83%
New Jersey	2,500 ± 64%	2,600 ± 64%	400 ± 45%	600 ± 41%	1,300 ± 51%	1,400 ± 46%	5.7 ± 78%	4.6 ± 76%
New York	7,900 ± 31%	8,000 ± 44%	1,500 ± 25%	1,300 ± 27%	6,700 ± 30%	7,100 ± 46%	5.4 ± 40%	6.4 ± 52%
Rhode Island	2,200 ± 65%	1,000 ± 58%	300 ± 39%	100 ± 35%	1,300 ± 58%	600 ± 53%	7.7 ± 75%	7.5 ± 68%
Virginia	6,700 ± 54%	8,200 ± 46%	2,100 ± 30%	2,100 ± 30%	4,700 ± 35%	4,800 ± 34%	3.2 ± 62%	3.8 ± 55%
Atlantic Flyway Total	62,900 ± 22%	58,600 ± 20%	11,000[c]	10,500[c]	33,600 ± 17%	38,900 ± 32%		
Alaska[b]	2,900 ± 54%	5,500 ± 40%	500 ± 28%	800 ± 21%	2,200 ± 44%	3,300 ± 27%	5.3 ± 61%	6.7 ± 45%
U.S. Total[b]	65,800 ± 21%	64,000 ± 18%	11,500[c]	11,400[c]	35,800 ± 16%	42,200 ± 30%		

[a] Sea ducks include Long-tailed Ducks, Common Eiders, King Eiders, Black Scoters, Whited-winged Scoters, and Surf Scoters.

[b] In addition to the aforementioned, sea ducks also include Harlequin Ducks, Common Mergansers, and Red-breasted Mergansers in Alaska.

[c] Hunter number estimates at the management unit and national levels may be biased high because the HIP sample frames are state-specific; therefore hunters are counted twice if they hunt in more than one state. Variance inestimable.

Table 4. Estimates of Brant harvest and hunter activity along the Atlantic and Pacific coasts during the 2001 and 2002 hunting seasons.

	Harvest		Active Hunters		Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	2001	2002	2001	2002	2001	2002	2001	2002
Connecticut	300 ± 76%	800 ± 134%	200 ± 59%	300 ± 85%	400 ± 70%	1,000 ± 97%	1.9 ± 96%	2.8 ± 159%
Delaware	300 ± 63%	1,600 ± 38%	100 ± 57%	400 ± 37%	400 ± 59%	1,000 ± 40%	2.5 ± 85%	4.1 ± 53%
Maryland	800 ± 109%	700 ± 66%	200 ± 110%	400 ± 60%	700 ± 93%	2,300 ± 79%	3.3 ± 155%	1.6 ± 89%
Massachusetts	900 ± 42%	700 ± 77%	400 ± 38%	300 ± 52%	1,200 ± 37%	700 ± 60%	2.1 ± 56%	2.8 ± 93%
New Jersey	6,800 ± 29%	9,800 ± 28%	1,700 ± 22%	1,700 ± 21%	6,100 ± 27%	6,800 ± 25%	4.0 ± 36%	5.9 ± 35%
New York	6,600 ± 29%	7,200 ± 29%	1,400 ± 23%	1,700 ± 23%	10,600 ± 43%	9,700 ± 29%	4.6 ± 37%	4.3 ± 37%
North Carolina	4,700 ± 108%	6,000 ± 145%	1,200 ± 73%	1,400 ± 88%	9,600 ± 95%	6,300 ± 131%	3.9 ± 131%	4.4 ± 169%
Rhode Island	600 ± 74%	600 ± 56%	200 ± 62%	100 ± 53%	700 ± 56%	500 ± 46%	2.7 ± 97%	4.2 ± 77%
Virginia	3,500 ± 40%	5,900 ± 31%	1,700 ± 31%	1,800 ± 30%	4,900 ± 32%	5,200 ± 52%	2.0 ± 50%	3.2 ± 44%
Atlantic Flyway Total	24,500 ± 25%	33,400 ± 29%	7,200[a]	8,100[a]	34,600 ± 30%	33,400 ± 28%		
California	700 ± 107%	900 ± 99%	200 ± 78%	300 ± 72%	1,000 ± 102%	1,300 ± 81%	3.2 ± 132%	2.9 ± 122%
Oregon	<50±188%	0	<50±133%	<50±189%	100 ± 133%	100 ± 189%	0.5 ± 231%	0
Washington	1,100 ± 109%	100 ± 194%	600 ± 73%	200 ± 112%	1,200 ± 79%	200 ± 119%	1.9 ± 131%	0.3 ± 224%
Pacific Flyway Total	1,800 ± 77%	900 ± 94%	800[a]	500[a]	2,300 ± 60%	1,700 ± 68%		
Alaska	500 ± 49%	400 ± 32%	300 ± 41%	200 ± 32%	1,200 ± 45%	800 ± 50%	1.9 ± 63%	1.9 ± 45%
U.S. Total	26,900 ± 23%	34,700 ± 28%	8,400[a]	8,800[a]	38,200 ± 28%	35,900 ± 27%		

[a] Hunter number estimates at the management unit and national levels may be biased high because the HIP sample frames are state-specific; therefore hunters are counted twice if they hunt in more than one state. Variance inestimable.

Table 5. Estimates of retrieved and unretrieved kill of waterfowl during the 2001 and 2002 hunting seasons.

	Ducks		Geese		Sea ducks		Brant	
Flyway	2001	2002	2001	2002	2001	2002	2001	2002
Atlantic Flyway								
Retrieved kill	1,662,800 ± 9%	1,720,100 ± 8%	770,000 ± 7%	750,300 ± 8%	62,900 ± 22%	58,600 ± 20%	24,500 ± 25%	33,400 ± 29%
Unretrieved kill	303,000 ± 8%	296,700 ± 8%	66,400 ± 9%	55,100 ± 10%	13,600 ± 14%	13,100 ± 14%	1,800 ± 17%	5,300 ± 63%
Mississippi Flyway								
Retrieved kill	6,726,400 ± 7%	5,834,900 ± 5%	1,294,100 ± 9%	1,187,000 ± 9%				
Unretrieved kill	1,011,300 ± 6%	852,100 ± 4%	111,000 ± 8%	104,500 ± 9%				
Central Flyway								
Retrieved kill	3,279,200 ± 12%	2,607,100 ± 10%	1,161,000 ± 11%	1,010,600 ± 14%				
Unretrieved kill	443,000 ± 10%	320,500 ± 9%	112,700 ± 9%	96,200 ± 9%				
Pacific Flyway								
Retrieved kill	2,322,900 ± 6%	2,144,100 ± 6%	360,700 ± 9%	345,400 ± 7%			1,800 ± 77%	900 ± 94%
Unretrieved kill	287,500 ± 5%	267,500 ± 6%	36,700 ± 9%	34,100 ± 10%			0	100 ± 75%
United States								
Retrieved kill	14,066,000 ± 5%	12,375,000 ± 4%	3,592,400 ± 5%	3,298,900 ± 6%	65,800 ± 21%	64,000 ± 18%	26,900 ± 23%	34,700 ± 28%
Unretrieved kill	2,052,900 ± 4%	1,744,800 ± 3%	327,400 ± 4%	290,400 ± 5%	14,000 ± 14%	13,900 ± 13%	1,900 ± 16%	5,400 ± 61%

Table 6. Harvest estimates for special September teal/duck seasons in 2001 and 2002.

	Harvest										Number of	
	Green-winged Teal		Blue-winged/Cinnamon Teal		Wood Duck		Other Ducks		Total Duck Harvest		Wings Received	
State	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
September Teal Season												
Delaware	1,874	889	416	64	0	0	0	0	2,290	953	33	15
Georgia	2,119	0	3,274	1,289	0	0	0	0	5,393	1,289	28	17
Maryland	3,442	836	3,839	1,255	0	0	132	0	7,414	2,091	56	20
North Carolina	0	258	1,459	258	0	0	0	0	1,459	517	8	4
South Carolina	0	0	1,880	837	289	0	0	0	2,170	837	15	7
Virginia	214	96	321	193	0	0	0	0	536	289	5	3
Subtotal	7,649	2,080	11,191	3,895	289	0	132	0	19,261	5,975	145	66
Alabama	573	0	11,453	4,292	0	0	573	0	12,598	4,292	22	12
Arkansas	822	1,377	12,743	8,718	0	0	0	0	13,565	10,095	33	22
Illinois	1,288	257	15,196	5,644	515	0	0	0	16,999	5,900	66	23
Indiana	389	486	3,310	973	0	0	0	0	3,699	1,459	19	6
Louisiana	4,920	842	155,550	65,122	0	0	378	0	160,849	65,964	850	470
Mississippi	0	0	4,738	2,662	0	0	0	0	4,738	2,662	21	20
Missouri	3,549	987	40,330	10,858	323	0	0	0	44,202	11,846	137	72
Ohio	495	1,770	12,135	8,852	0	0	0	0	12,630	10,623	51	24
Subtotal	12,036	5,719	255,456	107,121	838	0	951	0	269,281	112,840	1,199	649
Colorado	1,273	470	1,132	470	0	0	0	0	2,405	940	34	20
Kansas	1,790	3,783	10,741	8,723	0	0	0	0	12,531	12,506	70	119
Nebraska	1,089	1,653	10,423	4,775	0	0	0	0	11,512	6,428	74	70
New Mexico	1,386	670	1,617	1,065	0	0	0	0	3,003	1,735	26	44
Oklahoma	1,715	1,039	10,183	2,645	0	0	0	189	11,899	3,873	111	41
Texas	20,882	8,924	218,060	62,035	0	0	0	0	238,942	70,960	698	326
Subtotal	28,135	16,540	252,156	79,713	0	0	0	189	280,292	96,441	1,013	620
Total	47,820	24,339	518,803	190,729	1,127	0	1,084	189	568,834	215,257	2,357	1,335
September Duck Season												
Florida	0	0	8,025	9,228	3,210	3,616	401	0	11,636	12,844	87	103
Kentucky	0	0	2,487	5,039	16,581	21,415	0	0	19,068	26,454	46	63
Tennessee	0	0	7,684	785	19,561	13,746	0	0	27,245	14,531	78	37
Total	0	0	18,196	15,052	39,352	38,777	401	0	57,949	53,830	211	203
U.S. Total	47,820	24,339	536,999	205,781	40,479	38,777	1,485	189	626,783	269,087	2,568	1,538

Table 7. Estimates of the number of Canada geese harvested during the special September, regular, and special late seasons during the 2001 and 2002 hunting seasons.

	September		Regular		Late		Total	
State / Flyway	2001	2002	2001	2002	2001	2002	2001	2002
Connecticut	4,800	4,000	13,100	16,000	200	1,400	18,100	21,400
Delaware	4,300	6,200	6,600	14,900	---	---	10,900	21,100
Florida	---	0	1,200	0	---	---	1,200	0
Georgia	---	6,600	26,100	14,500	---	---	26,100	21,100
Maine	2,100	3,000	3,100	7,600	---	---	5,200	10,600
Maryland	27,100	14,800	112,800	100,500	12,500	---	152,400	115,300
Massachusetts	2,300	2,800	6,500	8,700	3,000	1,300	11,800	12,800
New Hampshire	1,400	1,500	2,400	4,800	---	---	3,800	6,300
New Jersey	10,000	11,800	10,000	16,200	2,600	1,900	22,600	29,900
New York	49,300	48,200	41,500	60,500	700	0	91,500	108,700
North Carolina	30,300	20,100	15,700	18,200	---	---	46,000	38,300
Pennsylvania	111,900	92,500	75,100	102,000	32,700	19,500	219,700	214,000
Rhode Island	1,300	1,000	2,000	2,400	400	200	3,700	3,600
South Carolina	5,800	4,800	10,200	22,800	---	---	16,000	27,600
Vermont	3,100	3,700	1,300	2,700	---	---	4,400	6,400
Virginia	14,100	13,600	22,400	38,200	17,400	16,000	53,900	67,800
West Virginia	2,000	2,000	2,900	3,100	---	---	4,900	5,100
Atlantic Flyway Total	269,800	236,600	352,900	433,100	69,500	40,300	692,200	710,000
Alabama	900	4,600	12,600	9,100	---	---	13,500	13,700
Arkansas	---	---	7,700	11,800	---	---	7,700	11,800
Illinois	8,900	5,200	55,100	62,400	---	---	64,000	67,600
Indiana	27,600	34,400	20,200	24,200	---	---	47,800	58,600
Iowa	---	---	56,900	63,400	---	---	56,900	63,400
Kentucky	5,500	500	17,200	21,800	---	---	22,700	22,300
Louisiana	---	---	4,700	0	---	---	4,700	0
Michigan	57,500	46,400	43,700	53,500	13,200	2,700	114,400	102,600
Minnesota	106,800	98,000	114,600	118,000	8,900	8,000	230,300	224,000
Mississippi	3,500	3,400	1,500	3,000	---	---	5,000	6,400
Missouri	---	---	64,900	23,500	---	---	64,900	23,500
Ohio	45,900	42,200	47,500	50,300	11,400	12,500	104,800	105,000
Tennessee	20,200	32,500	32,700	43,400	---	---	52,900	75,900
Wisconsin	20,100	23,900	43,200	71,700	---	---	63,300	95,600
Mississippi Flyway Total	296,900	291,100	522,500	556,100	33,500	23,200	852,900	870,400
Kansas	0	0	72,700	81,000	---	---	72,700	81,000
North Dakota	38,900	32,500	77,400	76,800	---	---	116,300	109,300
Oklahoma	1,300	1,600	14,700	26,300	---	---	16,000	27,900
South Dakota	39,300	40,700	124,600	90,600	---	---	163,900	131,300
Idaho	100	400	64,500	43,900	---	---	64,600	44,300
Oregon	7,000	5,700	39,300	52,400	---	---	46,300	58,100
Washington	4,300	5,000	51,100	43,700	1,100	1,400	56,500	50,100
Wyoming	0	200	1,500	300	---	---	1,500	500

Table 8. Estimates of waterfowl harvest in Canada during the 2001 and 2002 hunting seasons (estimates courtesy of the Canadian Wildlife Service).

	Newfoundland		Prince Edward Isl.		Nova Scotia		New Brunswick		Quebec		Ontario		Manitoba	
Duck Species Composition	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
Mallard	601	300	1,192	2,176	5,721	6,498	7,047	6,002	79,896	66,533	166,629	147,847	92,115	77,992
Black Duck	16,802	18,022	9,465	6,214	26,730	28,310	12,879	14,449	38,719	36,348	19,187	19,133	293	0
Gadwall	0	0	0	614	0	106	224	184	2,285	1,279	2,730	3,497	10,164	9,459
Wigeon	86	0	2,855	0	624	557	1,839	1,019	3,559	2,050	6,563	7,527	5,782	5,167
Green-winged Teal	4,718	3,877	3,579	3,851	7,033	6,339	5,755	6,775	28,592	27,993	21,031	32,954	6,840	12,775
Blue-winged/Cinnamon Teal	235	117	543	234	344	299	2,699	1,463	3,957	2,049	13,486	5,199	9,283	9,209
Northern Shoveler	0	0	0	78	92	157	130	0	690	605	927	2,477	6,011	4,471
Northern Pintail	137	1,153	0	78	401	543	611	702	4,911	5,527	3,709	9,910	9,216	13,879
Wood Duck	172	0	181	78	1,924	780	2,389	2,662	16,342	14,124	55,823	54,970	132	991
Redhead	0	0	0	0	0	0	0	0	63	121	3,109	1,571	7,580	3,396
Canvasback	0	0	0	0	0	0	0	0	0	0	897	952	4,224	3,196
Greater Scaup	1,210	1,126	0	78	235	438	1,493	1,519	1,537	2,726	4,276	4,817	747	691
Lesser Scaup	415	1,437	0	549	60	412	138	845	5,084	5,576	13,532	14,260	8,118	6,008
Ring-necked Duck	7,432	5,222	0	418	1,498	1,784	2,462	4,337	8,752	6,574	19,556	20,725	5,027	5,512
Goldeneyes	2,620	1,989	0	162	1,066	1,239	2,144	1,714	6,046	3,103	11,052	8,140	365	873
Bufflehead	0	0	0	0	0	864	126	210	1,044	922	10,208	9,657	1,348	1,085
Ruddy Duck	0	0	0	0	0	0	0	0	0	67	1,075	371	676	0
Long-tailed Duck	473	866	0	0	569	896	29	0	821	536	545	356	0	0
Eiders	7,716	8,470	0	159	6,967	8028	316	111	3,192	2,882	0	145	0	0
Scoters	1,523	2,790	0	477	3,682	3,064	307	196	3,519	4,108	1,062	596	159	0
Hooded Merganser	337	302	0	0	132	638	504	299	3,169	2,886	7,272	5,080	193	833
Other Mergansers	5,730	4,785	0	487	1,400	1,166	565	563	3,536	3,469	1,825	1,708	0	0
Other Ducks	0	0	0	0	0	0	0	0	68	0	0	0	0	0
Total Duck Harvest	50,207	50,456	17,815	15,653	58,478	62,118	41,657	43,050	215,782	189,478	364,494	351,892	168,273	155,537
Goose Species Composition														
Canada Goose	5,553	6,744	25,136	22,126	10,554	10,831	5,615	4,962	67,763	87,177	148,705	160,474	102,034	108,306
Snow Goose	0	0	0	0	0	0	0	225	97,116	48,259	647	618	7,414	9,722
Blue Goose	0	0	0	0	0	0	0	0	1,322	330	335	79	17,921	14,530
Ross's Goose	0	0	0	0	0	0	0	0	0	0	0	0	665	1,987
White-fronted Goose	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brant	0	0	0	0	0	0	0	0	618	404	186	50	0	0
Total Goose Harvest	5,553	6,744	25,136	22,126	10,554	10,831	5,615	5,187	166,819	136,170	149,873	161,221	128,034	134,545
Migratory Bird Permits Sold	16,998	16,056	2,416	2,341	6,645	6,316	5,975	5,942	29,138	28,702	58,458	56,645	15,038	14,832

Table 8. Estimates of waterfowl harvest in Canada during the 2000 and 2001 hunting seasons (estimates courtesy of the Canadian Wildlife Service).

	Saskatchewan		Alberta		British Columbia		Nunavut		Northwest Terr.		Yukon Territory		Canada Total	
Duck Species Composition	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
Mallard	107,413	118,857	94,699	80,707	35,575	37,371	0	0	643	1,702	229	609	591,760	546,594
Black Duck	0	77	0	89	0	0	0	0	0	0	0	0	124,075	122,642
Gadwall	7,451	9,844	9,027	7,825	1,448	858	0	0	19	0	0	0	33,348	33,666
Wigeon	5,364	7,103	7,644	6,791	8,383	9,380	0	0	85	1,188	0	261	42,784	41,043
Green-winged Teal	5,603	9,489	3,439	4,467	2,745	3,234	0	0	0	0	91	0	89,426	111,754
Blue-winged/Cinnamon Teal	8,767	5,201	2,347	4,533	491	660	0	0	48	0	0	0	42,200	28,964
Northern Shoveler	7,434	4,078	4,457	5,137	534	1,150	0	0	30	0	0	0	20,305	18,153
Northern Pintail	7,051	13,055	8,732	7,640	4,807	4,551	0	0	19	0	60	0	39,654	57,038
Wood Duck	0	0	0	0	429	114	0	0	0	0	0	0	77,392	73,719
Redhead	828	1,414	1,451	1,589	0	71	0	0	30	0	0	0	13,061	8,162
Canvasback	411	756	466	253	136	95	0	0	0	0	0	0	6,134	5,252
Greater Scaup	0	0	0	0	18	0	0	0	0	152	0	0	9,516	11,547
Lesser Scaup	1,777	1,525	861	1,791	121	384	0	0	129	0	8	174	30,243	32,961
Ring-necked Duck	1,247	737	429	1,093	257	59	0	0	19	0	0	0	46,679	46,461
Goldeneyes	0	0	999	1,278	248	404	0	0	0	0	0	27	24,540	18,929
Bufflehead	0	952	607	2,222	376	320	0	0	0	0	20	0	13,729	16,232
Ruddy Duck	0	0	195	0	0	0	0	0	0	303	0	0	1,946	741
Long-tailed Duck	0	0	0	0	0	0	0	0	0	0	0	0	2,437	2,654
Eiders	0	0	0	0	0	0	0	0	0	0	0	0	18,191	19,795
Scoters	157	0	0	0	26	42	0	0	0	0	0	0	10,435	11,273
Hooded Merganser	0	0	0	115	0	46	0	0	0	0	0	0	11,607	10,199
Other Mergansers	0	0	0	0	0	0	0	0	0	0	0	0	13,056	12,178
Other Ducks	0	0	0	0	0	0	0	0	0	0	0	0	68	0
Total Duck Harvest	153,503	173,088	135,353	125,530	55,594	58,739	0	0	1,022	3,345	408	1,071	1,262,586	1,229,957
Goose Species Composition														
Canada Goose	146,829	125,588	111,751	108,758	13,076	10,459	---	0	---	0	---	239	637,016	645,664
Snow Goose	69,682	54,516	12,395	9,399	2,354	7,121	---	0	---	0	---	0	189,608	129,860
Blue Goose	30,843	31,948	1,040	433	0	163	---	0	---	0	---	0	51,461	47,483
Ross's Goose	14,573	27,842	5,747	4,127	0	0	---	0	---	0	---	0	20,985	33,956
White-fronted Goose	61,391	39,870	31,722	10,691	81	0	---	0	---	0	---	6	93,194	50,567
Brant	0	0	0	0	0	0	---	0	---	0	---	0	804	454
Total Goose Harvest	323,318	279,764	162,655	133,408	15,511	17,743	16	0	47	0	78	245	993,193	907,984
Migratory Bird Permits Sold	18,387	16,958	19,527	17,814	8,185	7,464	20	24	223	244	251	217	181,241	173,531

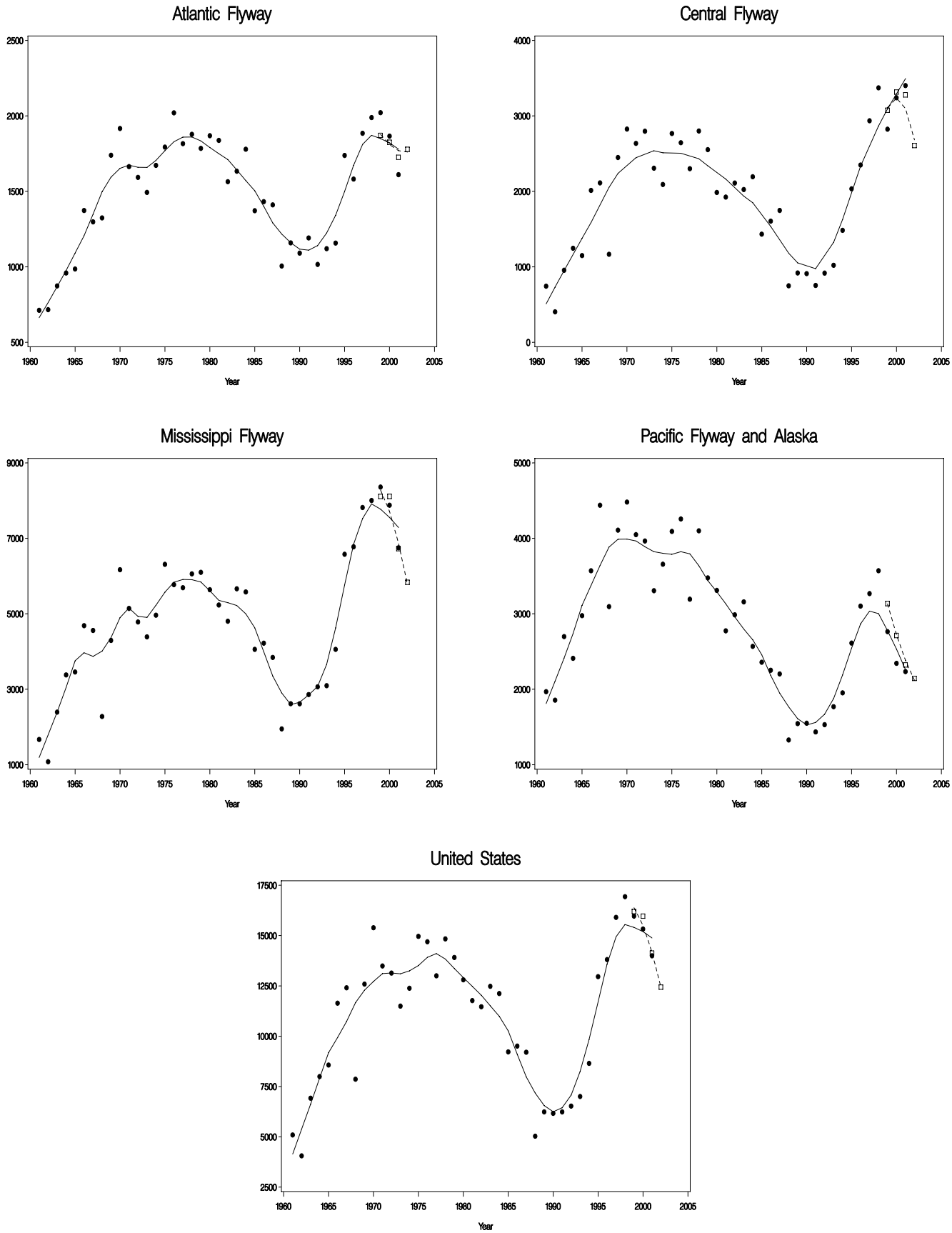


Figure 1. Number of ducks harvested (in thousands) by hunters in the United States, 1961-2002. (Federal Duck Stamp survey - circles and solid line; HIP survey - squares and dashed line.)

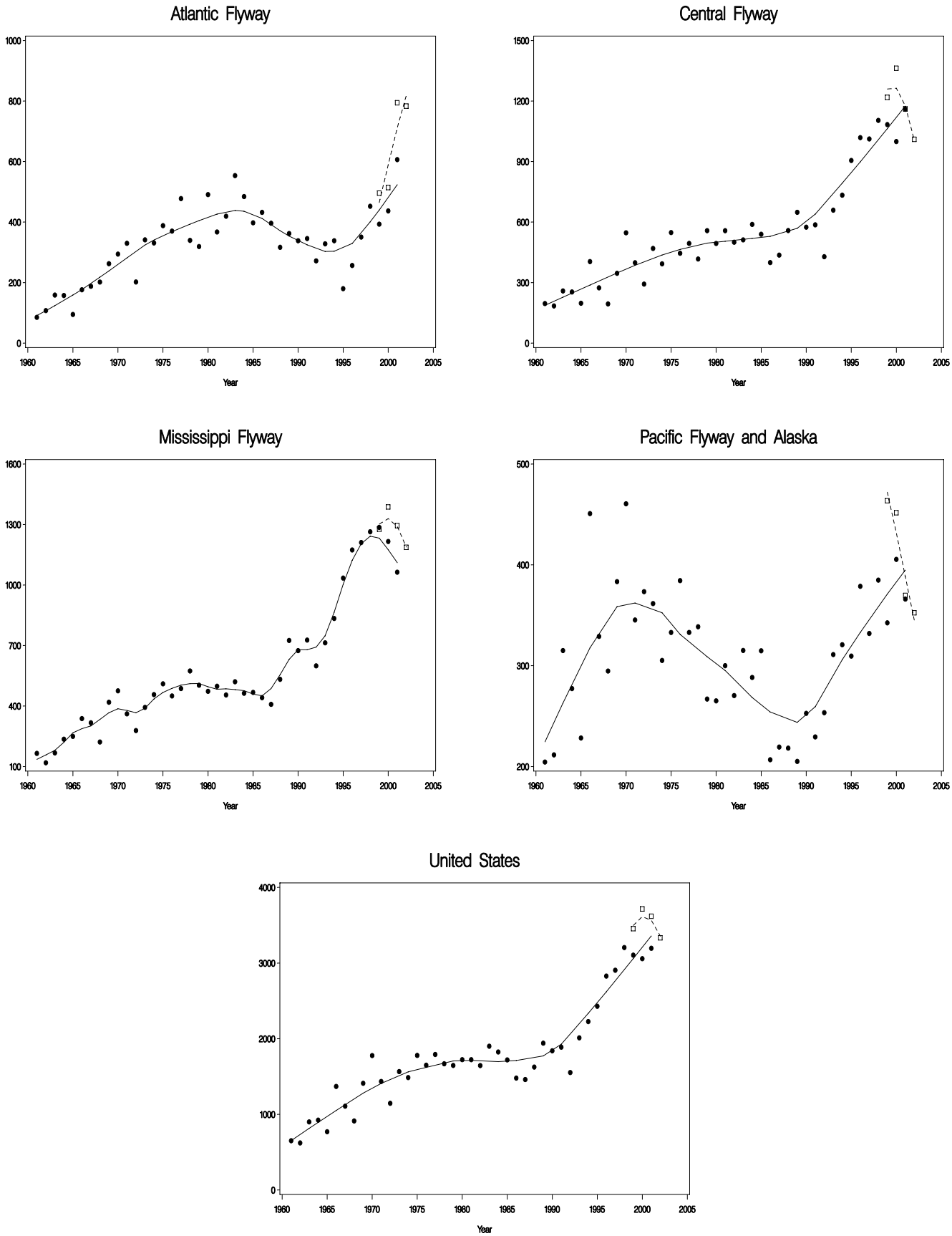


Figure 2. Number of geese harvested (in thousands) by hunters in the United States, 1961-2002. (Federal Duck Stamp survey - circles and solid line; HIP survey - squares and dashed line.)

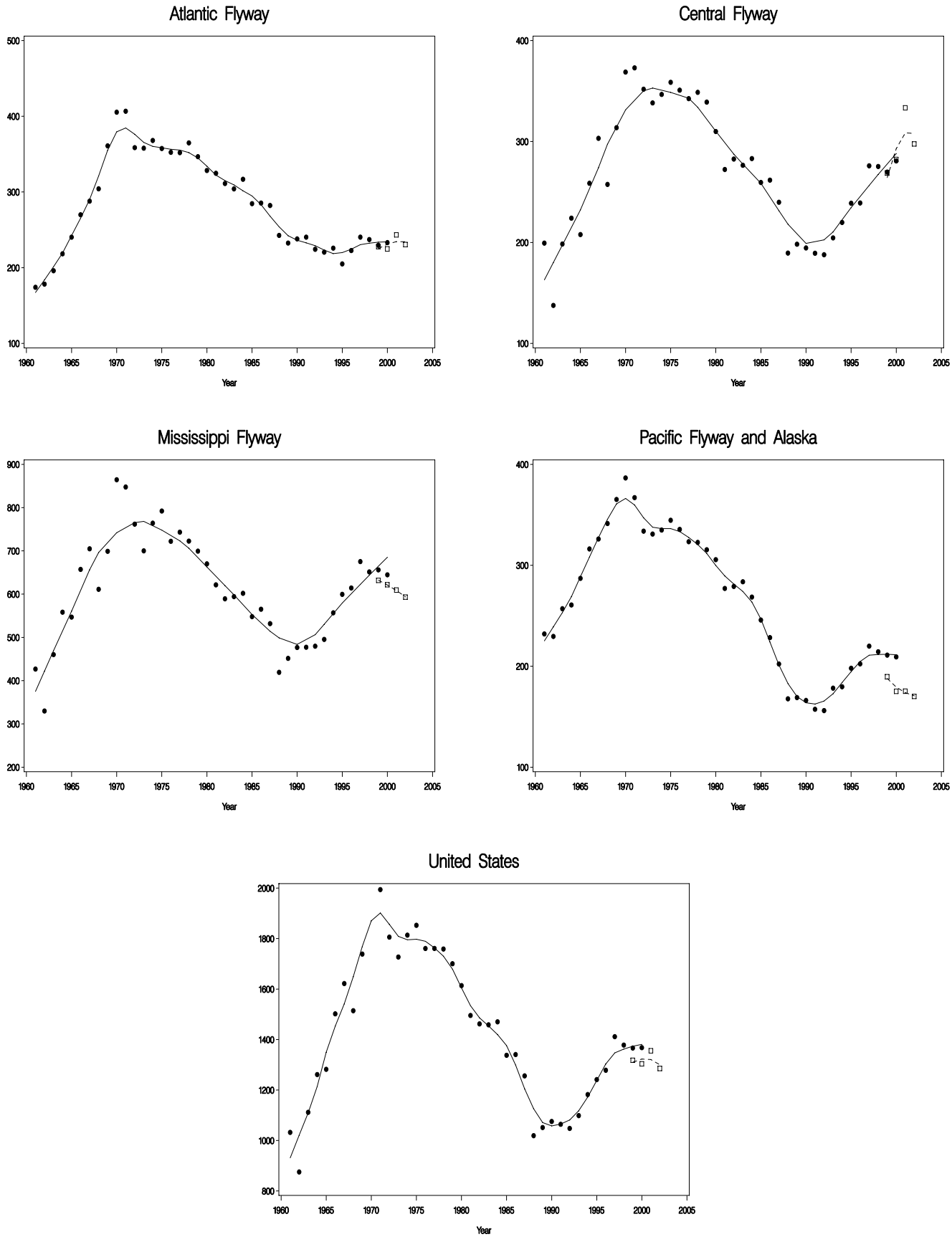


Figure 3. Number of active waterfowl hunters (in thousands) in the United States, 1961-2002. (Federal Duck Stamp survey - circles and solid line; HIP survey - squares and dashed line.) Hunter numbers estimates may be biased high for the HIP survey because sample frames are state-specific, therefore hunters are counted twice if the hunt in more than one state.

Table 9. Age ratios of mallards in state harvests during the 2001 and 2002 hunting seasons as determined from the Waterfowl Parts Collection Survey.

	Immatures per Adult [a]		Immature Females per Adult Female [a]	
State and Flyway	2001	2002	2001	2002
Connecticut	0.8	1.2	1.2	1.1
Delaware	1.1	0.9	1.4	1.0
Florida	---	---	---	---
Georgia	0.9	0.6	1.4	1.0
Maine	1.4	1.1	1.1	1.5
Maryland	1.0	0.9	2.2	1.3
Massachusetts	1.7	1.2	2.5	1.8
New Hampshire	1.7	1.0	1.8	1.5
New Jersey	1.1	1.0	1.8	1.6
New York	1.4	1.2	1.9	1.8
North Carolina	1.0	1.0	1.5	1.9
Pennsylvania	1.2	0.9	1.9	1.6
Rhode Island	1.0	0.8	1.6	1.2
South Carolina	1.6	1.1	3.0	1.2
Vermont	1.7	1.2	1.7	1.6
Virginia	0.7	0.7	1.4	1.1
West Virginia	1.0	0.7	1.6	1.2
Atlantic Flyway Total [b]	1.14	0.96	1.81	1.47
Alabama	0.8	0.7	1.3	0.7
Arkansas	1.0	0.5	2.2	1.1
Illinois	1.7	1.1	4.0	2.3
Indiana	1.3	1.2	2.3	2.3
Iowa	2.6	1.3	4.8	2.4
Kentucky	1.1	0.8	1.6	1.5
Louisiana	0.8	0.4	1.8	0.7
Michigan	2.0	1.7	3.4	2.7
Minnesota	2.6	1.5	3.4	1.7
Mississippi	1.0	0.4	1.8	0.7
Missouri	1.1	0.8	2.7	1.6
Ohio	1.3	1.4	3.1	2.3
Tennessee	1.0	0.7	1.4	1.6
Wisconsin	3.0	1.7	5.0	2.4
Mississippi Flyway Total [b]	1.33	0.90	2.52	1.61

Table 9. Age ratios of mallards in state harvests during the 2001 and 2002 hunting seasons as determined from the Waterfowl Parts Collection Survey.

	Immatures per Adult [a]		Immature Females per Adult Female [a]	
State and Flyway	2001	2002	2001	2002
Colorado	0.7	0.5	1.3	0.9
Kansas	0.6	0.5	1.9	1.2
Montana	0.6	0.6	0.8	0.8
Nebraska	0.7	0.7	1.5	1.5
New Mexico	1.0	0.9	1.5	1.8
North Dakota	1.3	0.9	2.1	1.2
Oklahoma	0.4	0.3	0.9	0.7
South Dakota	0.7	1.0	1.5	2.5
Texas	0.5	0.3	1.1	0.7
Wyoming	0.5	0.4	1.0	1.0
Central Flyway Total [b]	0.71	0.58	1.38	1.05
Arizona	1.4	0.8	1.7	1.1
California	1.7	1.5	2.9	2.9
Colorado	0.9	1.1	1.2	2.3
Idaho	1.0	1.0	1.6	1.7
Montana	0.8	0.7	1.5	1.2
Nevada	1.1	1.6	1.8	2.5
New Mexico	0.8	0.7	0.5	1.3
Oregon	1.4	1.4	1.9	2.0
Utah	1.2	1.2	1.8	2.0
Washington	1.0	1.0	1.6	1.5
Wyoming	1.4	1.3	1.2	1.3
Pacific Flyway Total [b]	1.22	1.17	1.95	1.87
Alaska	4.6	3.0	6.2	3.7
U.S. Total [b]	1.13	0.87	2.09	1.53

[a] Ratio not shown if sample was less than 20 wings.

[b] In estimating Flyway and U.S. ratios, the ratio for each state was weighted in proportion to the estimated harvest in that state as determined from the Harvest Information Program waterfowl harvest survey.

Table 10. Weighted age ratios of ducks harvested during the 2001 and 2002 hunting seasons, by species and Flyway.

	Immatures per Adult [a,b]		Immature Females per Adult Female [a,b]	
State and Flyway	2001	2002	2001	2002
Mallard				
Atlantic	1.14	0.96	1.81	1.47
Mississippi	1.33	0.90	2.52	1.61
Central	0.71	0.58	1.38	1.05
Pacific	1.22	1.17	1.95	1.87
U.S. Total	1.13	0.87	2.09	1.53
Black duck				
Atlantic	0.93	1.07	1.16	1.67
Mississippi	1.77	1.01	2.25	1.81
U.S. Total	1.09	1.05	1.37	1.70
Mottled duck				
Atlantic	1.10	1.02	1.23	0.87
Mississippi	1.19	0.88	1.56	0.91
Central	1.63	1.00	2.29	0.78
U.S. Total	1.26	0.94	1.62	0.88
Gadwall				
Atlantic	0.82	0.52	1.40	0.81
Mississippi	1.32	0.68	2.19	1.16
Central	1.00	0.80	1.70	1.34
Pacific	0.78	1.01	1.78	1.73
U.S. Total	1.14	0.74	1.96	1.25
American wigeon				
Atlantic	1.02	0.92	1.97	2.20
Mississippi	1.17	1.31	1.68	3.11
Central	0.76	0.88	1.43	1.64
Pacific	1.02	1.67	1.90	2.99
U.S. Total	0.99	1.30	1.75	2.50
Green-winged teal				
Atlantic	1.16	1.85	1.72	2.29
Mississippi	1.98	2.13	2.92	2.89
Central	1.79	1.78	2.44	2.37
Pacific	1.03	1.40	2.07	3.08
U.S. Total	1.56	1.81	2.42	2.73
Blue-winged/Cinnamon teal				
Atlantic	1.24	0.80	1.56	1.27
Mississippi	2.42	1.96	3.08	2.09
Central	2.27	1.90	3.57	2.49
Pacific	1.20	1.13	1.54	1.61
U.S. Total	2.19	1.74	2.97	2.08

Table 10. Weighted age ratios of ducks harvested during the 2001 and 2002 hunting seasons, by species and Flyway.

	Immatures per Adult [a,b]		Immature Females per Adult Female [a,b]	
State and Flyway	2001	2002	2001	2002
Northern shoveler				
Atlantic	1.32	0.79	2.20	1.18
Mississippi	1.89	1.05	3.08	1.70
Central	1.89	1.57	2.34	2.14
Pacific	0.65	0.86	1.37	1.57
U.S. Total	1.39	1.07	2.32	1.75
Northern pintail				
Atlantic	1.04	1.34	1.66	2.05
Mississippi	1.41	1.79	3.30	2.05
Central	0.87	1.06	1.24	1.60
Pacific	0.62	0.95	1.79	2.13
U.S. Total	0.93	1.27	1.90	2.03
Wood duck				
Atlantic	1.20	1.15	1.40	1.33
Mississippi	2.05	1.67	2.26	1.99
Central	1.31	1.03	1.49	1.76
Pacific	1.29	1.25	1.20	1.09
U.S. Total	1.60	1.43	1.80	1.72
Redhead				
Atlantic	0.46	0.10	0.28	0.23
Mississippi	1.97	0.21	1.59	0.25
Central	0.71	0.24	1.14	0.29
Pacific	0.44	1.10	0.62	1.49
U.S. Total	0.93	0.30	1.15	0.40
Canvasback				
Atlantic	---	---	---	---
Mississippi	1.45	---	1.22	---
Central	0.77	---	0.65	---
Pacific	1.23	---	1.20	---
U.S. Total	1.00	---	0.92	---
Greater scaup				
Atlantic	1.46	1.65	2.31	1.57
Mississippi	2.27	2.87	---	2.57
Central	---	3.31	---	---
Pacific	0.48	0.94	0.60	1.76
U.S. Total	0.92	1.82	1.33	2.08

Table 10. Weighted age ratios of ducks harvested during the 2001 and 2002 hunting seasons, by species and Flyway.

	Immatures per Adult [a,b]		Immature Females per Adult Female [a,b]	
State and Flyway	2001	2002	2001	2002
Lesser scaup				
Atlantic	0.67	0.47	0.87	0.81
Mississippi	0.60	0.85	0.82	0.97
Central	1.04	1.35	1.86	2.28
Pacific	1.65	1.66	2.31	1.61
U.S. Total	0.75	0.88	1.07	1.20
Ring-necked duck				
Atlantic	1.22	1.12	1.58	1.70
Mississippi	1.82	1.47	2.92	1.98
Central	1.09	0.81	1.50	1.13
Pacific	1.40	1.27	2.16	1.61
U.S. Total	1.48	1.25	2.22	1.74
Common goldeneye				
Atlantic	0.40	0.91	1.30	1.56
Mississippi	1.16	0.99	2.30	0.95
Central	1.15	1.05	---	1.35
Pacific	0.74	1.11	1.21	1.86
U.S. Total	0.91	1.08	1.66	1.34
Bufflehead				
Atlantic	0.86	1.29	2.72	2.85
Mississippi	1.43	0.98	3.39	1.58
Central	0.53	0.83	0.79	2.02
Pacific	1.29	1.14	2.28	2.12
U.S. Total	1.11	1.09	2.51	2.03
Ruddy duck				
Atlantic	0.48	0.25		
Mississippi	---	---		
Central	5.36	---		
Pacific	0.65	0.64		
U.S. Total	1.31	0.52		
Hooded merganser				
Atlantic	1.13	0.81		
Mississippi	1.28	0.76		
Central	0.83	0.69		
Pacific	2.10	1.57		
U.S. Total	1.20	0.79		

Table 10. Weighted age ratios of ducks harvested during the 2001 and 2002 hunting seasons, by species and Flyway.

	Immatures per Adult [a,b]		Immature Females per Adult Female [a,b]	
State and Flyway	2001	2002	2001	2002
Common merganser				
Atlantic	1.93	1.40	3.18	1.46
Mississippi	---	0.70	---	---
Central	---	0.62	---	---
Pacific	1.89	0.78	2.27	1.81
U.S. Total	1.25	0.97	1.50	1.13
Red-breasted merganser				
Atlantic	0.83	0.88	0.83	1.12
U.S. Total	1.13	0.89	1.38	1.14
Long-tailed duck				
Atlantic	0.11	0.48		
U.S. Total	0.12	0.53		
Common eider				
Atlantic	0.32	0.28		
U.S. Total	0.32	0.50		
Black scoter				
Atlantic	1.17	0.62	---	---
U.S. Total	1.68	0.77	---	---
White-winged scoter				
Atlantic	1.03	1.61	5.01	---
U.S. Total	2.25	1.76	5.93	9.11
Surf scoter				
Atlantic	0.38	0.75	1.22	1.50
U.S. Total	0.46	0.90	1.36	1.73

[a] Ratio not shown if sample was less than 20 wings or if sex of immatures cannot be determined.
[b] In estimating Flyway and U.S. ratios, the ratio for each state was weighted in proportion to the estimated harvest in that state as determined from the Harvest Information Program waterfowl harvest survey.

Table 11. Sex ratios of mallards in state harvests during the 2001 and 2002 hunting seasons as determined from the Waterfowl Parts Collection Survey.

	Males per Female [a]		Adult Males per Adult Female [a]	
State and Flyway	2001	2002	2001	2002
Connecticut	1.8	2.7	2.4	2.5
Delaware	1.3	1.6	1.7	1.8
Florida	---	---	---	---
Georgia	2.4	2.4	3.1	3.2
Maine	1.7	1.6	1.4	2.1
Maryland	2.1	2.2	4.1	2.9
Massachusetts	1.9	1.5	2.8	2.1
New Hampshire	1.5	1.6	1.6	2.3
New Jersey	2.2	2.1	3.3	2.9
New York	1.7	2.0	2.3	2.9
North Carolina	1.9	1.8	2.6	3.0
Pennsylvania	1.9	2.3	2.8	3.5
Rhode Island	1.5	2.4	2.3	3.3
South Carolina	1.9	2.5	3.5	2.7
Vermont	1.6	1.6	1.6	2.0
Virginia	2.4	1.9	3.7	2.6
West Virginia	2.7	2.6	3.8	3.6
Atlantic Flyway Total [b]	1.91	2.04	2.82	2.84
Alabama	2.4	1.7	3.3	1.6
Arkansas	2.3	2.9	4.2	4.4
Illinois	2.1	3.0	4.8	5.3
Indiana	2.5	2.0	4.1	3.6
Iowa	1.7	1.9	3.4	3.3
Kentucky	1.9	2.0	2.4	3.1
Louisiana	2.0	2.3	3.5	3.2
Michigan	2.1	1.8	3.7	2.8
Minnesota	1.6	1.7	2.2	1.9
Mississippi	2.5	2.5	3.9	3.4
Missouri	2.7	2.9	5.6	4.8
Ohio	2.2	1.8	4.7	3.0
Tennessee	2.7	2.4	3.4	4.2
Wisconsin	1.8	1.6	3.0	2.2
Mississippi Flyway Total [b]	2.17	2.20	3.79	3.42

Table 11. Sex ratios of mallards in state harvests during the 2001 and 2002 hunting seasons as determined from the Waterfowl Parts Collection Survey.

	Males per Female [a]		Adult Males per Adult Female [a]	
State and Flyway	2001	2002	2001	2002
Colorado	3.6	3.0	5.3	4.3
Kansas	5.2	6.1	10.1	9.3
Montana	3.0	3.7	3.7	4.3
Nebraska	4.0	4.1	6.2	6.4
New Mexico	1.7	2.2	2.5	3.8
North Dakota	2.8	2.5	3.9	3.0
Oklahoma	3.9	3.4	5.7	4.6
South Dakota	4.2	3.1	6.7	6.1
Texas	2.3	2.8	3.5	3.8
Wyoming	4.1	4.2	5.9	6.4
Central Flyway Total [b]	3.14	3.15	4.76	4.42
Arizona	2.1	1.7	2.5	2.2
California	2.3	2.4	3.8	4.1
Colorado	2.4	3.6	2.9	6.3
Idaho	2.5	2.3	3.5	3.3
Montana	3.1	2.4	4.8	3.6
Nevada	2.3	2.1	3.4	3.2
New Mexico	4.2	2.0	3.3	3.1
Oregon	1.7	1.9	2.4	2.8
Utah	1.8	1.8	2.7	2.8
Washington	2.2	2.2	3.2	3.1
Wyoming	2.6	2.0	2.4	2.0
Pacific Flyway Total [b]	2.20	2.20	3.25	3.24
Alaska	1.4	1.2	2.1	1.6
U.S. Total [b]	2.31	2.33	3.79	3.52

[a] Ratio not shown if sample was less than 20 wings.

[b] In estimating Flyway and U.S. ratios, the ratio for each state was weighted in proportion to the estimated harvest in that state as determined from the Harvest Information Program waterfowl harvest survey.

Table 12. Weighted sex ratios of ducks harvested during the 2001 and 2002 hunting seasons, by species and Flyway.

	Males per Female [a,b]		Adult Males per Adult Female [a,b]	
Species and Flyway	2001	2002	2001	2002
Mallard				
Atlantic	1.91	2.04	2.82	2.84
Mississippi	2.17	2.20	3.79	3.42
Central	3.14	3.15	4.76	4.42
Pacific	2.20	2.20	3.25	3.24
U.S. Total	2.31	2.33	3.79	3.52
Black duck				
Atlantic	0.99	1.06	1.21	1.65
Mississippi	0.79	1.07	1.10	1.89
U.S. Total	0.93	1.07	1.19	1.71
Mottled duck				
Atlantic	0.93	0.79	1.02	0.64
Mississippi	0.97	0.84	1.30	0.88
Central	0.83	1.00	1.29	0.78
U.S. Total	0.92	0.85	1.22	0.79
Gadwall				
Atlantic	1.80	1.68	2.69	2.19
Mississippi	1.64	1.67	2.64	2.44
Central	1.61	1.57	2.54	2.35
Pacific	2.35	1.70	4.22	2.70
U.S. Total	1.68	1.64	2.71	2.42
American wigeon				
Atlantic	1.43	1.78	2.60	3.62
Mississippi	1.61	1.59	2.22	3.60
Central	1.88	1.71	3.00	2.81
Pacific	1.73	1.45	2.93	2.68
U.S. Total	1.70	1.57	2.75	2.93
Green-winged teal				
Atlantic	1.38	1.16	1.95	1.50
Mississippi	1.71	1.50	2.56	2.10
Central	1.82	1.46	2.52	1.98
Pacific	1.86	1.68	3.33	3.57
U.S. Total	1.72	1.48	2.62	2.28
Blue-winged/Cinnamon teal				
Atlantic	1.34	1.39	1.67	2.03
Mississippi	1.42	1.06	1.88	1.14
Central	1.34	1.16	2.25	1.56
Pacific	1.26	1.24	1.61	1.78
U.S. Total	1.38	1.12	1.95	1.37

Table 12. Weighted sex ratios of ducks harvested during the 2001 and 2002 hunting seasons, by species and Flyway.

	Males per Female [a,b]		Adult Males per Adult Female [a,b]	
Species and Flyway	2001	2002	2001	2002
Northern shoveler				
Atlantic	1.48	1.58	2.44	2.14
Mississippi	1.46	1.96	2.45	2.90
Central	1.45	1.30	1.85	1.80
Pacific	2.24	1.94	3.71	3.10
U.S. Total	1.63	1.73	2.68	2.64
Northern pintail				
Atlantic	1.65	1.35	2.40	2.05
Mississippi	2.06	1.80	4.50	2.10
Central	2.04	2.18	2.69	3.02
Pacific	2.56	2.67	5.11	4.89
U.S. Total	2.12	2.06	3.73	3.10
Wood duck				
Atlantic	1.80	1.85	2.08	2.10
Mississippi	1.60	1.55	1.80	1.86
Central	2.07	2.06	2.30	3.19
Pacific	1.71	1.42	1.68	1.26
U.S. Total	1.71	1.66	1.95	2.00
Redhead				
Atlantic	1.22	1.07	0.96	1.31
Mississippi	1.37	1.53	1.06	1.62
Central	2.13	1.47	2.97	1.54
Pacific	2.10	0.93	2.50	1.31
U.S. Total	1.79	1.38	2.14	1.54
Canvasback				
Atlantic	---	---	---	---
Mississippi	0.82	---	---	---
Central	1.20	---	1.06	---
Pacific	0.80	---	0.78	---
U.S. Total	0.97	---	0.89	---
Greater scaup				
Atlantic	1.02	1.09	1.58	1.01
Mississippi	0.81	1.22	---	1.05
Central	---	1.50	---	---
Pacific	1.88	1.77	2.12	2.99
U.S. Total	1.35	1.32	1.81	1.54

Table 12. Weighted sex ratios of ducks harvested during the 2001 and 2002 hunting seasons, by species and Flyway.

	Males per Female [a,b]		Adult Males per Adult Female [a,b]	
Species and Flyway	2001	2002	2001	2002
Lesser scaup				
Atlantic	2.15	2.41	2.59	3.19
Mississippi	2.11	1.73	2.56	1.91
Central	2.20	1.59	3.47	2.63
Pacific	1.29	1.45	1.85	1.39
U.S. Total	2.05	1.78	2.65	2.26
Ring-necked duck				
Atlantic	1.84	1.61	2.30	2.33
Mississippi	1.74	2.11	2.72	2.75
Central	2.14	2.76	2.79	3.35
Pacific	2.26	1.40	3.30	1.79
U.S. Total	1.87	2.00	2.68	2.65
Common goldeneye				
Atlantic	2.87	1.24	5.34	2.00
Mississippi	1.77	1.04	3.22	1.03
Central	2.31	1.85	3.31	2.27
Pacific	1.10	1.86	1.70	2.87
U.S. Total	1.65	1.36	2.71	1.68
Bufflehead				
Atlantic	2.39	1.47	5.83	3.17
Mississippi	1.10	1.39	2.80	2.13
Central	1.46	1.47	1.91	3.08
Pacific	0.85	1.21	1.66	2.23
U.S. Total	1.32	1.39	2.89	2.47
Hooded merganser				
Atlantic			2.22	2.20
Mississippi			2.43	3.39
Central			2.03	1.62
Pacific			---	---
U.S. Total			2.24	2.64
Common merganser				
Atlantic	0.64	0.82	---	0.87
Mississippi	---	0.70	---	---
Central	---	1.17	---	1.88
Pacific	1.01	1.40	1.28	2.78
U.S. Total	0.81	0.87	1.01	1.04

Table 12. Weighted sex ratios of ducks harvested during the 2001 and 2002 hunting seasons, by species and Flyway.

	Males per Female [a,b]		Adult Males per Adult Female [a,b]	
Species and Flyway	2001	2002	2001	2002
Red-breasted merganser				
Atlantic	1.68	1.34	1.85	1.77
U.S. Total	2.19	0.85	2.69	1.17
Long-tailed duck				
Atlantic			11.83	1.67
U.S. Total			11.83	1.65
Common eider				
Atlantic			2.56	2.98
U.S. Total			2.56	2.70
Black scoter				
Atlantic	1.80	2.75	---	---
U.S. Total	2.47	2.48	---	---
White-winged scoter				
Atlantic	1.82	1.13	7.29	13.74
U.S. Total	2.32	1.17	6.08	6.92
Surf scoter				
Atlantic	2.25	1.39	4.23	2.47
U.S. Total	2.30	1.30	4.35	2.40

[a] Ratio not shown if sample was less than 20 wings or if sex of immatures cannot be determined.
[b] In estimating Flyway and U.S. ratios, the ratio for each state was weighted in proportion to the estimated harvest in that state as determined from the Harvest Information Program waterfowl harvest survey.

Table 13. Weighted age ratios of geese harvested during the 2001 and 2002 hunting seasons, by species and Flyway.

	Immatures per Adult [a,b]	
Species and Flyway	2001	2002
Canada goose		
Atlantic	0.48	0.40
Mississippi	0.59	0.61
Central	0.58	0.45
Pacific	0.56	0.51
U.S. Total	0.53	0.50
Snow goose		
Atlantic	1.49	0.27
Mississippi	0.74	0.32
Central	0.49	0.31
Pacific	0.30	0.42
U.S. Total	0.64	0.32
Blue goose		
Mississippi	0.47	0.10
Central	0.71	0.21
U.S. Total	0.71	0.28
Ross' goose		
Central	1.96	0.98
Pacific	0.72	0.69
U.S. Total	1.92	0.95
Greater white-fronted goose		
Mississippi	0.66	0.49
Central	0.46	0.50
Pacific	0.68	0.32
U.S. Total	0.58	0.47
Brant		
Atlantic	0.51	0.11
Pacific	0.55	---

[a] Ratio not shown if sample was less than 20 tails/primary tips.
[b] In estimating Flyway and U.S. ratios, the ratio for each state was weighted in proportion to the estimated harvest in that state as determined from the Harvest Information Program waterfowl harvest survey.

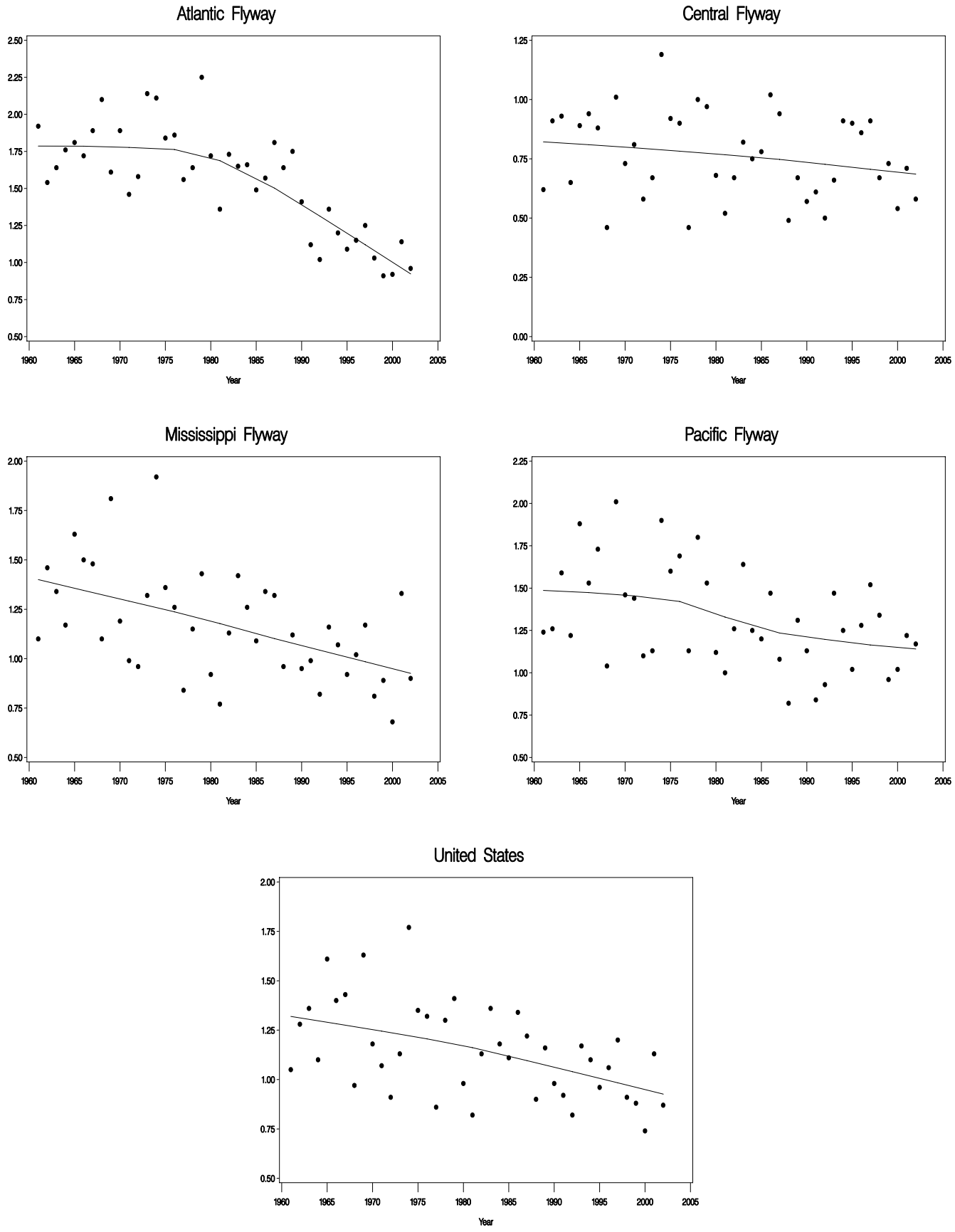


Figure 4. Age ratios of mallards harvested in the United States, 1961-2002.

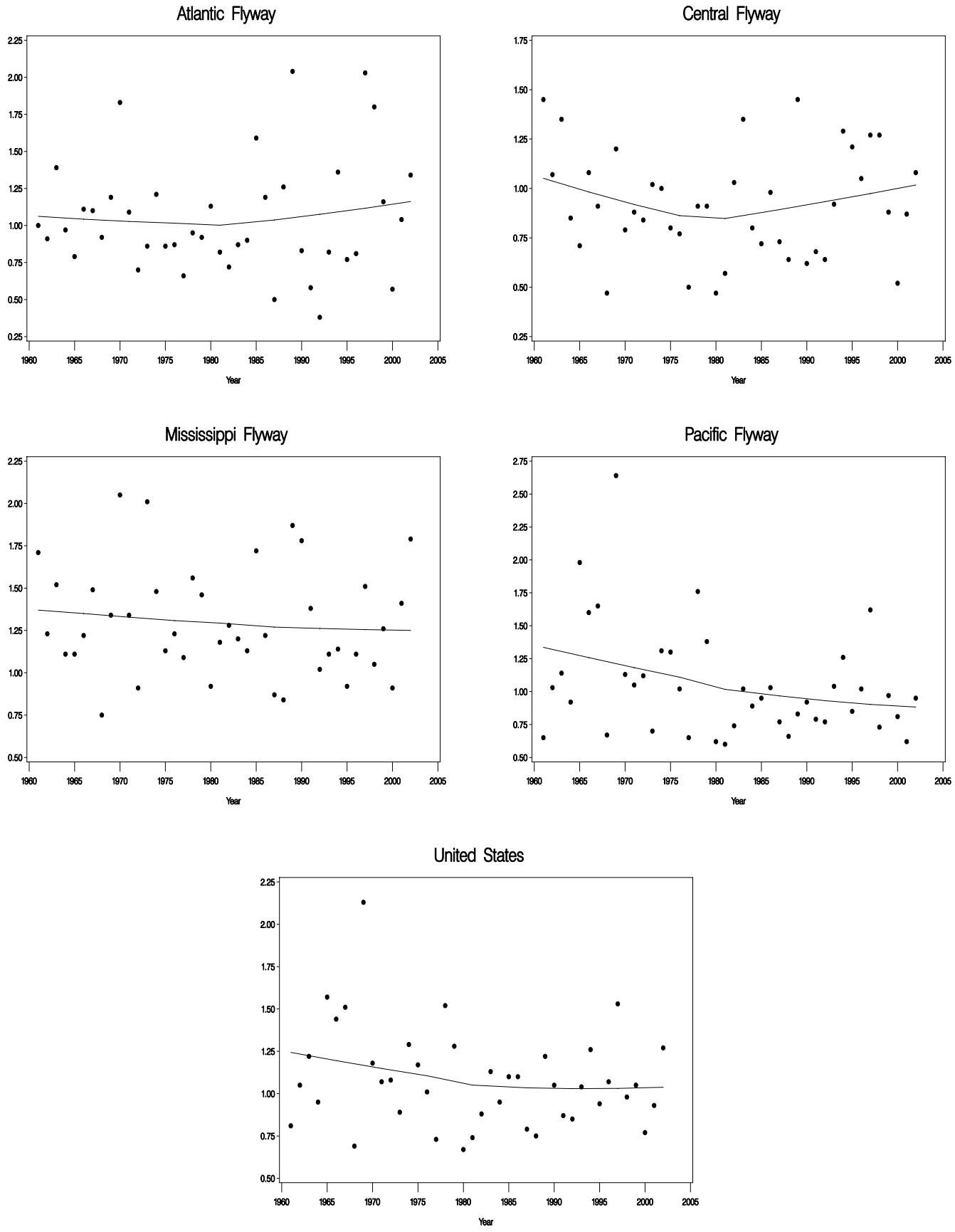


Figure 5. Age ratios of Northern pintails harvested in the United States, 1961-2002.

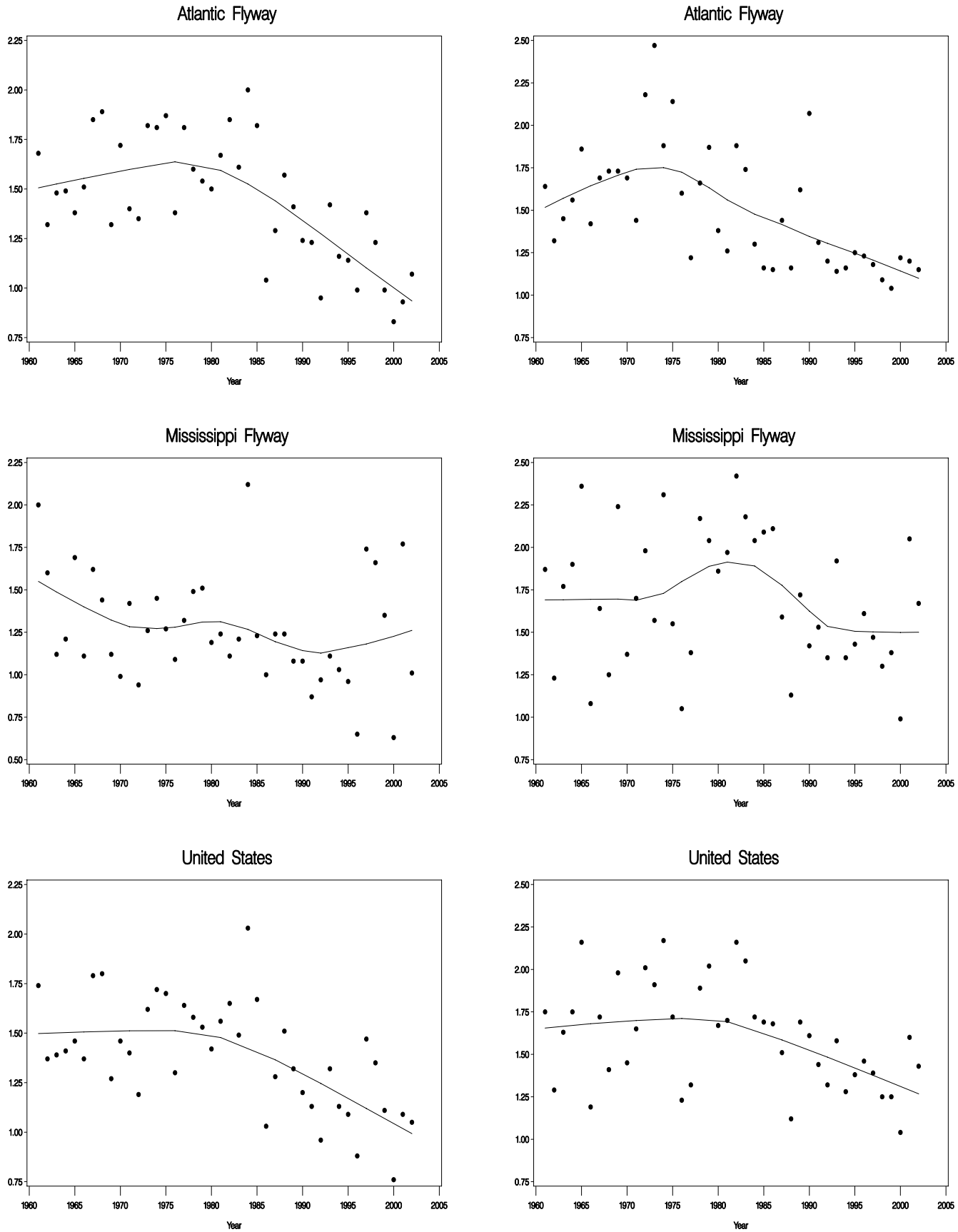


Figure 6. Age ratios of American black ducks (left column) and wood ducks (right column) harvested in the United States, 1961-2002.

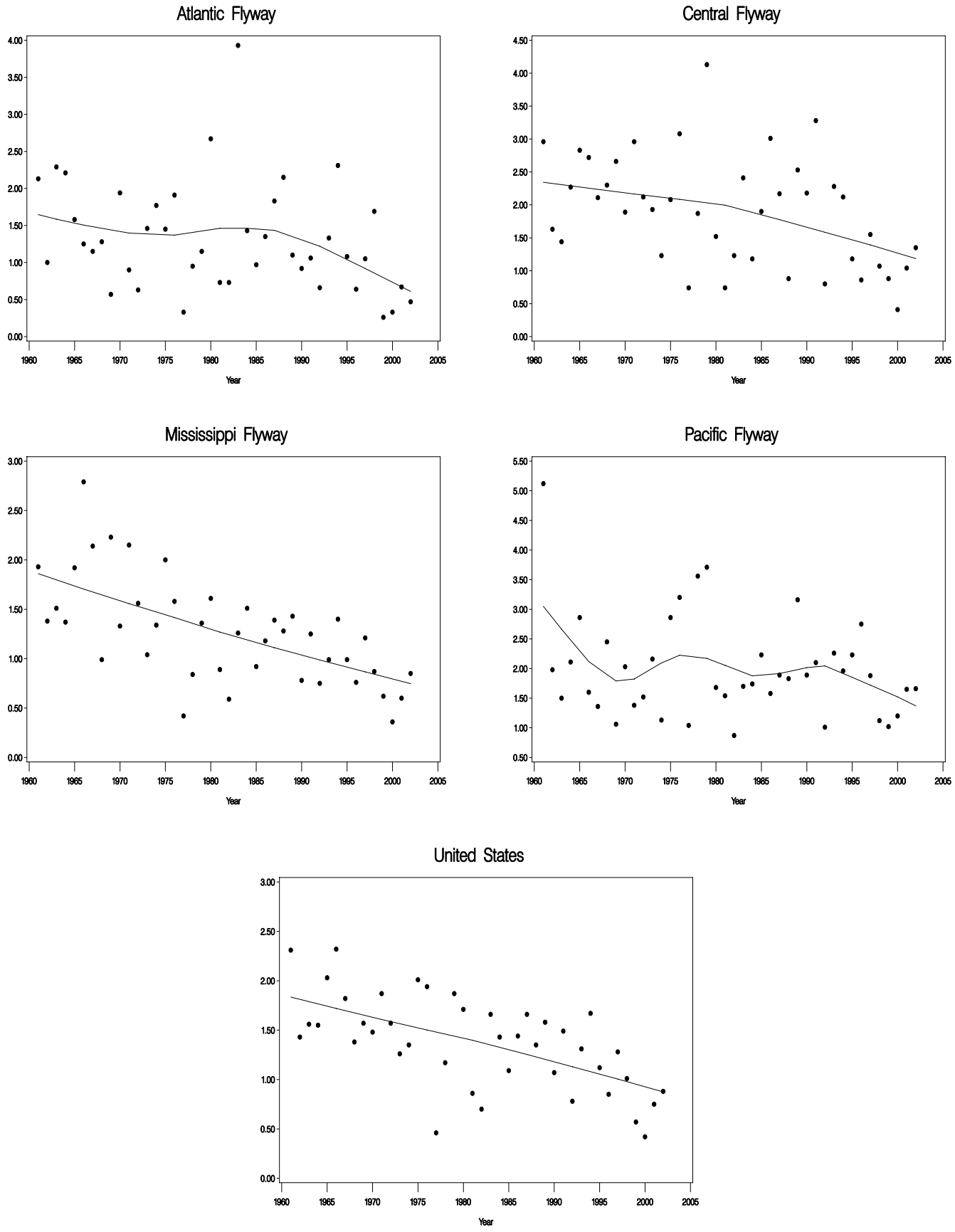


Figure 7. Age ratios of lesser scaup harvested in the United States, 1961-2002.

Table 14. Estimates of mourning dove harvest and hunter activity during the 2001 and 2002 hunting seasons.

State and	Harvest		Active Hunters		Days Afield		Seasonal Harvest Per Hunter	
Management Unit	2001	2002	2001	2002	2001	2002	2001	2002
Alabama	988,700 ± 14%	1,273,400 ± 12%	54,500 ± 8%	59,200 ± 7%	159,800 ± 12%	170,500 ± 10%	18.2 ± 17%	21.5 ± 14%
Delaware	67,400 ± 19%	79,000 ± 25%	3,500 ± 20%	3,500 ± 19%	11,800 ± 20%	12,600 ± 22%	19.0 ± 27%	22.3 ± 32%
Florida	590,400 ± 48%	371,800 ± 22%	32,800 ± 28%	21,800 ± 23%	99,900 ± 34%	72,900 ± 28%	18.0 ± 55%	17.1 ± 32%
Georgia	1,628,000 ± 19%	1,232,400 ± 20%	66,000 ± 13%	56,800 ± 12%	247,500 ± 19%	188,300 ± 21%	24.7 ± 24%	21.7 ± 23%
Illinois	635,800 ± 14%	693,700 ± 17%	37,600 ± 10%	32,900 ± 9%	116,700 ± 14%	118,800 ± 15%	16.9 ± 17%	21.1 ± 20%
Indiana	324,000 ± 20%	363,900 ± 20%	17,000 ± 15%	18,100 ± 15%	52,100 ± 15%	62,000 ± 17%	19.1 ± 25%	20.1 ± 25%
Kentucky	875,200 ± 21%	802,100 ± 16%	39,400 ± 12%	39,200 ± 10%	115,400 ± 18%	118,700 ± 17%	22.2 ± 24%	20.5 ± 19%
Louisiana	489,500 ± 27%	464,400 ± 28%	26,000 ± 21%	27,000 ± 24%	79,900 ± 35%	73,600 ± 24%	18.9 ± 35%	17.2 ± 37%
Maryland	219,400 ± 35%	173,300 ± 39%	12,900 ± 23%	9,200 ± 21%	36,100 ± 23%	29,900 ± 32%	17.0 ± 42%	18.8 ± 45%
Mississippi	640,500 ± 32%	817,700 ± 14%	25,500 ± 14%	28,300 ± 12%	81,100 ± 29%	89,700 ± 15%	25.1 ± 35%	28.9 ± 18%
North Carolina	891,400 ± 16%	792,200 ± 24%	62,400 ± 14%	48,000 ± 16%	166,800 ± 16%	131,400 ± 22%	14.3 ± 22%	16.5 ± 29%
Ohio	234,900 ± 22%	302,700 ± 14%	18,800 ± 32%	20,000 ± 25%	66,800 ± 22%	87,400 ± 32%	12.5 ± 39%	15.1 ± 29%
Pennsylvania	417,700 ± 17%	496,200 ± 28%	39,600 ± 17%	33,900 ± 16%	165,900 ± 20%	142,100 ± 18%	10.5 ± 24%	14.6 ± 32%
Rhode Island	1,400 ± 58%	3,200 ± 91%	600 ± 102%	300 ± 97%	1,100 ± 64%	1,000 ± 100%	2.6 ± 117%	9.3 ± 133%
South Carolina	732,500 ± 11%	944,900 ± 23%	36,300 ± 11%	43,200 ± 12%	127,100 ± 21%	142,000 ± 20%	20.2 ± 15%	21.9 ± 26%
Tennessee	798,400 ± 38%	842,800 ± 56%	37,900 ± 41%	56,500 ± 48%	99,800 ± 29%	155,600 ± 50%	21.0 ± 56%	14.9 ± 74%
Virginia	415,200 ± 16%	410,800 ± 14%	24,300 ± 10%	27,600 ± 9%	74,900 ± 14%	81,300 ± 12%	17.1 ± 19%	14.9 ± 17%
West Virginia	30,800 ± 37%	22,500 ± 22%	1,900 ± 25%	1,800 ± 19%	5,900 ± 24%	4,600 ± 24%	16.6 ± 45%	12.8 ± 29%
Eastern Unit Total	9,981,400 ± 7%	10,087,000 ± 7%	536,900[a]	527,400[a]	1,708,600 ± 6%	1,682,500 ± 7%		
Arkansas	932,000 ± 23%	774,700 ± 16%	41,700 ± 16%	37,700 ± 15%	125,000 ± 20%	114,300 ± 18%	22.3 ± 28%	20.6 ± 22%
Colorado	206,200 ± 14%	249,800 ± 14%	16,700 ± 13%	17,600 ± 8%	42,900 ± 16%	52,800 ± 13%	12.3 ± 20%	14.2 ± 16%
Kansas	645,700 ± 13%	849,800 ± 12%	38,200 ± 7%	37,100 ± 7%	138,400 ± 11%	135,200 ± 10%	16.9 ± 14%	22.9 ± 14%
Missouri	475,800 ± 24%	455,000 ± 32%	33,800 ± 15%	27,000 ± 26%	106,000 ± 22%	79,600 ± 25%	14.1 ± 28%	16.9 ± 41%
Montana	31,300 ± 80%	14,700 ± 25%	2,400 ± 56%	2,000 ± 41%	6,400 ± 68%	4,500 ± 39%	13.0 ± 98%	7.5 ± 48%
Nebraska	293,300 ± 12%	291,300 ± 12%	16,500 ± 10%	15,700 ± 10%	62,800 ± 13%	52,200 ± 11%	17.8 ± 15%	18.5 ± 16%
New Mexico	238,300 ± 23%	246,100 ± 35%	9,300 ± 14%	8,400 ± 19%	45,500 ± 22%	33,100 ± 26%	25.7 ± 27%	29.3 ± 40%
North Dakota	66,500 ± 19%	79,100 ± 50%	4,300 ± 32%	5,500 ± 35%	14,200 ± 22%	17,900 ± 43%	15.6 ± 37%	14.3 ± 61%
Oklahoma	398,600 ± 38%	512,500 ± 35%	22,400 ± 19%	29,300 ± 19%	72,100 ± 29%	92,800 ± 34%	17.8 ± 42%	17.5 ± 40%
South Dakota	194,700 ± 26%	138,500 ± 23%	12,300 ± 25%	9,300 ± 23%	40,100 ± 25%	29,100 ± 21%	15.8 ± 36%	14.9 ± 32%
Texas	7,599,600 ± 21%	6,633,800 ± 10%	291,900 ± 10%	293,300 ± 10%	1,268,600 ± 15%	1,184,500 ± 11%	26.0 ± 23%	22.6 ± 14%
Wyoming	29,100 ± 24%	30,300 ± 47%	3,300 ± 35%	2,800 ± 30%	8,000 ± 41%	6,200 ± 35%	8.9 ± 43%	10.8 ± 56%
Central Unit Total	11,111,200 ± 14%	10,275,500 ± 7%	492,700[a]	485,700[a]	1,929,800 ± 10%	1,082,600 ± 8%		
Arizona	981,000 ± 9%	933,900 ± 9%	42,100 ± 5%	42,600 ± 5%	146,300 ± 9%	140,400 ± 8%	23.3 ± 10%	21.9 ± 10%
California	1,149,700 ± 8%	1,024,200 ± 8%	72,300 ± 6%	68,400 ± 6%	215,900 ± 7%	201,500 ± 8%	15.9 ± 10%	15.0 ± 10%
Idaho	107,000 ± 45%	118,700 ± 17%	10,400 ± 26%	12,400 ± 17%	33,800 ± 38%	32,600 ± 19%	10.2 ± 52%	9.5 ± 24%
Nevada	37,700 ± 29%	71,500 ± 50%	4,800 ± 22%	5,200 ± 21%	12,000 ± 30%	17,800 ± 37%	7.8 ± 37%	13.8 ± 54%
Oregon	65,800 ± 24%	62,700 ± 17%	7,400 ± 16%	6,800 ± 14%	21,500 ± 19%	19,400 ± 19%	8.9 ± 29%	9.3 ± 23%
Utah	76,100 ± 21%	88,800 ± 16%	12,800 ± 18%	11,600 ± 14%	29,800 ± 22%	33,400 ± 20%	6.0 ± 27%	7.6 ± 22%
Washington	66,100 ± 20%	56,800 ± 21%	7,900 ± 39%	5,800 ± 29%	19,200 ± 42%	14,700 ± 32%	8.3 ± 44%	9.8 ± 36%
Western Unit Total	2,483,400 ± 5%	2,356,600 ± 5%	157,700[a]	152,900[a]	478,500 ± 6%	459,700 ± 5%		
U.S. Total	23,576,000 ± 7%	22,719,100 ± 4%	1,187,200[a]	1,166,000[a]	4,116,900 ± 5%	3,944,600 ± 5%		

[a] Hunter number estimates at the management unit and national levels may be biased high because the HIP sample frames are state-specific; therefore hunters are counted twice if they hunt in more than one state. Variance inestimable.

Table 15. Estimates of white-winged dove harvest and hunter activity during the 2001 and 2002 hunting seasons.

State and	Harvest		Active Hunters		Days Afield		Seasonal Harvest Per Hunter	
Management Unit	2001	2002	2001	2002	2001	2002	2001	2002
Florida	5,800 ± 105%	3,600 ± 95%	3,600 ± 107%	800 ± 49%	6,200 ± 100%	4,900 ± 64%	1.6 ± 150%	4.5 ± 107%
Eastern Unit Total	5,800 ± 105%	3,600 ± 95%	3,600 ± 107%	800 ± 49%	6,200 ± 100%	4,900 ± 64%		
New Mexico	31,300 ± 43%	32,000 ± 47%	3,100 ± 29%	3,600 ± 35%	16,600 ± 41%	11,000 ± 31%	10.2 ± 52%	8.9 ± 59%
Texas	965,700 ± 32%	943,400 ± 27%	89,800 ± 20%	87,600 ± 19%	367,500 ± 34%	386,900 ± 23%	10.7 ± 38%	10.8 ± 33%
Central Unit Total	996,900 ± 31%	975,400 ± 26%	92,900[a]	91,200[a]	384,200 ± 32%	397,900 ± 22%		
Arizona	86,500 ± 16%	120,400 ± 15%	21,100 ± 10%	22,700 ± 10%	62,500 ± 13%	72,700 ± 12%	4.1 ± 19%	5.3 ± 18%
California	44,500 ± 29%	34,000 ± 42%	8,200 ± 22%	7,000 ± 24%	21,900 ± 24%	23,700 ± 34%	5.4 ± 36%	4.9 ± 49%
Nevada	100 ± 112%	100 ± 112%	100 ± 67%	400 ± 118%	100 ± 86%	1,200 ± 118%	1.2 ± 131%	0.1 ± 163%
Western Unit Total	131,100 ± 15%	154,500 ± 15%	29,400[a]	30,000[a]	84,500 ± 11%	97,600 ± 12%		
U.S. Total	1,133,900 ± 27%	1,133,500 ± 23%	125,900[a]	122,000[a]	474,900 ± 26%	500,400 ± 18%		

[a]Hunter number estimates at the management unit and national levels may be biased high because the HIP sample frames are state-specific; therefore hunters are counted twice if they hunt in more than one state. Variance inestimable.

Table 16. Estimates of band-tailed pigeon harvest and hunter activity during the 2001 and 2002 hunting seasons.

State and	Harvest		Active Hunters		Days Afield		Seasonal Harvest Per Hunter	
Management Unit	2001	2002	2001	2002	2001	2002	2001	2002
Arizona	400 ± 118%	1,000 ± 153%	500 ± 65%	400 ± 85%	1,000 ± 71%	1,000 ± 110%	0.8 ± 135%	2.7 ± 175%
Colorado	600 ± 94%	100 ± 117%	500 ± 61%	200 ± 101%	800 ± 54%	400 ± 105%	1.2 ± 112%	0.8 ± 155%
New Mexico	600 ± 126%	600 ± 158%	500 ± 53%	300 ± 81%	1,800 ± 64%	900 ± 109%	1.1 ± 136%	2.3 ± 178%
Utah	300 ± 169%	400 ± 149%	200 ± 97%	200 ± 98%	700 ± 133%	500 ± 104%	1.8 ± 194%	1.9 ± 179%
Four Corners Total	2,000 ± 62%	2,100 ± 89%	1,800[a]	1,000[a]	4,300 ± 39%	2,800 ± 58%		
California	8,300 ± 49%	4,200 ± 39%	2,600 ± 34%	2,500 ± 30%	7,500 ± 39%	4,600 ± 35%	3.2 ± 60%	1.7 ± 49%
Oregon	5,000 ± 45%	4,000 ± 36%	1,700 ± 31%	1,300 ± 25%	4,700 ± 39%	3,400 ± 28%	3.0 ± 55%	3.0 ± 44%
Pacific Coast Total	13,200 ± 35%	8,200 ± 27%	4,200[a]	3,800[a]	12,200 ± 28%	7,900 ± 23%		
U.S. Total	15,200 ± 32%	10,400 ± 28%	6,000[a]	4,800[a]	16,500 ± 23%	10,700 ± 23%		

[a]Hunter number estimates at the management unit and national levels may be biased high because the HIP sample frames are state-specific; therefore hunters are counted twice if they hunt in more than one state. Variance inestimable.

Table 17. Estimates of woodcock harvest and hunter activity during the 2001 and 2002 hunting seasons.

State and	Harvest		Active Hunters		Days Afield		Seasonal Harvest Per Hunter	
Management Unit	2001	2002	2001	2002	2001	2002	2001	2002
Connecticut	3,600 ± 62%	4,600 ± 39%	1,800 ± 41%	1,600 ± 37%	7,700 ± 46%	9,300 ± 67%	2.0 ± 75%	2.8 ± 54%
Delaware	200 ± 72%	500 ± 139%	300 ± 116%	400 ± 122%	5,100 ± 168%	600 ± 82%	0.6 ± 136%	1.3 ± 185%
Florida	2,100 ± 123%	100 ± 140%	2,600 ± 149%	1,300 ± 184%	9,900 ± 95%	2,600 ± 187%	0.8 ± 193%	0.1 ± 231%
Georgia	1,200 ± 105%	600 ± 130%	400 ± 72%	2,500 ± 179%	1,400 ± 105%	5,400 ± 168%	3.1 ± 127%	0.2 ± 221%
Maine	47,400 ± 57%	17,000 ± 77%	11,900 ± 40%	4,400 ± 56%	64,900 ± 51%	16,000 ± 46%	4.0 ± 70%	3.9 ± 96%
Maryland	1,600 ± 127%	600 ± 81%	700 ± 139%	600 ± 150%	1,500 ± 73%	1,100 ± 89%	2.2 ± 188%	0.9 ± 170%
Massachussetts	2,600 ± 37%	2,900 ± 23%	1,200 ± 33%	1,100 ± 35%	5,800 ± 36%	5,300 ± 36%	2.1 ± 50%	2.8 ± 42%
New Hampshire	6,300 ± 35%	5,400 ± 20%	2,000 ± 40%	1,500 ± 35%	9,900 ± 39%	7,100 ± 23%	3.2 ± 54%	3.6 ± 41%
New Jersey	2,100 ± 30%	2,900 ± 57%	800 ± 68%	1,000 ± 69%	5,100 ± 108%	5,000 ± 86%	2.8 ± 75%	3.0 ± 89%
New York	6,300 ± 21%	16,600 ± 64%	5,300 ± 37%	5,600 ± 36%	25,000 ± 41%	30,800 ± 47%	1.2 ± 43%	2.9 ± 74%
North Carolina	6,900 ± 84%	2,100 ± 132%	1,300 ± 57%	1,000 ± 67%	8,100 ± 75%	9,800 ± 105%	5.5 ± 102%	2.1 ± 148%
Pennsylvania	19,900 ± 52%	10,000 ± 42%	13,400 ± 45%	10,500 ± 44%	53,000 ± 52%	44,100 ± 57%	1.5 ± 69%	1.0 ± 61%
Rhode Island	300 ± 63%	500 ± 87%	300 ± 88%	200 ± 82%	900 ± 105%	800 ± 73%	0.9 ± 108%	2.5 ± 120%
South Carolina	5,400 ± 171%	3,900 ± 163%	3,900 ± 92%	2,300 ± 129%	10,200 ± 107%	4,900 ± 122%	1.4 ± 194%	1.7 ± 208%
Vermont	3,100 ± 28%	1,900 ± 31%	900 ± 39%	1,100 ± 45%	4,700 ± 36%	6,400 ± 57%	3.5 ± 48%	1.7 ± 54%
Virginia	1,400 ± 29%	1,200 ± 40%	1,100 ± 127%	1,900 ± 97%	3,700 ± 107%	7,500 ± 105%	1.3 ± 130%	0.6 ± 105%
West Virginia	1,300 ± 90%	400 ± 38%	400 ± 84%	100 ± 23%	1,700 ± 108%	400 ± 33%	2.8 ± 123%	3.8 ± 45%
Eastern Unit Total	111,600 ± 28%	71,000 ± 27%	48,300[a]	37,100[a]	218,700 ± 22%	157,000 ± 23%		
Alabama	200 ± 78%	400 ± 76%	2,000 ± 131%	1,900 ± 127%	3,300 ± 125%	8,300 ± 129%	0.1 ± 153%	0.2 ± 148%
Arkansas	1,300 ± 156%	300 ± 100%	2,000 ± 175%	1,900 ± 177%	2,900 ± 127%	2,600 ± 130%	0.7 ± 235%	0.1 ± 204%
Illinois	4,300 ± 125%	4,900 ± 119%	2,900 ± 101%	2,300 ± 102%	10,900 ± 102%	4,400 ± 93%	1.5 ± 161%	2.1 ± 157%
Indiana	2,800 ± 96%	1,200 ± 35%	1,800 ± 105%	1,000 ± 140%	6,800 ± 118%	3,200 ± 91%	1.6 ± 143%	1.2 ± 144%
Iowa	1,000 ± 97%	300 ± 82%	1,600 ± 95%	600 ± 155%	4,700 ± 80%	5,000 ± 184%	0.6 ± 136%	0.5 ± 175%
Kansas	100 ± 96%	2,800 ± 137%	800 ± 190%	2,800 ± 96%	6,600 ± 193%	4,200 ± 111%	0.1 ± 212%	1.0 ± 167%
Kentucky	1,000 ± 77%	2,900 ± 136%	200 ± 52%	2,200 ± 124%	1,200 ± 79%	10,100 ± 127%	4.7 ± 93%	1.3 ± 184%
Louisiana	5,400 ± 59%	21,100 ± 138%	3,100 ± 139%	3,300 ± 147%	27,500 ± 155%	23,400 ± 165%	1.8 ± 151%	6.5 ± 202%
Michigan	116,200 ± 35%	97,000 ± 26%	31,300 ± 25%	31,400 ± 18%	151,400 ± 25%	168,900 ± 23%	3.7 ± 43%	3.1 ± 31%
Minnesota	46,400 ± 71%	9,200 ± 31%	14,400 ± 49%	8,200 ± 66%	55,600 ± 47%	49,300 ± 92%	3.2 ± 86%	1.1 ± 73%
Mississippi	600 ± 59%	700 ± 60%	100 ± 33%	2,800 ± 187%	400 ± 43%	5,900 ± 178%	8.6 ± 68%	0.3 ± 196%
Missouri	4,400 ± 114%	700 ± 39%	2,600 ± 101%	3,100 ± 125%	4,300 ± 89%	5,400 ± 113%	1.7 ± 152%	0.2 ± 131%
Nebraska	100 ± 99%	200 ± 83%	<50 ± 58%	<50 ± 60%	100 ± 72%	200 ± 80%	3.1 ± 115%	5.4 ± 102%
Ohio	6,600 ± 87%	3,100 ± 45%	3,100 ± 134%	5,200 ± 108%	9,200 ± 93%	23,100 ± 139%	2.2 ± 160%	0.6 ± 117%
Oklahoma	100 ± 97%	3,000 ± 184%	<50 ± 63%	2,900 ± 135%	200 ± 82%	7,200 ± 136%	3.6 ± 115%	1.1 ± 228%
Tennessee	700 ± 195%	11,900 ± 143%	100 ± 195%	4,400 ± 179%	700 ± 195%	7,700 ± 121%	5.0 ± 276%	2.7 ± 229%
Texas	5,300 ± 196%	700 ± 195%	10,400 ± 192%	18,600 ± 136%	12,800 ± 162%	46,500 ± 140%	0.5 ± 274%	0.0 ± 238%
Wisconsin	33,700 ± 38%	34,000 ± 34%	14,800 ± 32%	17,600 ± 30%	68,700 ± 34%	58,900 ± 26%	2.3 ± 49%	1.9 ± 45%
Central Unit Total	230,300 ± 24%	194,500 ± 23%	91,300[a]	110,100[a]	367,300 ± 20%	434,400 ± 24%		
U.S. Total	341,900 ± 19%	265,600 ± 18%	139,600[a]	147,200[a]	586,000 ± 15%	591,300 ± 19%		

[a] Hunter number estimates at the management unit and national levels may be biased high because the HIP sample frames are state-specific; therefore hunters are counted twice if they hunt in more than one state. Variance inestimable.

Table 18. Estimates of snipe harvest and hunter activity during the 2001 and 2002 hunting seasons.

	Harvest		Active Hunters		Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	2001	2002	2001	2002	2001	2002	2001	2002
Connecticut	<50 ± 167%	200 ± 104%	100 ± 186%	100 ± 85%	100 ± 155%	300 ± 96%	<0.05 ± 250%	2.0 ± 135%
Delaware	0	0	0	0	0	0	0	0
Florida	16,000 ± 89%	24,100 ± 47%	1,200 ± 66%	3,400 ± 48%	4,200 ± 75%	11,200 ± 47%	13.3 ± 111%	7.2 ± 67%
Georgia	100 ± 194%	1,200 ± 189%	100 ± 194%	1,200 ± 189%	100 ± 194%	1,200 ± 182%	1.0 ± 275%	1.0 ± 267%
Maine	900 ± 145%	0	300 ± 111%	0	1,500 ± 132%	0	3.0 ± 182%	0
Maryland	<50 ± 188%	100 ± 163%	500 ± 192%	<50 ± 106%	2,700 ± 194%	100 ± 136%	0.1 ± 268%	5.7 ± 195%
Massachusetts	100 ± 89%	<50 ± 136%	<50 ± 56%	100 ± 163%	100 ± 70%	300 ± 174%	6.7 ± 105%	0.2 ± 213%
New Hampshire	300 ± 192%	200 ± 105%	100 ± 169%	100 ± 134%	200 ± 163%	700 ± 160%	2.6 ± 256%	1.5 ± 170%
New Jersey	1,100 ± 122%	200 ± 116%	300 ± 115%	300 ± 119%	800 ± 106%	1,000 ± 116%	3.7 ± 168%	0.8 ± 167%
New York	500 ± 88%	300 ± 117%	100 ± 56%	400 ± 167%	400 ± 59%	1,800 ± 156%	4.8 ± 105%	0.7 ± 203%
North Carolina	1,500 ± 86%	400 ± 105%	300 ± 76%	400 ± 69%	1,500 ± 103%	900 ± 77%	5.0 ± 115%	1.0 ± 125%
Pennsylvania	5,100 ± 145%	0	1,700 ± 136%	<50 ± 183%	7,700 ± 145%	<50 ± 183%	3.0 ± 199%	0
Rhode Island	<50 ± 180%	<50 ± 175%	<50 ± 180%	<50 ± 175%	<50 ± 180%	<50 ± 175%	2.0 ± 255%	1.0 ± 248%
South Carolina	200 ± 193%	200 ± 193%	<50 ± 193%	<50 ± 193%	100 ± 193%	<50 ± 193%	6.0 ± 273%	6.0 ± 273%
Vermont	<50 ± 191%	0	<50 ± 191%	<50 ± 134%	100 ± 191%	<50 ± 134%	2.0 ± 271%	0
Virginia	200 ± 116%	600 ± 99%	100 ± 81%	100 ± 73%	200 ± 99%	400 ± 93%	2.8 ± 142%	7.8 ± 123%
West Virginia	0	0	100 ± 195%	0	200 ± 195%	0	0	0
Atlantic Flyway Total	26,100 ± 62%	27,500 ± 42%	4,900[a]	6,100[a]	19,800 ± 64%	18,100 ± 37%		
Alabama	1,600 ± 90%	2,000 ± 95%	100 ± 68%	100 ± 68%	600 ± 83%	800 ± 92%	11.0 ± 113%	14.3 ± 117%
Arkansas	300 ± 195%	1,000 ± 154%	100 ± 195%	100 ± 111%	100 ± 195%	400 ± 135%	2.0 ± 276%	12.7 ± 190%
Illinois	100 ± 126%	2,700 ± 178%	<50 ± 89%	700 ± 180%	300 ± 119%	900 ± 138%	2.8 ± 155%	4.0 ± 253%
Indiana	600 ± 103%	1,900 ± 134%	100 ± 67%	400 ± 154%	400 ± 77%	2,500 ± 158%	7.4 ± 122%	4.7 ± 205%
Iowa	400 ± 95%	1,000 ± 98%	100 ± 68%	800 ± 124%	400 ± 100%	1,600 ± 132%	6.0 ± 117%	1.4 ± 158%
Kentucky	0	0	0	0	0	0	0	0
Louisiana	1,900 ± 141%	7,400 ± 132%	200 ± 111%	2,100 ± 143%	1,000 ± 136%	3,900 ± 98%	10.7 ± 180%	3.5 ± 194%
Michigan	5,200 ± 137%	3,200 ± 155%	2,200 ± 148%	2,500 ± 109%	5,300 ± 97%	12,000 ± 117%	2.4 ± 202%	1.3 ± 189%
Minnesota	10,400 ± 167%	200 ± 139%	1,700 ± 167%	1,500 ± 188%	6,100 ± 104%	1,900 ± 160%	6.0 ± 236%	0.1 ± 234%
Mississippi	<50 ± 185%	500 ± 125%	<50 ± 130%	100 ± 108%	<50 ± 132%	100 ± 123%	2.5 ± 226%	8.3 ± 165%
Missouri	1,600 ± 123%	4,800 ± 140%	1,500 ± 132%	3,100 ± 134%	3,100 ± 131%	3,300 ± 127%	1.1 ± 180%	1.5 ± 194%
Ohio	300 ± 195%	100 ± 194%	2,300 ± 190%	100 ± 194%	2,500 ± 176%	100 ± 194%	0.1 ± 272%	1.0 ± 275%
Tennessee	500 ± 144%	0	4,900 ± 189%	0	19,300 ± 193%	0	0.1 ± 238%	0
Wisconsin	0	700 ± 154%	<50 ± 194%	1,900 ± 157%	100 ± 194%	4,300 ± 135%	0	0.4 ± 220%
Mississippi Flyway Total	22,900 ± 84%	25,400 ± 56%	13,300[a]	13,300[a]	39,100 ± 99%	31,900 ± 54%		

Table 18. Estimates of snipe harvest and hunter activity during the 2001 and 2002 hunting seasons.

	Harvest		Active Hunters		Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	2001	2002	2001	2002	2001	2002	2001	2002
Colorado	1,900 ± 81%	300 ± 126%	800 ± 137%	200 ± 72%	1,400 ± 88%	300 ± 73%	2.3 ± 160%	1.7 ± 145%
Kansas	3,500 ± 184%	200 ± 101%	500 ± 179%	100 ± 61%	500 ± 149%	200 ± 73%	7.8 ± 257%	4.6 ± 118%
Nebraska	300 ± 63%	300 ± 46%	<50 ± 37%	<50 ± 37%	200 ± 46%	200 ± 46%	5.7 ± 74%	5.7 ± 59%
New Mexico	600 ± 150%	<50 ± 165%	200 ± 184%	<50 ± 165%	500 ± 120%	<50 ± 165%	2.5 ± 237%	7.0 ± 234%
North Dakota	4,800 ± 179%	700 ± 146%	600 ± 175%	500 ± 186%	1,400 ± 156%	700 ± 146%	7.8 ± 251%	1.3 ± 237%
Oklahoma	0	0	1,100 ± 196%	0	3,200 ± 196%	0	0	0
South Dakota	0	100 ± 135%	700 ± 196%	<50 ± 132%	700 ± 196%	100 ± 160%	0	2.5 ± 189%
Texas	3,800 ± 164%	2,200 ± 195%	700 ± 112%	200 ± 195%	1,600 ± 121%	1,000 ± 195%	5.7 ± 199%	14.0 ± 276%
Wyoming	400 ± 147%	1,600 ± 99%	100 ± 171%	400 ± 79%	300 ± 161%	700 ± 83%	3.7 ± 225%	4.4 ± 127%
Central Flyway Total	15,300 ± 82%	5,400 ± 88%	4,700[a]	1,400[a]	9,800 ± 74%	3,200 ± 70%		
Arizona	200 ± 118%	700 ± 111%	<50 ± 89%	100 ± 88%	100 ± 94%	1,300 ± 122%	6.0 ± 148%	6.3 ± 142%
California	13,300 ± 107%	2,400 ± 100%	4,200 ± 113%	600 ± 60%	9,300 ± 103%	1,900 ± 78%	3.2 ± 156%	3.8 ± 116%
Idaho	<50 ± 185%	100 ± 109%	<50 ± 130%	<50 ± 80%	<50 ± 137%	200 ± 108%	2.0 ± 227%	2.8 ± 136%
Montana	<50 ± 93%	2,600 ± 108%	<50 ± 92%	900 ± 123%	<50 ± 92%	2,500 ± 111%	5.0 ± 131%	3.0 ± 163%
Nevada	100 ± 191%	400 ± 137%	300 ± 131%	200 ± 161%	300 ± 125%	300 ± 152%	0.5 ± 232%	2.5 ± 211%
Oregon	6,600 ± 154%	400 ± 168%	800 ± 138%	1,200 ± 106%	4,100 ± 149%	6,300 ± 117%	8.0 ± 207%	0.4 ± 199%
Utah	200 ± 98%	600 ± 72%	100 ± 58%	200 ± 38%	400 ± 113%	900 ± 78%	2.8 ± 114%	3.4 ± 82%
Washington	0	0	0	400 ± 196%	0	2,000 ± 196%	0	0
Pacific Flyway Total	20,500 ± 85%	7,200 ± 54%	5,400[a]	3,600[a]	14,300 ± 80%	15,300 ± 59%		
Alaska	700 ± 61%	2,600 ± 115%	200 ± 42%	500 ± 134%	700 ± 53%	2,700 ± 156%	3.9 ± 74%	4.8 ± 177%
U.S. Total	85,500 ± 39%	68,200 ± 29%	28,600[a]	24,900[a]	83,700 ± 51%	71,300 ± 30%		

[a]Hunter number estimates at the management unit and national levels may be biased high because the HIP sample frames are state-specific; therefore hunters are counted twice if tl hunt in more than one state. Variance inestimable.

Table 21. Estimates of coot harvest and hunter activity during the 2001 and 2002 hunting seasons.

	Harvest		Active Hunters		Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	2001	2002	2001	2002	2001	2002	2001	2002
Connecticut	<50 ± 167%	300 ± 131%	<50 ± 167%	100 ± 95%	<50 ± 167%	300 ± 103%	4.0 ± 237%	3.5 ± 162%
Delaware	100 ± 184%	<50 ± 179%	100 ± 184%	<50 ± 179%	100 ± 167%	<50 ± 179%	1.0 ± 260%	2.0 ± 253%
Florida	0	2,100 ± 116%	4,800 ± 196%	900 ± 102%	4,800 ± 196%	2,700 ± 124%	0	2.4 ± 154%
Georgia	0	0	0	0	0	0	0	0
Maine	1,100 ± 195%	0	100 ± 195%	0	300 ± 195%	0	11.0 ± 276%	0
Maryland	600 ± 166%	<50 ± 184%	1,100 ± 135%	<50 ± 184%	3,300 ± 163%	<50 ± 184%	0.6 ± 214%	1.0 ± 260%
Massachusetts	600 ± 143%	<50 ± 121%	100 ± 148%	<50 ± 80%	800 ± 161%	<50 ± 94%	6.2 ± 206%	2.5 ± 145%
New Hampshire	0	500 ± 157%	0	100 ± 179%	0	200 ± 163%	0	5.8 ± 238%
New Jersey	1,100 ± 104%	700 ± 95%	400 ± 106%	700 ± 74%	2,400 ± 148%	1,400 ± 75%	2.8 ± 148%	1.0 ± 120%
New York	4,300 ± 156%	1,400 ± 153%	800 ± 119%	500 ± 153%	1,500 ± 103%	3,300 ± 168%	5.4 ± 196%	3.0 ± 217%
North Carolina	1,200 ± 89%	300 ± 194%	400 ± 64%	100 ± 136%	2,500 ± 123%	800 ± 144%	2.9 ± 110%	2.5 ± 237%
Pennsylvania	1,900 ± 179%	<50 ± 183%	900 ± 188%	<50 ± 129%	2,700 ± 187%	100 ± 168%	2.1 ± 260%	0.5 ± 224%
Rhode Island	<50 ± 180%	<50 ± 175%	<50 ± 180%	<50 ± 175%	100 ± 180%	<50 ± 175%	5.0 ± 255%	4.0 ± 248%
South Carolina	400 ± 193%	500 ± 162%	<50 ± 193%	100 ± 95%	100 ± 193%	700 ± 110%	12.0 ± 273%	4.5 ± 188%
Vermont	0	<50 ± 191%	0	<50 ± 191%	0	<50 ± 191%	0	1.0 ± 270%
Virginia	1,000 ± 166%	700 ± 71%	100 ± 73%	100 ± 54%	700 ± 130%	1,300 ± 74%	9.3 ± 182%	5.5 ± 89%
West Virginia	100 ± 195%	0	100 ± 136%	0	1,100 ± 160%	0	1.0 ± 238%	0
Atlantic Flyway Total	12,400 ± 67%	6,700 ± 54%	9,000[a]	2,700[a]	20,200 ± 65%	10,800 ± 63%		
Alabama	<50 ± 191%	1,400 ± 125%	1,100 ± 192%	100 ± 108%	3,400 ± 194%	300 ± 122%	<0.05 ± 271%	23.0 ± 165%
Arkansas	1,800 ± 182%	500 ± 117%	300 ± 137%	100 ± 96%	500 ± 153%	500 ± 121%	7.0 ± 227%	4.8 ± 151%
Illinois	1,200 ± 63%	400 ± 87%	100 ± 45%	<50 ± 66%	1,000 ± 63%	300 ± 88%	12.1 ± 77%	7.3 ± 110%
Indiana	1,100 ± 99%	3,000 ± 109%	400 ± 144%	100 ± 67%	1,200 ± 120%	700 ± 80%	2.5 ± 175%	33.7 ± 127%
Iowa	700 ± 117%	300 ± 152%	900 ± 126%	400 ± 176%	1,100 ± 105%	5,800 ± 175%	0.8 ± 172%	0.7 ± 233%
Kentucky	0	2,300 ± 137%	0	1,600 ± 185%	0	1,700 ± 171%	0	1.4 ± 231%
Louisiana	186,400 ± 118%	160,000 ± 114%	8,500 ± 66%	6,600 ± 89%	37,100 ± 87%	31,200 ± 109%	22.0 ± 135%	24.4 ± 144%
Michigan	8,100 ± 196%	5,100 ± 136%	1,600 ± 196%	2,500 ± 105%	1,600 ± 196%	5,000 ± 115%	5.0 ± 277%	2.0 ± 172%
Minnesota	5,900 ± 105%	2,700 ± 76%	1,800 ± 156%	300 ± 59%	11,400 ± 152%	2,000 ± 76%	3.2 ± 188%	8.7 ± 96%
Mississippi	500 ± 134%	400 ± 191%	<50 ± 81%	<50 ± 191%	200 ± 98%	100 ± 191%	11.4 ± 157%	20.0 ± 270%
Missouri	200 ± 113%	300 ± 100%	<50 ± 73%	100 ± 76%	<50 ± 76%	300 ± 98%	4.2 ± 135%	4.5 ± 125%
Ohio	0	0	0	0	0	0	0	0
Tennessee	0	0	200 ± 137%	0	2,000 ± 171%	0	0	0
Wisconsin	8,500 ± 148%	2,600 ± 119%	2,800 ± 125%	1,800 ± 160%	9,500 ± 139%	2,700 ± 114%	3.1 ± 194%	1.4 ± 200%
Mississippi Flyway Total	214,400 ± 103%	179,000 ± 102%	17,800[a]	13,600[a]	69,100 ± 58%	50,700 ± 72%		

Table 21. Estimates of coot harvest and hunter activity during the 2001 and 2002 hunting seasons.

	Harvest		Active Hunters		Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	2001	2002	2001	2002	2001	2002	2001	2002
Colorado	300 ± 143%	100 ± 158%	100 ± 83%	100 ± 111%	200 ± 92%	100 ± 115%	3.0 ± 165%	1.7 ± 193%
Kansas	300 ± 168%	<50 ± 180%	<50 ± 106%	<50 ± 180%	100 ± 112%	<50 ± 180%	10.0 ± 198%	3.0 ± 255%
Nebraska	100 ± 58%	1,300 ± 192%	<50 ± 46%	400 ± 192%	200 ± 56%	900 ± 188%	2.7 ± 74%	3.0 ± 271%
New Mexico	400 ± 131%	<50 ± 139%	200 ± 192%	<50 ± 114%	500 ± 129%	<50 ± 139%	1.8 ± 233%	6.0 ± 180%
North Dakota	300 ± 81%	1,400 ± 109%	100 ± 54%	500 ± 182%	200 ± 111%	3,300 ± 175%	4.3 ± 97%	2.6 ± 212%
Oklahoma	200 ± 194%	0	1,100 ± 187%	0	2,300 ± 183%	0	0.1 ± 269%	0
South Dakota	0	100 ± 149%	<50 ± 190%	<50 ± 132%	<50 ± 190%	100 ± 149%	0	4.0 ± 199%
Texas	1,100 ± 196%	0	6,400 ± 189%	0	6,600 ± 183%	0	0.2 ± 272%	0
Wyoming	300 ± 114%	500 ± 182%	100 ± 165%	100 ± 180%	100 ± 138%	400 ± 189%	3.1 ± 201%	6.9 ± 255%
Central Flyway Total	3,000 ± 81%	3,500 ± 89%	8,100[a]	1,200[a]	10,100 ± 126%	4,900 ± 125%		
Arizona	400 ± 108%	100 ± 192%	<50 ± 72%	<50 ± 192%	200 ± 94%	800 ± 192%	9.8 ± 130%	3.0 ± 272%
California	30,900 ± 133%	6,400 ± 141%	4,300 ± 110%	2,000 ± 149%	11,700 ± 119%	2,700 ± 116%	7.2 ± 173%	3.2 ± 205%
Idaho	400 ± 147%	3,900 ± 105%	<50 ± 106%	1,300 ± 103%	100 ± 114%	5,500 ± 135%	15.0 ± 181%	2.9 ± 147%
Montana	<50 ± 116%	2,400 ± 196%	<50 ± 71%	400 ± 196%	<50 ± 91%	1,600 ± 196%	2.0 ± 136%	6.0 ± 277%
Nevada	1,300 ± 117%	200 ± 69%	300 ± 125%	<50 ± 39%	400 ± 89%	400 ± 99%	4.5 ± 171%	5.4 ± 79%
Oregon	10,700 ± 141%	800 ± 138%	1,200 ± 112%	800 ± 132%	5,700 ± 146%	2,800 ± 140%	8.7 ± 180%	1.0 ± 191%
Utah	2,300 ± 93%	1,300 ± 95%	600 ± 143%	600 ± 141%	6,000 ± 142%	1,600 ± 107%	3.9 ± 171%	2.3 ± 170%
Washington	8,600 ± 196%	1,200 ± 145%	1,000 ± 196%	1,200 ± 112%	21,100 ± 196%	2,400 ± 121%	9.0 ± 277%	1.0 ± 183%
Pacific Flyway Total	54,600 ± 86%	16,200 ± 69%	7,500[a]	6,300[a]	45,400 ± 100%	17,700 ± 58%		
U.S. Total	284,400 ± 80%	205,400 ± 89%	42,300[a]	23,800[a]	144,800 ± 43%	84,100 ± 46%		

[a]Hunter number estimates at the management unit and national levels may be biased high because the HIP sample frames are state-specific; therefore hunters are counted twice if tl hunt in more than one state. Variance inestimable.

Table 19. Estimates of rail harvest and hunter activity during the 2001 and 2002 hunting seasons.

	Harvest		Active Hunters		Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	2001	2002	2001	2002	2001	2002	2001	2002
Connecticut	500 ± 110%	400 ± 181%	100 ± 179%	<50 ± 126%	400 ± 182%	200 ± 134%	6.1 ± 210%	8.4 ± 221%
Delaware	0	0	0	0	0	0	0	0
Florida	10,400 ± 195%	2,400 ± 141%	200 ± 195%	700 ± 113%	900 ± 195%	1,900 ± 151%	58.0 ± 276%	3.3 ± 180%
Georgia	10,800 ± 196%	0	700 ± 196%	0	1,400 ± 196%	0	16.0 ± 277%	0
Maine	0	0	100 ± 195%	0	600 ± 195%	0	0	0
Maryland	600 ± 174%	<50 ± 183%	<50 ± 93%	<50 ± 183%	100 ± 116%	<50 ± 183%	14.5 ± 197%	1.0 ± 259%
Massachusetts	100 ± 131%	<50 ± 136%	100 ± 176%	100 ± 173%	200 ± 140%	100 ± 156%	2.0 ± 219%	0.3 ± 220%
New Jersey	1,400 ± 37%	2,200 ± 40%	100 ± 19%	100 ± 20%	400 ± 36%	400 ± 31%	9.3 ± 42%	16.5 ± 45%
New York	<50 ± 181%	<50 ± 135%	300 ± 187%	<50 ± 89%	1,100 ± 193%	100 ± 109%	<0.05 ± 260%	0.8 ± 161%
North Carolina	400 ± 118%	100 ± 192%	100 ± 108%	<50 ± 192%	200 ± 124%	100 ± 192%	5.0 ± 160%	4.0 ± 272%
Pennsylvania	800 ± 191%	0	800 ± 194%	0	800 ± 191%	0	1.0 ± 272%	0
Rhode Island	<50 ± 180%	<50 ± 174%	<50 ± 180%	<50 ± 122%	<50 ± 180%	<50 ± 124%	1.0 ± 254%	0.5 ± 212%
South Carolina	1,800 ± 124%	1,500 ± 141%	100 ± 110%	100 ± 136%	200 ± 115%	100 ± 152%	19.7 ± 166%	24.5 ± 195%
Virginia	5,600 ± 49%	5,300 ± 32%	900 ± 151%	200 ± 25%	1,300 ± 105%	700 ± 43%	6.4 ± 159%	24.7 ± 41%
West Virginia	1,400 ± 195%	0	100 ± 136%	0	500 ± 138%	0	9.5 ± 238%	0
Atlantic Flyway Total	33,800 ± 88%	12,000 ± 38%	3,600[a]	1,300[a]	8,200 ± 57%	3,700 ± 80%		
Alabama	200 ± 114%	<50 ± 185%	<50 ± 1106%	<50 ± 185%	100 ± 113%	100 ± 185%	7.3 ± 155%	2.0 ± 262%
Arkansas	0	0	0	0	0	0	0	0
Illinois	100 ± 169%	600 ± 133%	<50 ± 100%	400 ± 185%	200 ± 125%	500 ± 162%	6.0 ± 196%	1.4 ± 228%
Indiana	500 ± 103%	200 ± 111%	<50 ± 74%	<50 ± 75%	200 ± 106%	200 ± 93%	16.0 ± 127%	6.8 ± 134%
Iowa	300 ± 192%	100 ± 181%	300 ± 188%	<50 ± 103%	1,700 ± 178%	100 ± 108%	1.0 ± 268%	4.7 ± 209%
Kentucky	0	0	0	0	0	0	0	0
Louisiana	5,500 ± 152%	2,100 ± 121%	200 ± 96%	200 ± 96%	1,200 ± 110%	900 ± 131%	30.8 ± 180%	9.3 ± 155%
Michigan	0	2,400 ± 196%	100 ± 195%	800 ± 196%	500 ± 195%	3,200 ± 196%	0	3.0 ± 277%
Minnesota	<50 ± 192%	4,500 ± 196%	<50 ± 192%	1,100 ± 196%	100 ± 192%	1,100 ± 196%	1.0 ± 272%	4.0 ± 277%
Mississippi	0	0	0	0	0	0	0	0
Missouri	400 ± 61%	700 ± 158%	100 ± 42%	700 ± 189%	100 ± 48%	2,200 ± 183%	8.1 ± 74%	1.0 ± 246%
Ohio	0	0	100 ± 194%	0	100 ± 194%	0	0	0
Tennessee	0	0	0	0	0	0	0	0
Wisconsin	0	100 ± 193%	0	<50 ± 193%	0	100 ± 193%	0	3.0 ± 273%
Mississippi Flyway Total	7,100 ± 118%	10,900 ± 96%	900[a]	3,400[a]	4,200 ± 85%	8,400 ± 94%		
Colorado	100 ± 140%	0	500 ± 178%	<50 ± 192%	1,100 ± 166%	<50 ± 192%	0.2 ± 227%	0
Kansas	100 ± 115%	100 ± 155%	<50 ± 89%	<50 ± 101%	100 ± 119%	<50 ± 107%	2.8 ± 145%	7.7 ± 185%
Nebraska	<50 ± 118%	800 ± 131%	<50 ± 74%	800 ± 136%	<50 ± 82%	2,400 ± 161%	1.0 ± 139%	1.0 ± 188%
New Mexico	<50 ± 176%	0	<50 ± 176%	0	300 ± 176%	0	3.0 ± 249%	0
Oklahoma	0	0	1,000 ± 196%	0	4,000 ± 196%	0	0	0
Texas	0	0	0	0	0	0	0	0
Wyoming	<50 ± 160%	0	<50 ± 160%	0	<50 ± 160%	0	5.0 ± 226%	0
Central Flyway Total	200 ± 77%	900 ± 115%	1,600[a]	800[a]	5,500 ± 146%	2,400 ± 155%		
U.S. Total	41,200 ± 75%	23,800 ± 48%	6,000[a]	5,600[a]	17,900 ± 56%	14,500 ± 64%		

[a]Hunter number estimates at the management unit and national levels may be biased high because the HIP sample frames are state-specific; therefore hunters are counted twice if tl hunt in more than one state. Variance inestimable.

Table 20. Estimates of gallinule harvest and hunter activity during the 2001 and 2002 hunting seasons.

	Harvest		Active Hunters		Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	2001	2002	2001	2002	2001	2002	2001	2002
Delaware	0	0	0	0	0	0	0	0
Florida	2,200 ± 195%	2,100 ± 144%	200 ± 195%	300 ± 167%	200 ± 195%	1,600 ± 184%	12.0 ± 276%	7.3 ± 221%
Georgia	0	1,200 ± 196%	0	600 ± 196%	0	600 ± 196%	0	2.0 ± 277%
Maine	0	0	100 ± 195%	0	400 ± 195%	0	0	0
New Jersey	<50 ± 121%	200 ± 155%	<50 ± 66%	<50 ± 60%	100 ± 76%	100 ± 83%	1.7 ± 138%	7.6 ± 166%
New York	700 ± 167%	1,500 ± 193%	600 ± 136%	300 ± 182%	1,500 ± 157%	700 ± 167%	1.2 ± 215%	4.7 ± 265%
North Carolina	<50 ± 192%	100 ± 192%	2,900 ± 194%	<50 ± 192%	3,000 ± 188%	100 ± 192%	<0.05 ± 273%	2.0 ± 272%
Pennsylvania	0	0	0	0	0	0	0	0
South Carolina	0	0	0	0	0	0	0	0
Virginia	700 ± 196%	<50 ± 134%	700 ± 196%	<50 ± 103%	700 ± 196%	100 ± 105%	1.0 ± 277%	2.0 ± 169%
West Virginia	100 ± 195%	0	100 ± 195%	0	200 ± 195%	0	1.0 ± 275%	0
Atlantic Flyway Total	3,600 ± 125%	5,200 ± 95%	4,600[a]	1,300[a]	6,000 ± 105%	3,200 ± 104%		
Alabama	100 ± 171%	<50 ± 185%	<50 ± 131%	<50 ± 185%	100 ± 131%	<50 ± 185%	6.0 ± 215%	5.0 ± 262%
Arkansas	0	0	0	0	0	0	0	0
Indiana	300 ± 178%	0	<50 ± 178%	<50 ± 181%	100 ± 178%	100 ± 181%	60.0 ± 252%	0
Kentucky	0	0	0	0	0	0	0	0
Louisiana	4,600 ± 139%	6,500 ± 113%	100 ± 111%	500 ± 63%	1,400 ± 117%	2,000 ± 98%	34.3 ± 178%	12.4 ± 129%
Michigan	0	800 ± 196%	0	800 ± 196%	0	3,200 ± 196%	0	1.0 ± 277%
Minnesota	100 ± 192%	0	<50 ± 192%	0	100 ± 192%	0	5.0 ± 272%	0
Mississippi	1,800 ± 196%	0	900 ± 196%	0	2,600 ± 196%	0	2.0 ± 277%	0
Ohio	0	0	0	0	0	0	0	0
Tennessee	0	0	100 ± 195%	0	1,700 ± 195%	0	0	0
Wisconsin	0	200 ± 193%	0	<50 ± 193%	0	200 ± 193%	0	5.0 ± 273%
Mississippi Flyway Total	7,000 ± 105%	7,500 ± 100%	1,200[a]	1,400[a]	6,000 ± 105%	5,500 ± 118%		
New Mexico	<50 ± 176%	400 ± 195%	<50 ± 176%	200 ± 195%	300 ± 176%	1,900 ± 195%	1.0 ± 249%	2.0 ± 276%
Oklahoma	0	0	1,000 ± 196%	0	1,000 ± 196%	0	0	0
Texas	0	0	0	0	0	0	0	0
Central Flyway Total	<50 ± 176%	400 ± 195%	1,000[a]	200[a]	1,300 ± 155%	1,900 ± 195%		
Arizona	0	0	700 ± 194%	0	2,200 ± 195%	0	0	0
California	200 ± 193%	100 ± 144%	100 ± 136%	100 ± 136%	100 ± 152%	100 ± 136%	2.5 ± 236%	1.5 ± 198%
Idaho	0	500 ± 196%	0	300 ± 196%	0	300 ± 196%	0	2.0 ± 277%
Montana	400 ± 195%	0	100 ± 195%	0	500 ± 195%	0	3.0 ± 276%	0
Nevada	0	0	0	<50 ± 169%	0	<50 ± 169%	0	0
Pacific Flyway Total	600 ± 150%	600 ± 161%	900[a]	300[a]	2,900 ± 155%	400 ± 142%		
U.S. Total	11,200 ± 77%	13,700 ± 66%	7,700[a]	3,200[a]	16,200 ± 63%	11,000 ± 75%		

[a]Hunter number estimates at the management unit and national levels may be biased high because the HIP sample frames are state-specific; therefore hunters are counted twice if tl hunt in more than one state. Variance inestimable.

Table 22. Estimates of retrieved and unretrieved kill of doves, band-tailed pigeons, and woodcock during the 2001 and 2002 hunting seasons.

	Mourning doves		White-winged doves		Band-tailed pigeons		Woodcock	
	2001	2002	2001	2002	2001	2002	2001	2002
Eastern Management Unit								
Retrieved kill	9,981,400 ± 7%	10,087,000 ± 7%	5,800 ± 105%	3,600 ± 95%				
Unretrieved kill	1,591,000 ± 5%	1,579,500 ± 7%	1,000 ± 58%	1,000 ± 69%				
Central Management Unit								
Retrieved kill	11,111,200 ± 14%	10,275,500 ± 7%	996,900 ± 31%	975,400 ± 26%				
Unretrieved kill	1,433,100 ± 8%	1,272,300 ± 6%	118,100 ± 19%	120,700 ± 17%				
Western Management Unit								
Retrieved kill	2,483,400 ± 5%	2,356,600 ± 5%	131,100 ± 15%	154,500 ± 15%				
Unretrieved kill	298,900 ± 5%	245,200 ± 6%	12,500 ± 16%	18,000 ± 19%				
Four Corners States								
Retrieved kill					2,000 ± 62%	2,100 ± 89%		
Unretrieved kill					200 ± 53%	300 ± 64%		
Pacific Northwest								
Retrieved kill					13,200 ± 35%	8,200 ± 27%		
Unretrieved kill					2,100 ± 22%	1,600 ± 23%		
Eastern Region								
Retrieved kill							111,600 ± 28%	71,000 ± 27%
Unretrieved kill							8,700 ± 27%	9,800 ± 34%
Central Region								
Retrieved kill							230,300 ± 24%	194,500 ± 23%
Unretrieved kill							24,000 ± 23%[a]	22,900 ± 24%
United States								
Retrieved kill	23,576,000 ± 7%	22,719,100 ± 4%	1,133,900 ± 27%	1,133,500 ± 23%	15,200 ± 32%	10,400 ± 28%	341,900 ± 19%	265,600 ± 18%
Unretrieved kill	3,323,000 ± 4%	3,097,000 ± 5%	131,600 ± 17%	139,800 ± 15%	2,300 ± 21%	1,900 ± 22%	32,700 ± 18%[a]	32,800 ± 20%

[a] Variance is approximate due to sparse data for some states.

Table 23. Estimates of retrieved and unretrieved kill of snipe, rails, gallinules, and coots during the 2001 and 2002 hunting seasons.

	Snipe		Rails		Gallinules		Coots	
Flyway	2001	2002	2001	2002	2001	2002	2001	2002
Atlantic Flyway								
Retrieved kill	26,100 ± 62%	27,500 ± 42%	33,800 ± 88%	12,000 ± 38%	3,600 ± 125%	5,200 ± 95%	12,400 ± 67%	6,700 ± 54%
Unretrieved kill	3,800 ± 50%[a]	3,300 ± 34%[a]	3,800 ± 24%[a]	1,200 ± 49%[a]	100 ± 71%[a]	600 ± 61%[a]	1,600 ± 49%[a]	800 ± 47%[a]
Mississippi Flyway								
Retrieved kill	22,900 ± 84%	25,400 ± 56%	7,100 ± 118%	10,900 ± 96%	7,000 ± 105%	7,500 ± 100%	214,400 ± 103%	179,000 ± 102%
Unretrieved kill	4,000 ± 36%	1,500 ± 39%	300 ± 63%	200 ± 55%	1,400 ± 103%[a]	100 ± 79%[a]	19,000 ± 69%	3,000 ± 18%[a]
Central Flyway								
Retrieved kill	15,300 ± 82%	5,400 ± 88%	200 ± 77%	900 ± 115%	<50 ± 176%	400 ± 195%	3,000 ± 81%	3,500 ± 89%
Unretrieved kill	200 ± 32%	100 ± 47%	<50 ± 64%	<50 ± 72%	0	500[b]	600 ± 51%[a]	400 ± 43%[a]
Pacific Flyway								
Retrieved kill	20,500 ± 85%	7,200 ± 54%			600 ± 150%	600 ± 161%	54,600 ± 86%	16,200 ± 69%
Unretrieved kill	6,300 ± 46%	800 ± 60%			700[b]	0	9,100 ± 77%[a]	2,200 ± 94%
United States								
Retrieved kill	85,500 ± 39%	68,200 ± 29%	41,200 ± 75%	23,800 ± 48%	11,200 ± 77%	13,700 ± 66%	284,400 ± 80%	205,400 ± 89%
Unretrieved kill	14,400 ± 26%[a]	5,900 ± 23%[a]	4,100 ± 25%[a]	1,400 ± 42%[a]	2,200 ± 101%[a]	1,300 ± 54%[a]	30,300 ± 56%[a]	6,400 ± 34%[a]

[a] Variance is approximate due to sparse data for some states.

[b] Variance inestimable.

Table 24. Estimates of rail harvest during the 2001 and 2002 hunting seasons.

	Sora		Virginia rail		Clapper rail		King rail	
Flyway	2001	2002	2001	2002	2001	2002	2001	2002
Atlantic	12,700	5,600	500	200	20,600	6,200	0	0
Mississippi	6,800	10,400	100	300	0	0	200	200
Central	200	600	<50	100	<50	200	<50	<50
U.S. Total	19,700	16,600	600	600	20,700	6,400	200	200

Waterfowl Hunting Record

1. IF YOU **DID NOT HUNT** DUCKS, GEESE, OR BRANT THIS SEASON, please check the box to the right and mail this form. ☒
2. Please record your personal hunting activity for each day you hunted ducks, geese, or brant in the State specified in the attached letter. Record the number of birds you personally bagged; DO NOT include birds shot by other people. Please include ALL of your hunts for the birds listed; if you did not bag any birds during a hunt, record zero (0) for the birds you hunted that day.
3. **IF YOU HUNTED DUCKS, GEESE, OR BRANT BUT DO NOT HAVE DETAILED RECORDS**, check the box to the right and go to question number 6 to record your Season Totals. ☒
4. Please include additional comments on a **SEPARATE SHEET** of paper.

2 2

Please print all characters in **BLACK** ink using CAPITAL LETTERS ONLY as shown below.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 0 1 2 3 4 5 6 7 8 9

	Date of Hunt Month	Day	County of Hunt	State of Hunt	Number of Birds Killed and Retrieved: Ducks	Sea Ducks	Geese	Brant
1			,					
2			,					
3			,					
4			,					
5			,					
6			,					
7			,					
8			,					
9			,					
10			,					
11			,					
12			,					
13			,					
14			,					

5. **IF YOU RUN OUT OF SPACE ON THIS FORM,** please call 1-800-419-2965 from 7:30 am to 5:00 pm EST to receive an additional form. We will ask you for the serial number located at the bottom of this form.

6. **SEASON TOTALS:**

	Days Hunted	Birds Killed and Retrieved	Birds Downed but Lost
Ducks			
Sea Ducks			
Geese			
Brant			

Please call 1-800-327-BAND to report banded birds.

Appendix B. Hunter activity and harvest parameters and estimators.

N_h = total number of HIP certified hunters (population size) in stratum h

$N = \Sigma_h N_h$ = total number of HIP certified hunters in state

n_h = sample size in stratum h (number of returned questionnaires)

n_{ha} = number of active hunters in stratum h

n_{hs} = number of successful hunters in stratum h

Stratum level estimates:

y_{hi} = response (season days hunted, season birds bagged) for hunter i within stratum h

$\bar{y}_h = \Sigma_i y_{hi} / n_h$ = mean response for stratum h (1)

$v(\bar{y}_h) = (s^2_h / n_h) (1-(n_h/N_h))$ = variance of mean response for stratum h (2)

where $s^2_h = \Sigma_i (y_{hi}-\bar{y}_h)^2 / (n_h-1)$

$p_{ha} = n_{ha} / n_h$ = proportion of active hunters (3)

$v(p_{ha}) = (p_{ha} (1-p_{ha}) (1-(n_h/N_h))) / (n_h-1)$ = variance of proportion of active hunters (4)

$p_{hs} = n_{hs} / n_h$ = proportion of successful hunters (3)

$v(p_{hs}) = (p_{hs} (1-p_{hs}) (1-(n_h/N_h))) / (n_h-1)$ = variance of proportion of successful hunters (4)

State level estimates:

$\hat{Y} = \Sigma_h N_h \bar{y}_h$ = state total (5)

$v(\hat{Y}) = \Sigma_h N^2_h v(y_h)$ = variance of state total (6)

$p_a = \Sigma_h N_h p_{ha} / N$ = state proportion of active hunters (7)

$v(p_a) = \Sigma_h N^2_h v(p_{ha}) / N^2$ = variance of state proportion of active hunters (8)

$p_s = \Sigma_h N_h p_{hs} / N$ = state proportion of successful hunters (7)

$v(p_s) = \Sigma_h N^2_h v(p_{hs}) / N^2$ = variance of state proportion of successful hunters (8)

Appendix C1. Number of HIP name and address records from which the 2001 and 2002 HIP survey samples were selected.

State	2001	2002
Alabama	80,873	91,762
Alaska	8,266	8,146
Arizona	48,579	49,637
Arkansas	185,607	182,400
California	170,062	117,107
Colorado	44,796	41,565
Connecticut	6,766	6,527
Delaware	8,618	8,960
Florida	40,920	61,671
Georgia	167,141	151,176
Idaho	48,344	40,178
Illinois	75,809	75,391
Indiana	35,570	35,358
Iowa	40,209	37,326
Kansas	55,788	59,167
Kentucky	17,074	20,319
Louisiana	131,484	126,565
Maine	43,162	0
Maryland	55,800	37,056
Massachusetts	5,856	5,808
Michigan	71,367	120,212
Minnesota	179,685	183,879
Mississippi	59,600	17,940
Missouri	67,088	66,868
Montana	17,330	38,194
Nebraska	41,589	39,000
Nevada	9,771	10,384
New Hampshire	5,527	5,638
New Jersey	10,626	10,998
New Mexico	19,706	19,284
New York	35,199	32,895
North Carolina	238,551	173,967
North Dakota	49,641	48,354
Ohio	86,448	99,999
Oklahoma	41,928	47,051
Oregon	53,793	54,078
Pennsylvania	107,080	106,016
Rhode Island	1,036	1,020
South Carolina	83,852	93,807
South Dakota	39,305	43,049
Tennessee	222,777	302,765
Texas	766,873	779,128
Utah	29,913	21,695
Vermont	5,268	5,281
Virginia	43,984	48,451
Washington	22,660	44,965
West Virginia	2,982	2,572
Wisconsin	163,397	168,579
Wyoming	8,900	8,818
Total	3,756,600	3,751,006

Appendix C2. Expansion factors applied to the 2001 and 2002 HIP survey responses to estimate total hunter activity and harvest. Bold indicates that the exapnsion factor was determined by examining 6-year trends in HIP certifications (See Appendix D.)

State	2001	2002
Alabama	94,416	95,075
Alaska	9,421	8,942
Arizona	55,602	58,201
Arkansas	185,607	182,400
California	179,104	**150,000**
Colorado	47,621	**44,000**
Connecticut	7,337	7,065
Delaware	8,902	8,960
Florida	**80,000**	**80,000**
Georgia	167,141	151,176
Idaho	48,344	**48,000**
Illinois	75,809	75,391
Indiana	36,035	35,358
Iowa	40,209	37,326
Kansas	58,567	59,167
Kentucky	55,018	54,666
Louisiana	133,292	129,660
Maine	57,551	57,551
Maryland	55,800	37,056
Massachusetts	5,856	5,949
Michigan	**120,000**	120,212
Minnesota	179,685	183,879
Mississippi	59,693	**60,000**
Missouri	68,044	66,868
Montana	20,145	38,194
Nebraska	41,824	39,000
Nevada	9,900	10,384
New Hampshire	5,527	5,638
New Jersey	11,288	10,998
New Mexico	21,785	20,389
New York	35,902	32,895
North Carolina	239,251	194,608
North Dakota	49,641	48,354
Ohio	86,448	99,999
Oklahoma	50,862	55,331
Oregon	54,491	54,078
Pennsylvania	119,330	121,083
Rhode Island	2,058	1,493
South Carolina	85,985	99,020
South Dakota	48,297	46,817
Tennessee	223,809	302,765
Texas	796,667	779,128
Utah	30,187	**29,000**
Vermont	7,328	6,680
Virginia	45,598	48,451
Washington	47,284	45,032
West Virginia	3,632	3,459
Wisconsin	163,397	168,579
Wyoming	10,920	10,491
Total	4,040,610	4,028,768

Appendix D. Number of HIP certifications issued by each State during the 1999-2004 hunting seasons. (Blanks indicate unknown.)

State	1999	2000	2001	2002	2003	2004
Alabama	96,378	97,997	94,416	95,075	110,891	91,389
Alaska	9,333	9,789	9,421	8,942	9,086	8,240
Arizona	40,440	56,157	55,602	58,201	58,068	51,036
Arkansas	147,132	172,564	185,607	182,400	170,276	176,060
California	157,775	157,657	179,104	131,869		141,552
Colorado	48,300	46,427	47,621	41,565	43,422	41,568
Connecticut	7,787	7,342	7,337	7,065	6,841	6,729
Delaware	8,937	8,705	8,902	8,960	8,082	8,460
Florida	81,623	10,528	44,714	61,728	80,398	100,246
Georgia	148,898	95,691	167,141	151,176	95,728	177,388
Idaho	46,621	49,329	48,344	40,178	47,018	48,180
Illinois	69,134	72,306	75,809	75,391	57,294	78,285
Indiana	33,880	34,061	36,035	35,358	34,945	34,919
Iowa	30,285	31,244	40,209	37,326	35,428	35,358
Kansas	57,266	58,689	58,567	59,167	58,944	46,384
Kentucky	45,165	50,751	55,018	54,666	52,943	57,645
Louisiana	144,610	137,677	133,292	129,660	138,701	139,782
Maine	67,220	58,841	57,551		26,234	37,327
Maryland	50,164	49,231	55,800	37,056	44,824	47,476
Massachusetts	5,582	5,659	5,856	5,949	6,650	6,669
Michigan	103,675	105,361	89,320	120,212	152,340	149,003
Minnesota	107,995	183,692	179,685	183,879	185,822	189,069
Mississippi	59,542	61,917	59,693	17,940	58,717	113,796
Missouri	68,070	66,477	68,044	66,868	71,125	68,108
Montana	16,004	15,890	20,145	38,194	38,399	41,066
Nebraska	47,467	43,477	41,824	39,000	40,708	39,247
Nevada	10,423	9,854	9,900	10,384	9,744	9,057
New Hampshire	14,453	6,078	5,527	5,638	3,761	4,379
New Jersey	13,262	11,784	11,288	10,998	10,935	10,806
New Mexico	19,307	22,001	21,785	20,389	20,054	22,442
New York	37,291	35,698	35,902	32,895	33,476	34,229
North Carolina	209,076	230,206	239,251	194,608	198,031	220,782
North Dakota	52,546	41,097	49,641	48,354	54,534	52,554
Ohio	111,715	374,492	86,448	99,999	98,785	95,970
Oklahoma	66,862	58,632	50,862	55,331	50,313	52,554
Oregon	56,659	56,134	54,491	54,078	52,991	53,267
Pennsylvania	119,831	120,621	119,330	121,083	117,709	114,709
Rhode Island	2,222	1,984	2,058	1,493	862	1,756
South Carolina	94,951	87,830	85,985	99,020	55,882	108,930
South Dakota	49,103	45,961	48,297	46,817	44,557	43,201
Tennessee	120,542	299,613	223,809	302,765	138,226	176,792
Texas	763,361	810,533	796,667	779,128	679,148	862,634
Utah	32,709	31,643	30,187	21,663	28,067	29,190
Vermont	7,458	6,997	7,328	6,680	6,028	7,439
Virginia	45,841	44,768	45,598	48,451	43,015	44,058
Washington	47,097	45,207	47,284	45,032	45,168	45,335
West Virginia	3,259	3,485	3,632	3,459	3,579	4,508
Wisconsin	162,420	173,258	163,397	168,579	171,523	163,774
Wyoming	12,565	11,697	10,920	10,491	10,410	11,758
Total	3,752,236	4,217,032	3,974,644	3,875,160	3,509,682	4,105,106

Appendix E-1. Summary of migratory bird hunters' answers to the HIP screening questions about prior-year duck hunting.

	2001					2002				
				Sea ducks					Sea ducks	
State	None	1-10	> 10	No	Yes	None	1-10	> 10	No	Yes
Alabama	85,194	5,453	3,769			85,381	6,321	3,373		
Alaska	5,118	2,217	2,086	7,276	2,145	4,918	2,100	1,924	6,660	2,282
Arizona	4,592	1,440	1,105			3,792	1,727	1,257		
Arkansas	120,887	26,129	38,591			118,314	30,882	33,204		
California	121,323	24,861	32,920			103,870	20,234	25,896		
Colorado	36,340	8,138	3,143			33,775	7,276	2,949		
Connecticut	4,761	2,009	567			4,635	1,917	513		
Delaware	5,499	1,998	1,405	8,570	332	5,680	2,042	1,238	8,637	323
Florida	72,713	4,086	3,201			72,188	4,268	3,545		
Georgia	147,576	12,749	6,816			135,313	10,731	5,132		
Idaho	35,021	6,919	6,404			33,929	7,609	6,462		
Illinois	50,473	14,893	10,443			51,847	14,360	9,184		
Indiana	25,657	7,105	3,273			25,370	6,969	3,019		
Iowa	18,345	12,278	9,586			16,327	12,212	8,787		
Kansas	40,229	8,715	9,623			40,900	9,220	9,047		
Kentucky	45,128	5,056	4,834			45,587	4,819	4,259		
Louisiana	75,818	23,946	33,528			78,760	24,512	26,388		
Maine	53,427	3,146	978	47,051	10,500	53,427	3,146	978	47,051	10,500
Maryland	42,399	7,376	6,025	50,463	5,337	24,916	7,169	4,971	33,108	3,948
Massachusetts	3,718	1,704	434	5,160	696	3,705	1,718	526	5,144	805
Michigan	87,378	21,790	10,832			87,903	21,929	10,380		
Minnesota	87,810	56,958	34,917			89,777	58,198	35,904		
Mississippi	44,661	6,803	8,229			43,542	9,993	6,465		
Missouri	49,452	9,460	9,132			49,695	8,968	8,205		
Montana	12,229	5,100	2,816			27,456	6,150	4,588		
Nebraska	25,584	9,306	6,934			23,404	8,927	6,669		
Nevada	6,912	1,812	1,176			7,947	1,508	929		
New Hampshire	3,717	1,408	402	5,197	330	3,779	1,481	378	5,276	362
New Jersey	6,945	2,948	1,395	10,471	817	6,837	2,896	1,265	10,254	744
New Mexico	19,621	1,330	834			18,667	1,148	574		
New York	22,174	9,436	4,292	33,688	2,214	19,787	9,091	4,017	30,866	2,029
North Carolina	193,346	34,643	11,262			158,261	28,223	8,124		
North Dakota	25,910	12,268	11,463			27,490	10,885	9,979		
Ohio	64,678	15,019	6,751			75,331	17,247	7,421		
Oklahoma	42,805	3,326	4,731			47,831	3,305	4,195		
Oregon	34,534	8,705	11,252			35,428	8,571	10,079		
Pennsylvania	100,926	12,278	6,126			102,929	14,356	3,798		
Rhode Island	1,224	561	273	1,485	573	846	445	202	1,059	434
South Carolina	70,650	8,489	6,846			86,112	7,634	5,274		
South Dakota	27,816	10,327	10,154			26,111	9,961	10,745		
Tennessee	195,716	15,707	12,386			278,806	12,270	11,689		
Texas	699,185	48,584	48,898			700,581	41,509	37,038		
Utah	17,664	7,464	5,059			18,226	6,822	3,952		
Vermont	5,609	1,035	684			4,844	1,123	713		
Virginia	36,870	5,876	2,852	44,423	1,175	39,736	6,167	2,548	47,132	1,319
Washington	22,875	9,875	14,534			24,500	9,012	11,520		
West Virginia	3,072	388	172			2,817	497	146		
Wisconsin	105,938	40,843	16,616			111,605	40,721	16,253		
Wyoming	7,901	1,992	1,027			7,449	2,053	989		

Appendix E-2. Summary of migratory bird hunters' answers to the HIP screening questions about prior-year goose hunting.

	2001					2002				
				Brant					Brant	
State	None	1-10	> 10	No	Yes	None	1-10	> 10	No	Yes
Alabama	92,401	1,585	430			92,591	1,992	491		
Alaska	7,418	1,549	454	7,772	1,649	7,163	1,419	360	7,299	1,643
Arizona	6,365	659	113			5,800	816	158		
Arkansas	157,191	16,459	11,957			155,440	16,755	10,205		
California	148,291	24,345	6,468	169,100	10,004	124,720	20,189	5,090	141,646	8,354
Colorado	36,900	8,295	2,426			34,393	7,460	2,147		
Connecticut	5,405	1,576	356			5,155	1,559	351		
Delaware	7,429	1,085	388	8,055	847	6,035	2,386	539	8,249	711
Florida										
Georgia	157,961	6,477	2,703			143,027	6,001	2,148		
Idaho	40,027	6,636	1,681			39,472	6,895	1,633		
Illinois	58,040	14,432	3,337			61,813	12,111	1,467		
Indiana	26,939	7,282	1,814			26,717	7,217	1,424		
Iowa	25,205	11,200	3,804			23,162	10,900	3,264		
Kansas	44,820	8,758	4,989			45,923	8,771	4,473		
Kentucky	48,540	4,719	1,759			49,129	4,305	1,232		
Louisiana	107,586	17,048	8,658			107,683	15,328	6,649		
Maine	55,887	1,442	222			55,887	1,442	222		
Maryland	50,209	4,001	1,590	50,382	5,418	22,738	10,458	3,860	33,952	3,104
Massachusetts	4,481	1,137	238	4,563	1,293	4,380	1,260	309	4,651	1,298
Michigan	94,377	20,410	5,213			94,601	20,491	5,120		
Minnesota	113,416	53,268	13,001			114,959	54,866	14,054		
Mississippi	56,465	2,496	732			57,010	2,411	579		
Missouri	55,410	8,053	4,581			55,694	7,362	3,812		
Montana	14,007	4,883	1,255			29,999	6,097	2,098		
Nebraska	26,341	10,064	5,419			24,707	9,277	5,016		
Nevada	8,738	995	167			9,224	975	185		
New Hampshire	4,448	969	110	4,817	710	4,571	963	104	5,054	584
New Jersey	8,691	2,052	545	8,381	2,907	8,076	2,174	748	8,004	2,994
New Mexico	20,609	938	238			19,524	689	176		
New York	26,471	7,645	1,786	30,062	5,840	22,743	7,882	2,270	28,162	4,733
North Carolina	210,920	24,253	4,078	167,172	72,079	171,940	19,666	3,002	133,257	61,351
North Dakota	32,440	13,155	4,046			33,262	11,518	3,574		
Ohio	67,171	14,666	4,611			78,307	16,482	5,210		
Oklahoma	46,041	3,140	1,681			50,797	3,052	1,482		
Oregon	43,301	7,417	3,773	45,036	9,455	43,261	7,284	3,533	42,280	11,798
Pennsylvania	101,909	11,527	5,894			103,954	12,211	4,918		
Rhode Island	1,536	399	123	1,226	832	988	373	132	780	713
South Carolina	82,713	2,892	380			96,304	2,399	317		
South Dakota	28,563	13,610	6,124			26,649	13,716	6,452		
Tennessee	205,821	11,496	6,492			287,859	8,682	6,224		
Texas	737,031	42,112	17,524			739,905	25,438	13,785		
Utah	25,851	3,836	500			25,327	3,207	466		
Vermont	6,386	770	172			5,529	926	225		
Virginia	39,365	5,098	1,135	43,142	2,456	41,036	6,119	1,296	46,347	2,104
Washington	34,138	9,177	3,969			33,988	8,135	2,909		
West Virginia	3,072	418	142			2,854	469	136		
Wisconsin	132,462	29,409	1,526			139,879	27,464	1,236		
Wyoming	8,140	2,145	635			7,887	2,156	448		

Appendix E-3. Summary of migratory bird hunters' answers to the HIP screening questions about prior-year dove and band-tailed pigeon (BTP) hunting.

	2001					2002				
				BTP					BTP	
State	None	1-30	> 30	No	Yes	None	1-30	> 30	No	Yes
Alabama	60,119	23,539	10,758			59,286	25,145	10,644		
Arizona	25,425	21,985	8,192	37,306	18,296	23,148	24,191	10,862	38,933	19,268
Arkansas	141,501	27,355	16,751			137,673	29,855	14,872		
California	97,605	64,770	16,729	147,183	31,921	77,761	57,175	15,064	121,546	28,454
Colorado	34,682	11,328	1,611	46,101	1,520	31,171	11,135	1,694	40,535	3,465
Delaware	5,499	2,777	626			5,551	2,795	614		
Florida	64,508	12,355	3,137			62,237	15,531	2,232		
Georgia	108,940	37,838	20,363			93,364	41,460	16,352		
Idaho	41,562	6,113	669			40,281	6,949	769		
Illinois	50,945	20,078	4,786			51,537	19,753	4,101		
Indiana	24,098	9,496	2,441			23,315	9,624	2,419		
Kansas	25,272	21,877	11,418			26,807	22,042	10,318		
Kentucky	32,296	15,210	7,512			30,066	16,665	7,935		
Louisiana	88,803	35,082	9,407			90,069	32,338	7,253		
Maryland	44,754	8,830	2,216			28,287	7,010	1,759		
Mississippi	34,678	18,614	6,401			21,291	30,268	8,441		
Missouri	49,201	13,427	5,416			49,906	12,435	4,527		
Montana	18,660	1,223	262			36,612	1,318	264		
Nebraska	24,991	12,829	4,004			23,345	11,941	3,714		
Nevada	6,952	2,703	245			7,365	2,801	218		
New Mexico	15,268	4,393	2,124	20,744	1,041	14,965	4,044	1,381	20,271	118
North Carolina	146,160	70,888	22,203			117,886	59,122	17,599		
North Dakota	44,279	4,870	492			44,151	3,895	308		
Ohio	64,935	17,764	3,749			74,218	20,920	4,861		
Oklahoma	37,761	8,754	4,347			44,466	7,749	3,116		
Oregon	49,128	4,343	1,020	42,531	11,960	48,443	4,607	1,028	39,841	14,237
Pennsylvania	84,931	30,111	4,288			83,405	31,896	5,783		
Rhode Island	1,746	292	20			1,251	218	24		
South Carolina	49,567	25,220	11,198			62,350	26,531	10,139		
South Dakota	36,651	8,995	2,651			36,317	7,548	2,952		
Tennessee	174,097	34,021	15,691			258,936	28,528	15,301		
Texas	475,270	203,776	117,621			510,274	175,504	93,350		
Utah	22,158	7,437	592	30,187	0	20,710	7,726	565	26,001	2,999
Virginia	24,880	17,752	2,966			26,148	19,183	3,120		
Washington	41,946	4,498	840			40,347	4,685	0		
West Virginia	2,318	1,076	238			2,110	1,137	212		
Wyoming	8,997	1,567	356			8,760	1,466	264		

Appendix E-4. Summary of migratory bird hunters' answers to the HIP screening questions about prior-year woodcock hunting.

	2001		2002	
State	No	Yes	No	Yes
Alabama	93,589	827	94,360	715
Arkansas	180,579	5,028	177,385	5,015
Connecticut	6,584	753	6,326	739
Delaware	8,771	131	8,830	130
Florida	71,365	8,635	78,324	1,676
Georgia	159,059	8,082	145,693	5,483
Illinois	75,168	641	74,827	564
Indiana	35,288	747	34,676	682
Iowa	38,806	1,403	36,397	929
Kansas	58,358	209	59,044	123
Kentucky	54,255	763	53,866	800
Louisiana	125,842	7,450	122,849	6,811
Maine	54,446	3,105	54,446	3,105
Maryland	54,720	1,080	36,470	586
Massachusetts	5,169	687	5,279	670
Michigan	126,818	23,182	122,717	27,283
Minnesota	167,012	12,673	171,171	12,708
Mississippi	59,338	355	59,428	572
Missouri	66,459	1,585	65,108	1,760
Nebraska	41,626	198	38,818	182
New Hampshire	4,485	1,042	4,493	1,145
New Jersey	10,727	561	10,527	471
New York	33,760	2,142	30,989	1,906
North Carolina	217,732	21,519	178,623	15,985
Ohio	82,147	4,301	95,506	4,493
Oklahoma	50,567	295	54,980	351
Pennsylvania	112,366	6,964	113,171	7,912
Rhode Island	1,913	145	1,388	105
South Carolina	85,142	843	98,384	636
Tennessee	218,016	5,793	296,954	5,811
Texas	777,409	19,258	775,844	3,284
Vermont	6,456	872	5,940	740
Virginia	44,828	770	47,797	654
West Virginia	3,437	195	3,282	177
Wisconsin	151,273	12,124	157,583	10,996

Appendix E-5. Summary of migratory bird hunters' answers to the HIP screening questions about prior-year snipe, rail, gallinule, and coot hunting.

	2001				2002			
	Snipe/coots		Rails/gallinules		Snipe/coots		Rails/gallinules	
State	No	Yes	No	Yes	No	Yes	No	Yes
Alabama	93,253	1,163	93,839	577	94,067	1,008	94,620	455
Alaska	7,579	1,842			6,909	2,033		
Arizona	54,989	613	54,873	729	57,707	494	57,523	678
Arkansas	179,045	6,562	180,318	5,289	175,683	6,717	177,022	5,378
California	166,595	12,509	174,650	4,454	139,776	10,224	145,615	4,385
Colorado	45,975	1,646	46,663	958	34,625	9,375	37,392	6,608
Connecticut	7,274	63	7,302	35	7,022	43	7,036	29
Delaware	8,801	101	8,850	52	8,854	106	8,892	68
Florida	76,600	3,400	77,488	2,512	76,668	3,332	78,456	1,544
Georgia	159,096	8,045	167,141	0	145,853	5,323	151,176	0
Idaho	47,674	670			47,347	653		
Illinois	75,190	619	75,622	187	74,670	721	75,168	223
Indiana	35,440	595	35,861	174	34,732	626	35,162	196
Iowa	38,981	1,228	39,526	683	36,385	941	36,821	505
Kansas	57,932	635	58,146	421	58,604	563	58,784	383
Kentucky	54,436	582	54,900	118	54,057	609	54,532	134
Louisiana	124,088	9,204	125,307	7,985	120,944	8,716	121,800	7,860
Maine	50,483	7,068	47,984	9,567	50,483	7,068	47,984	9,567
Maryland	53,525	2,275	53,910	1,890	35,359	1,697	35,540	1,516
Massachusetts	5,716	140	5,806	50	5,823	126	5,893	56
Michigan	109,742	10,258	109,742	10,258	109,894	10,318	109,894	10,318
Minnesota	175,624	4,061	177,693	1,992	179,899	3,980	181,756	2,123
Mississippi	58,883	810	59,168	525	59,144	856	59,672	328
Missouri	65,886	2,158	67,217	827	64,827	2,041	65,905	963
Montana	19,809	336			37,765	429		
Nebraska	41,463	361	41,560	264	38,773	227	38,850	150
Nevada	9,758	142	9,855	45	10,234	150	10,333	51
New Hampshire	5,347	180			5,405	233		
New Jersey	11,074	214	10,965	323	10,787	211	10,670	328
New Mexico	21,686	99	21,739	46	20,309	80	20,363	26
New York	34,757	1,145	35,358	544	31,983	912	32,486	409
North Carolina	236,190	3,061	238,247	1,004	191,979	2,629	193,671	937
North Dakota	49,042	599			47,726	628		
Ohio	79,657	6,791	80,059	6,389	94,446	5,553	95,140	4,859
Oklahoma	49,778	1,084	49,911	951	54,398	933	54,525	806
Oregon	54,491	0			52,532	1,546		
Pennsylvania	118,321	1,009	118,659	671	119,618	1,465	120,158	925
Rhode Island	1,752	306	1,770	288	1,269	224	1,280	213
South Carolina	82,858	3,127	82,895	3,090	94,644	4,376	94,610	4,410
South Dakota	46,767	1,530			46,242	575		
Tennessee	218,377	5,432	218,852	4,957	296,713	6,052	297,203	5,562
Texas	772,220	24,447	777,874	18,793	774,962	4,166	775,910	3,218
Utah	29,477	710	30,187	0	24,353	4,647	26,376	2,624
Vermont	5,246	2,082			4,649	2,031		
Virginia	44,838	760	45,027	571	47,719	732	47,856	595
Washington	35,413	11,871			34,033	10,999		
West Virginia	3,533	99	3,582	50	3,439	20	3,450	9
Wisconsin	157,457	5,940	158,929	4,468	158,272	10,307	159,533	9,046
Wyoming	10,769	151	10,866	54	10,332	159	10,450	41

Appendix F-1. Stratum-specific sample sizes for the 2001 and 2002 HIP waterfowl harvest surveys: duck strata.

	2001					2002				
				Sea ducks					Sea ducks	
State	None	1-10	> 10	No	Yes	None	1-10	> 10	No	Yes
Alabama	411	246	361			403	294	352		
Alaska	464	306	396	494	672	692	391	501	580	1,004
Arizona	125	95	129			103	113	153		
Arkansas	581	675	1,381			563	764	1,181		
California	923	595	1,098			617	409	687		
Colorado	359	472	439			355	382	394		
Connecticut	151	258	135			146	243	108		
Delaware	217	307	399	756	167	292	358	373	868	155
Florida	194	97	129			315	163	270		
Georgia	312	661	905			331	770	721		
Idaho	74	214	409			177	204	337		
Illinois	408	391	565			409	365	452		
Indiana	159	345	378			170	329	346		
Iowa	145	323	574			133	328	504		
Kansas	279	254	559			290	279	532		
Kentucky	134	120	260			142	117	202		
Louisiana	225	486	753			227	481	598		
Maine	470	123	98	267	424	647	228	140	399	616
Maryland	790	516	566	1,223	649	697	687	648	1,384	648
Massachusetts	211	204	79	317	177	194	216	110	314	206
Michigan	252	389	353			443	684	633		
Minnesota	302	969	813			304	985	840		
Mississippi	252	353	518			83	168	124		
Missouri	207	368	600			73	384	630		
Montana	189	637	643			394	930	1,309		
Nebraska	264	547	646			240	535	612		
Nevada	126	254	321			159	229	256		
New Hampshire	205	243	139	458	129	198	254	125	414	163
New Jersey	243	286	208	538	199	271	295	187	560	193
New Mexico	274	373	274			212	232	160		
New York	537	744	622	1,420	483	466	731	583	1,318	462
North Carolina	275	794	601			212	589	387		
North Dakota	210	314	535			233	272	454		
Ohio	159	475	412			189	570	459		
Oklahoma	148	171	457			172	166	429		
Oregon	704	390	897			893	444	817		
Pennsylvania	444	676	635			448	769	406		
Rhode Island	59	100	62	110	111	80	119	80	142	137
South Carolina	184	479	812			240	476	641		
South Dakota	234	371	566			253	405	690		
Tennessee	201	375	625			290	283	595		
Texas	759	969	1,554			680	979	1,366		
Utah	106	443	611			75	305	358		
Vermont	83	195	201			89	221	195		
Virginia	593	578	492	1,287	376	688	667	428	1,309	474
Washington	63	249	497			148	444	654		
West Virginia	87	56	49			104	79	35		
Wisconsin	340	1,142	856			368	1,129	779		
Wyoming	166	252	237			156	252	211		

Appendix F-2. Stratum-specific sample sizes for the 2001 and 2002 HIP waterfowl harvest surveys: goose strata.

	2001					2002				
				Brant					Brant	
State	None	1-10	> 10	No	Yes	None	1-10	> 10	No	Yes
Alabama	815	139	64			811	169	69		
Alaska	795	280	91	535	631	1,132	350	102	762	822
Arizona	266	69	14			255	89	25		
Arkansas	1,547	508	582			1,517	511	480		
California	1,607	731	278	2,141	475	1,046	484	183	1,408	305
Colorado	442	481	347			447	371	313		
Connecticut	200	247	97			173	237	87		
Delaware	554	224	145	689	234	349	469	205	822	201
Florida										
Georgia	1,052	358	468			860	591	371		
Idaho	278	276	143			369	236	113		
Illinois	660	484	220			710	397	119		
Indiana	284	376	222			317	373	155		
Iowa	341	389	312			333	368	264		
Kansas	502	311	279			524	326	251		
Kentucky	188	178	148			232	156	73		
Louisiana	786	393	285			718	352	236		
Maine	598	58	35			767	194	54		
Maryland	1,345	293	234	1,047	825	687	767	578	1,384	648
Massachusetts	310	148	36	198	296	311	160	49	219	301
Michigan	475	360	159			732	694	334		
Minnesota	713	1,002	369			721	1,035	373		
Mississippi	816	216	91			284	66	25		
Missouri	464	365	346			410	329	348		
Montana	390	781	298			739	1,236	658		
Nebraska	391	572	494			369	549	469		
Nevada	361	290	50			308	276	60		
New Hampshire	324	220	43	414	173	330	216	31	415	162
New Jersey	443	225	69	339	398	427	214	112	310	443
New Mexico	491	298	132			352	169	83		
New York	1,027	633	243	1,100	803	846	634	300	1,069	711
North Carolina	820	630	220	968	702	582	450	156	698	490
North Dakota	458	410	191			423	377	159		
Ohio	303	466	277			348	557	313		
Oklahoma	356	241	179			348	251	168		
Oregon	1,124	503	364	935	1,056	1,350	443	361	830	1,324
Pennsylvania	712	564	479			705	528	390		
Rhode Island	89	96	36	45	176	84	140	55	31	248
South Carolina	993	390	92			911	364	82		
South Dakota	337	473	361			339	541	468		
Tennessee	489	353	359			562	275	331		
Texas	1,718	882	682			1,648	745	632		
Utah	650	426	84			405	274	59		
Vermont	204	189	86			180	233	92		
Virginia	875	583	205	1,127	536	871	671	241	1,258	525
Washington	307	288	214			561	446	239		
West Virginia	84	71	37			98	91	29		
Wisconsin	1,052	1,164	122			1,106	1,073	97		
Wyoming	212	294	149			192	322	105		

Appendix F-3. Stratum-specifc sample sizes for the 2001 and 2002 HIP dove and band-tailed pigeon (BTP) harvest surveys.

	2001					2002				
				BTP					BTP	
State	None	1-30	> 30	No	Yes	None	1-30	> 30	No	Yes
Alabama	376	795	603			381	867	608		
Arizona	394	506	302	529	673	352	540	453	620	725
Arkansas	459	886	814			520	1,027	779		
California	782	1,064	727	1,510	1,063	661	815	545	1,150	871
Colorado	239	570	269	906	172	604	697	306	748	859
Delaware	83	277	112			93	285	111		
Florida	130	382	79			199	527	158		
Georgia	320	765	678			479	835	651		
Idaho	162	556	118			305	550	120		
Illinois	259	600	217			381	635	193		
Indiana	132	436	432			139	453	442		
Kansas	130	635	508			167	667	469		
Kentucky	72	380	411			102	554	512		
Louisiana	199	801	442			208	746	340		
Maryland	197	698	354			165	637	301		
Mississippi	167	555	559			40	292	236		
Missouri	186	600	321			64	672	336		
Montana	75	142	65			324	207	89		
Nebraska	227	765	356			238	727	332		
Nevada	48	447	92			65	490	81		
New Mexico	228	411	372	972	39	132	349	233	691	23
North Carolina	270	668	423			204	512	304		
North Dakota	177	420	74			201	364	57		
Ohio	96	503	339			142	673	465		
Oklahoma	117	325	316			126	291	230		
Oregon	893	592	168	749	904	1,163	677	182	823	1,199
Pennsylvania	179	877	180			179	928	248		
Rhode Island	15	42	6			19	35	3		
South Carolina	214	1,130	663			249	1,176	599		
South Dakota	103	519	270			163	607	476		
Tennessee	84	660	587			128	558	579		
Texas	424	1,979	2,306			512	1,932	2,124		
Utah	107	645	99	851	0	187	527	66	638	142
Virginia	163	820	262			185	901	277		
Washington	88	347	171			179	435	0		
West Virginia	45	185	56			53	230	62		
Wyoming	59	186	102			102	205	90		

Appendix F-4. Stratum-specific sample sizes for the 2001 and 2002 HIP woodcock harvest surveys.

	2001		2002	
State	No	Yes	No	Yes
Alabama	191	171	198	148
Arkansas	195	489	219	536
Connecticut	60	187	79	11
Delaware	99	65	108	64
Florida	85	117	132	235
Georgia	115	328	151	288
Illinois	139	185	180	185
Indiana	79	239	81	223
Iowa	121	268	121	186
Kansas	117	95	130	55
Kentucky	67	64	95	93
Louisiana	116	471	115	430
Maine	149	431	218	621
Maryland	160	283	139	190
Massachusetts	92	222	99	220
Michigan	220	593	379	1,081
Minnesota	165	630	170	632
Mississippi	97	148	35	93
Missouri	137	475	79	638
Nebraska	84	89	83	83
New Hampshire	34	211	44	279
New Jersey	92	180	100	155
New York	147	412	140	370
North Carolina	103	406	78	279
Ohio	65	232	93	293
Oklahoma	82	121	81	125
Pennsylvania	168	353	195	458
Rhode Island	23	29	36	40
South Carolina	191	189	210	143
Tennessee	107	110	146	113
Texas	144	231	163	40
Vermont	93	209	94	186
Virginia	103	246	114	214
West Virginia	42	62	48	62
Wisconsin	297	600	313	545

Appendix F-5. Stratum-specific sample sizes for the 2001 and 2002 HIP snipe, rail, gallinule, and coot harvest surveys.

	2001				2002			
	Snipe/coots		Rails/gallinules		Snipe/coots		Rails/gallinules	
State	No	Yes	No	Yes	No	Yes	No	Yes
Alabama	152	108	161	99	126	102	148	80
Alaska	23	258			24	384		
Arizona	108	167	103	172	135	159	110	184
Arkansas	155	149	205	99	294	599	243	650
California	172	401	313	260	142	323	237	228
Colorado	115	137	148	104	66	567	170	463
Connecticut	132	26	140	18	455	10	451	14
Delaware	128	39	142	25	144	46	152	38
Florida	40	32	46	26	612	98	653	57
Georgia	227	321	548	0	303	271	574	0
Idaho	94	133			159	110		
Illinois	157	135	229	63	176	173	268	81
Indiana	145	76	178	43	156	84	187	53
Iowa	149	197	200	146	151	156	197	110
Kansas	217	96	230	83	225	135	250	110
Kentucky	67	35	96	6	74	40	111	3
Louisiana	200	287	144	343	203	284	150	337
Maine	142	116	132	126	218	138	191	165
Maryland	174	370	199	345	155	389	165	379
Massachusetts	107	68	149	26	115	64	144	35
Michigan	122	140	122	140	217	201	217	201
Minnesota	182	228	278	132	193	219	259	153
Mississippi	86	163	119	130	31	62	63	30
Missouri	159	663	390	432	78	243	154	167
Montana	56	140			150	44		
Nebraska	112	167	131	148	115	92	129	78
Nevada	106	72	151	27	118	79	166	31
New Hampshire	99	81			102	109		
New Jersey	139	69	55	153	149	74	61	162
New Mexico	163	47	189	21	148	36	170	14
New York	139	148	167	120	120	131	156	95
North Carolina	126	86	159	53	94	70	116	48
North Dakota	129	151			127	146		
Ohio	65	223	66	222	63	191	74	180
Oklahoma	88	33	93	28	91	27	95	23
Oregon	203	0			210	75		
Pennsylvania	242	155	248	149	245	245	278	212
Rhode Island	13	75	14	74	16	81	16	81
South Carolina	139	199	136	202	145	277	137	285
South Dakota	96	125			128	55		
Tennessee	114	184	126	172	151	224	165	210
Texas	297	286	317	266	136	52	141	47
Utah	113	139	252	0	80	999	403	676
Vermont	73	150			72	162		
Virginia	174	97	129	142	196	101	146	151
Washington	51	6			109	4		
West Virginia	81	0	81	0	96	0	96	0
Wisconsin	171	186	201	156	173	361	196	338
Wyoming	157	69	199	27	198	72	250	20

Appendix G1. Sample sizes and response rates for the 2001 and 2002 HIP waterfowl harvest surveys.

	2001				2002			
	Surveys			Response	Surveys			Response
State	Mailed	Delivered	Returned	rate (%)	Mailed	Delivered	Returned	rate (%)
Alabama	1,018	990	566	57	1,049	996	545	55
Alaska	1,166	1,131	803	71	1,584	1,508	1,047	69
Arizona	349	330	226	68	369	344	223	65
Arkansas	2,637	2,367	1,291	55	2,508	2,256	1,108	49
California	2,616	2,445	1,550	63	1,713	1,577	1,144	73
Colorado	1,270	1,153	766	66	1,131	1,046	686	66
Connecticut	544	529	391	74	497	476	340	71
Delaware	923	835	470	56	1,023	909	487	54
Florida	420	382	207	54	748	677	394	58
Georgia	1,878	1,546	806	52	1,822	1,455	889	61
Idaho	697	646	482	75	718	672	493	73
Illinois	1,364	1,254	812	65	1,226	1,154	750	65
Indiana	882	794	521	66	845	763	535	70
Iowa	1,042	996	735	74	965	912	559	61
Kansas	1,092	1,034	673	65	1,101	1,041	656	63
Kentucky	514	499	275	55	461	445	222	50
Louisiana	1,464	1,268	648	51	1,306	1,141	555	49
Maine	691	657	424	65	1,015	895	511	57
Maryland	1,872	1,629	972	60	2,032	1,767	1,016	57
Massachusetts	494	447	332	74	520	474	362	76
Michigan	994	953	547	57	1,760	1,709	1,006	59
Minnesota	2,084	1,983	1,314	66	2,129	2,037	1,285	63
Mississippi	1,123	1,082	615	57	375	371	237	64
Missouri	1,175	1,056	623	59	1,087	1,036	602	58
Montana	1,469	1,422	984	69	2,633	2,523	1,643	65
Nebraska	1,457	1,424	926	65	1,387	1,362	901	66
Nevada	701	592	446	75	644	555	411	74
New Hampshire	587	524	364	69	577	514	329	64
New Jersey	737	670	441	66	753	703	431	61
New Mexico	921	874	664	76	604	560	359	64
New York	1,903	1,744	1,165	67	1,780	1,606	1,056	66
North Carolina	1,670	1,544	1,047	68	1,188	1,075	625	58
North Dakota	1,059	1,043	725	70	959	939	714	76
Ohio	1,046	972	635	65	1,218	1,152	684	59
Oklahoma	776	683	379	55	767	669	446	67
Oregon	1,991	1,881	1,382	73	2,154	2,022	1,308	65
Pennsylvania	1,755	1,724	1,339	78	1,623	1,576	1,007	64
Rhode Island	221	215	143	67	279	271	191	70
South Carolina	1,475	1,368	703	51	1,357	1,269	618	49
South Dakota	1,171	1,120	894	80	1,348	1,264	873	69
Tennessee	1,201	1,068	501	47	1,168	1,030	503	49
Texas	3,282	2,880	1,383	48	3,025	2,682	1,280	48
Utah	1,160	1,054	707	67	738	719	507	71
Vermont	479	461	292	63	505	485	325	67
Virginia	1,663	1,510	977	65	1,783	1,616	1,041	64
Washington	809	751	570	76	1,246	1,147	833	73
West Virginia	192	187	130	70	218	211	141	67
Wisconsin	2,338	2,255	1,602	71	2,276	2,200	1,533	70
Wyoming	655	631	424	67	619	605	403	67
Total	59,027	54,603	34,872	64	58,833	54,416	33,814	62

Appendix G2. Sample sizes and response rates for the 2001 and 2002 HIP dove and band-tailed pigeon harvest surveys.

	2001				2002			
	Surveys			Response	Surveys			Response
State	Mailed	Delivered	Returned	rate (%)	Mailed	Delivered	Returned	rate (%)
Alabama	1,774	1,704	936	55	1,856	1,765	1,127	64
Arizona	1,202	1,135	714	63	1,345	1,234	726	59
Arkansas	2,159	1,907	1,058	55	2,326	2,107	1,092	52
California	2,573	2,421	1,614	67	2,021	1,861	1,242	67
Colorado	1,078	984	748	76	1,607	1,487	1,168	79
Delaware	472	434	269	62	489	441	265	60
Florida	591	505	259	51	884	798	409	51
Georgia	1,763	1,503	776	52	1,965	1,574	762	48
Idaho	836	792	613	77	975	914	700	77
Illinois	1,076	987	729	74	1,209	1,138	918	81
Indiana	1,000	911	636	70	1,034	933	618	66
Kansas	1,273	1,220	970	80	1,303	1,235	840	68
Kentucky	863	851	488	57	1,168	1,126	627	56
Louisiana	1,442	1,233	673	55	1,294	1,125	568	50
Maryland	1,249	1,091	727	67	1,103	954	605	63
Mississippi	1,281	1,239	686	55	568	562	365	65
Missouri	1,107	1,011	594	59	1,072	1,011	620	61
Montana	282	279	210	75	620	593	461	78
Nebraska	1,348	1,326	906	68	1,297	1,273	866	68
Nevada	587	522	418	80	636	559	420	75
New Mexico	1,011	938	548	58	714	669	443	66
North Carolina	1,361	1,278	742	58	1,020	952	529	56
North Dakota	671	664	477	72	622	606	430	71
Ohio	938	886	517	58	1,280	1,191	693	58
Oklahoma	758	672	472	70	647	557	325	58
Oregon	1,653	1,587	1,150	72	2,022	1,907	1,322	69
Pennsylvania	1,236	1,205	796	66	1,355	1,318	821	62
Rhode Island	63	61	44	72	57	55	37	67
South Carolina	2,007	1,893	1,239	65	2,024	1,896	1,003	53
South Dakota	892	852	640	75	1,246	1,187	884	74
Tennessee	1,331	1,202	617	51	1,265	1,132	562	50
Texas	4,709	4,140	2,117	51	4,568	4,047	1,939	48
Utah	851	791	620	78	780	743	519	70
Virginia	1,245	1,136	727	64	1,363	1,257	782	62
Washington	606	565	471	83	614	574	480	84
West Virginia	286	278	185	67	345	339	215	63
Wyoming	347	336	244	73	397	387	261	67
Total	43,921	40,539	25,630	63	45,091	41,507	25,644	62

Appendix G3. Sample sizes and response rates for the 2001 and 2002 HIP woodcock harvest surveys.

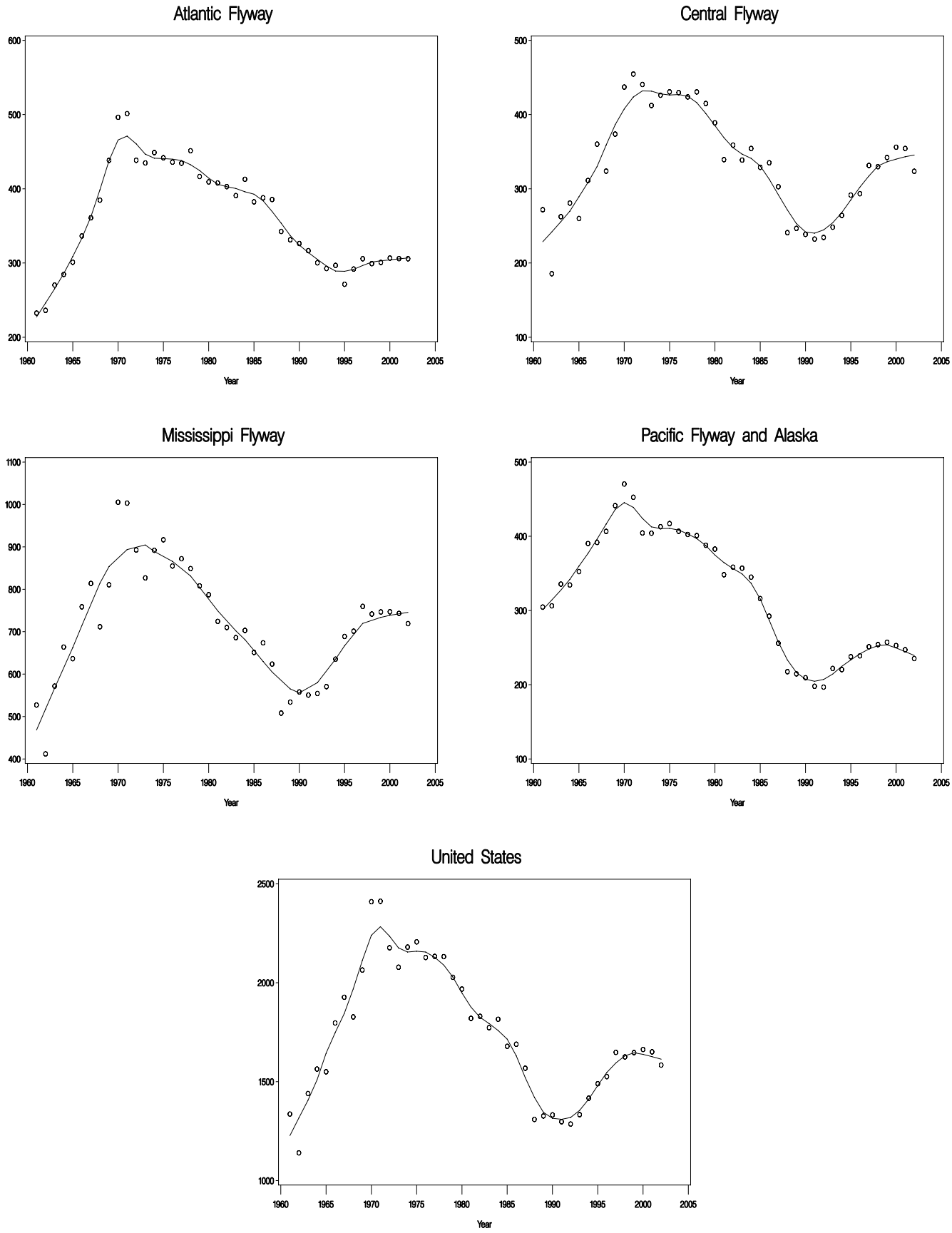
	2001				2002			
	Surveys			Response	Surveys			Response
State	Mailed	Delivered	Returned	rate (%)	Mailed	Delivered	Returned	rate (%)
Alabama	362	336	183	54	346	337	187	55
Arkansas	684	577	310	54	755	667	332	50
Connecticut	247	236	208	88	90	87	70	80
Delaware	164	150	102	68	172	152	87	57
Florida	202	180	106	59	367	341	186	55
Georgia	443	360	202	56	439	346	187	54
Illinois	324	297	226	76	365	340	237	70
Indiana	318	284	209	74	304	274	184	67
Iowa	389	372	271	73	307	294	180	61
Kansas	212	195	135	69	185	177	121	68
Kentucky	131	129	68	53	188	179	101	56
Louisiana	587	502	273	54	545	470	225	48
Maine	580	543	370	68	839	711	425	60
Maryland	443	396	289	73	329	308	183	59
Massachusetts	314	294	248	84	319	302	235	78
Michigan	813	787	512	65	1,460	1,409	911	65
Minnesota	795	757	623	82	802	753	496	66
Mississippi	245	239	163	68	128	127	89	70
Missouri	612	550	376	68	717	657	402	61
Nebraska	173	173	124	72	166	158	105	66
New Hampshire	245	225	166	74	323	301	251	83
New Jersey	272	253	168	66	255	230	169	73
New York	559	530	447	84	510	471	378	80
North Carolina	509	461	242	52	357	323	178	55
Ohio	297	276	176	64	386	358	212	59
Oklahoma	203	173	97	56	206	178	92	52
Pennsylvania	521	513	371	72	653	633	433	68
Rhode Island	52	52	43	83	76	73	51	70
South Carolina	380	359	202	56	353	336	165	49
Tennessee	217	193	84	44	259	227	135	59
Texas	375	321	166	52	203	183	103	56
Vermont	302	292	211	72	280	271	190	70
Virginia	349	315	232	74	328	296	248	84
West Virginia	104	101	79	78	110	104	75	72
Wisconsin	897	874	670	77	858	837	682	81
Total	13,320	12,295	8,352	68	13,980	12,910	8,305	64

Appendix G4. Sample sizes and response rates for the 2001 and 2002 HIP snipe, rail, gallinule, and coot harvest surveys.

	2001				2002			
	Surveys			Response	Surveys			Response
State	Mailed	Delivered	Returned	rate (%)	Mailed	Delivered	Returned	rate (%)
Alabama	260	248	141	57	228	216	129	60
Alaska	281	267	196	73	408	390	284	73
Arizona	275	251	164	65	294	266	156	59
Arkansas	304	267	122	46	893	783	378	48
California	573	530	327	62	465	419	257	61
Colorado	252	228	164	72	633	571	408	71
Connecticut	158	155	115	74	465	455	336	74
Delaware	167	144	90	63	190	174	99	57
Florida	72	63	33	52	710	624	355	57
Georgia	548	467	247	53	574	462	246	53
Idaho	227	204	132	65	269	254	183	72
Illinois	292	267	177	66	349	322	228	71
Indiana	221	204	162	79	240	213	155	73
Iowa	346	327	226	69	307	294	201	68
Kansas	313	298	205	69	360	348	240	69
Kentucky	102	95	48	51	114	109	57	52
Louisiana	487	413	264	64	487	422	200	47
Maine	258	243	160	66	356	321	183	57
Maryland	544	466	293	63	544	463	280	60
Massachusetts	175	165	130	79	179	156	115	74
Michigan	262	250	143	57	418	406	258	64
Minnesota	410	379	247	65	412	389	248	64
Mississippi	249	243	136	56	93	92	63	68
Missouri	822	715	439	61	321	309	206	67
Montana	196	194	154	79	194	183	122	67
Nebraska	279	274	204	74	207	205	162	79
Nevada	178	155	120	77	197	174	129	74
New Hampshire	180	157	108	69	211	185	128	69
New Jersey	208	190	131	69	223	200	133	67
New Mexico	210	197	120	61	184	170	119	70
New York	287	260	206	79	251	230	162	70
North Carolina	212	199	124	62	164	159	95	60
North Dakota	280	277	190	69	273	266	197	74
Ohio	288	268	139	52	254	239	117	49
Oklahoma	121	105	66	63	118	100	62	62
Oregon	203	192	133	69	285	264	184	70
Pennsylvania	397	388	252	65	490	473	360	76
Rhode Island	88	84	55	65	97	95	54	57
South Carolina	338	317	174	55	422	395	204	52
South Dakota	221	211	165	78	183	173	129	75
Tennessee	298	264	110	42	375	326	139	43
Texas	583	504	235	47	188	169	95	56
Utah	252	233	154	66	1,079	990	629	64
Vermont	223	215	139	65	234	225	146	65
Virginia	271	239	145	61	297	271	172	63
Washington	57	52	41	79	113	107	88	82
West Virginia	81	79	48	61	96	92	52	57
Wisconsin	357	345	263	76	534	526	382	73
Wyoming	226	221	161	73	270	259	210	81
Total	13,632	12,509	7,998	64	16,248	14,934	9,535	64

Appendix H. Number of Federal Duck Stamps sold in 2001 and 2002 by state and flyway.

	Duck Stamp sales			Duck Stamp sales	
State / Flyway	2001	2002	State / Flyway	2001	2002
Connecticut	5,472	6,106	Colorado	28,433	25,460
Delaware	7,051	7,200	Kansas	26,337	26,367
Washington D.C.	1,516	3,106	Montana	7,559	7,268
Florida	18,923	20,469	Nebraska	33,825	31,886
Georgia	23,726	23,240	New Mexico	4,549	4,229
Maine	11,041	10,331	North Dakota	35,439	31,549
Maryland	31,569	31,328	Oklahoma	22,418	21,811
Massachusetts	9,157	8,850	South Dakota	33,463	30,881
New Hampshire	5,150	4,794	Texas	148,638	137,355
New Jersey	12,374	11,870	Wyoming	9,154	6,990
New York	42,318	39,036	Central Flyway	349,815	323,796
North Carolina	30,863	34,641			
Pennsylvania	52,522	51,361	Arizona	6,217	5,574
Rhode Island	1,645	1,622	California	77,541	71,955
South Carolina	23,497	23,352	Colorado	6,097	5,460
Vermont	4,824	5,201	Idaho	26,173	24,937
Virginia	23,418	24,049	Montana	14,435	13,880
West Virginia	2,029	1,735	Nevada	7,293	6,687
Atlantic Flyway	307,095	308,291	New Mexico	900	837
			Oregon	33,056	31,307
Alabama	17,818	16,274	Utah	27,815	27,341
Arkansas	66,117	61,740	Washington	36,547	34,769
Illinois	56,679	51,841	Wyoming	1,472	1,124
Indiana	29,203	30,441	Pacific Flyway	237,546	223,871
Iowa	31,765	31,799			
Kentucky	20,099	18,367	Alaska	10,068	10,173
Louisiana	106,295	95,664			
Michigan	62,720	60,653	U.S. Total	1,641,420	1,576,545
Minnesota	121,895	125,077			
Mississippi	25,598	24,805			
Missouri	40,353	39,495			
Ohio	36,973	33,111			
Tennessee	34,737	33,407			
Wisconsin	86,644	87,740			
Mississippi Flyway	736,896	710,414			



Appendix I. Number of Federal Duck Stamps sold (in thousands) in the United States, 1961-2002.