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Migratory bird hunting activity and harvest during the 1999 and 2000 hunting seasons Final Report April 2006

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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 1999 and 2000 migratory bird hunting seasons. About 1.3 million waterfowl hunters harvested 16,188,300 (±3%) ducks and 3,455,700 (±5%) geese in 1999, and a similar number of waterfowl hunters harvested 15,966,200 (±4%) ducks and 3,716,000 (±7%) geese in 2000. Mallard (*Anas platyrhynchos*), gadwall (*A. strepera*), green-winged teal (*A. crecca*), 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 24,437,300 (±4%) mourning doves (*Zenaida macroura*) in 1999 and 26,295,300 (±4%) in 2000. Woodcock hunters numbered about 170,600 in 1999 and 154,500 in 2000, and they harvested 444,800 (±20%) birds in 1999 and 390,900 (±20%) in 2000. Among the lesser-hunted species, about 40,200 people hunted snipe in 1999 (29,200 in 2000), and they harvested 276,500 (±56%) and 86,400 (±52%) snipe in 1999 and 2000, respectively; rail hunters (11,900 in 1999 and 6,900 in 2000) harvested 31,600 (±41%) rails in 1999 and 15,300 (±56%) rails in 2000; about 4,000 hunters harvested 32,900 (±74%) gallinules in 1999 and 20,900 (±70%) in 2000; and about 40,000 coot hunters harvested 236,000 (±26%) coots in 1999 and 335,000 (±45%) in 2000.

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 an appropriate sample frame annually 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 1999-2000 (hereafter 1999) and 2000-01 (hereafter 2000) hunting seasons. The purpose of this report is to present the HIP hunter activity and harvest estimates for the 1999 and 2000 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 1999, 17 states (16 in 2000) 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) Six states (5 in 2000) 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) Twelve states (14 in 2000) 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) Fourteen 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.

For the 1999 surveys, we assigned hunters to one "duck" stratum and one "goose" stratum, each consisting of three or four levels, depending on the state: "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, hunters who reported hunting sea ducks last year were assigned to a special stratum rather than "None", "Bagged 1-10", or "Bagged >10" for ducks. 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 a special stratum rather than one of the other goose strata.

Dove/pigeon survey stratification also was comprised of three or four levels depending on the state: "None" - did not hunt or bagged 0 doves last year; "Bagged 1-30" doves last year; "Bagged >30" doves last year; and "BTP" (only in Arizona, California, Colorado, New Mexico, Oregon, and Utah) - hunters who intended to hunt band-tailed pigeons during the current season. As with the sea duck and brant strata, a "yes" answer to the band-tailed pigeon question took precedence over the hunter's answer to the dove question.

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.

For the 2000 surveys, we separated sea duck and brant stratification from the regular duck and goose strata, and established two strata each for sea duck and brant hunting: "Yes" – hunted sea ducks the previous year/intend to hunt brant during the current season; and "No" – did not hunt sea ducks the previous year/do not intend to hunt brant during the current season. Thus, in states with special sea duck or brant hunting regulations, we assigned each hunter to both a duck stratum and a sea duck stratum, or both a goose stratum and a brant stratum. We also established two band-tailed pigeon strata and separated them from the dove strata in a similar manner.

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 1999 dove harvest survey in South Dakota, we sampled about 10% of the hunters in the "Bagged >30" dove stratum, 4% of those in the "Bagged 1-10" stratum, and 0.5% 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 via certified mail to a 25% sample of 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 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 U.S. 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 1999 and 2000 were reported in "American woodcock population status, 2001" (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 1.9 million records in 1999 and 2.4 million in 2000. Most states continued to send us data twice a month for the rest of the season, and we received 3,544,021 (1999) and 3,966,371 (2000) 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.

The states reported HIP-certifying a combined total of 3,752,236 hunters for the 1999 hunting season and 4,217,032 for the 2000 season (Appendix D). Although we received the names and addresses of about 94% of all HIP-certified hunters in time to sample them, the number of records received from Arizona, Florida, Georgia, Idaho, Kentucky, Maryland, New Mexico, and Oklahoma in 1999 and/or 2000 was only 20-70% 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 2000, Arizona instituted a migratory bird stamp to HIP-certify hunters, and there was a large increase in HIP certifications beginning then because dove hunters were required to purchase the stamp (Appendix D). Minnesota implemented an electronic licensing system in 2000 that also resulted in a large increase compared to 1999, when HIP certification was included on Minnesota's paper hunting license (Appendix D). Other increases in HIP certifications over time were the result of state efforts to increase compliance among migratory bird hunters (e.g., Montana, Michigan). In still other cases (Tennessee in 1999 and Florida, Georgia, and North Dakota in 2000), 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 our sampling rates were far too low (e.g., the 1999 dove survey sample for Rhode Island), or we did not receive enough of the state's sample frame in time to sample it adequately, both of which resulted in smaller than expected sample sizes. There were also some stratification data coding discrepancies that resulted in a few inordinately large sample sizes (e.g., the 1999 woodcock survey and the 1999 snipe, rail, gallinule, and coot survey for Maine).

State-specific response rates for the waterfowl harvest surveys ranged from 36 to 74% for 1999 and 32 to 71% for 2000, with an overall rate of 52% for both years (Appendix G1). Response rates for the other 3 surveys were similar in range but slightly higher overall, at 56% (1999) and 54% (2000) for the dove and band-tailed pigeon surveys (Appendix G2); 60% (1999) and 57% (2000) for the woodcock surveys (Appendix G3); and 56% (1999) and 52% (2000) 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 U.S.

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 1961-2000 and point estimates from the HIP waterfowl harvest survey for 1999 and 2000. Federal Duck Stamp sales for 1999 and 2000 (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 92,215 duck wings and 16,194 goose tails and primary tips through the 1999 PCS, whereas the 2000 sample consisted of 89,526 duck wings and 18,008 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 the 4-year average based on 983 rail wings collected from 1997 (the first year rail wings were collected) through 2000 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).

In addition to the 4 surveys described earlier, we initiated a sandhill crane (*Grus canadensis*) harvest survey only in Alaska in 2000. We sampled 360, 175 of whom responded (49% response

rate). We estimated that 1,000 (± 20%) active sandhill crane hunters spent 3,800 (± 31%) days hunting cranes and harvested 1,200 (± 46%) cranes in 2000.

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 1999 and 2000 seasons were reported in, "Sandhill crane harvest and hunter activity in the Central Flyway during the 2000-2001 hunting season" (Martin 2002).

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Table 1A. Estimates of waterfowl harvest and hunter activity in the Atlantic Flyway during the 1999 and 2000 hunting seasons.

	Connecticut		Delaware		Florida	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	17,293	11,955	10,253	12,828	679	505
Domestic Mallard	302	404	218	155	291	126
Black Duck	5,731	3,812	4,472	7,153	97	126
Mallard x Black Duck Hybrid	503	289	327	1,088	0	0
Mottled Duck	0	0	0	0	5,240	7,823
Gadwall	503	924	3,818	2,488	4,464	4,416
Wigeon	201	809	1,636	544	5,240	3,281
Green-winged Teal	4,927	1,559	28,360	19,514	24,743	21,451
Blue-winged/Cinnamon Teal	101	0	1,963	1,788	49,390	54,006
Northern Shoveler	0	0	1,418	2,332	6,210	5,300
Northern Pintail	201	0	2,836	1,011	4,172	1,893
Wood Duck	4,725	1,790	5,890	3,499	23,870	25,741
Redhead	0	0	0	0	2,038	883
Canvasback	101	347	0	0	291	631
Greater Scaup	0	116	0	0	194	252
Lesser Scaup	0	0	109	155	1,844	6,057
Ring-necked Duck	0	58	436	155	78,791	29,527
Goldeneyes	101	173	0	0	291	126
Bufflehead	1,005	1,502	654	1,399	1,650	252
Ruddy Duck	503	58	109	311	5,919	5,931
Long-tailed Duck	3,100	2,700	---[c]	600	97	0
Eiders	0	0	---[c]	0	0	0
Scoters	0	0	---[c]	0	194	0
Hooded Merganser	302	404	764	389	2,911	4,669
Other Mergansers	603	1,502	436	389	291	0
Other Ducks	0	0	0	0	194	505
Total Duck Harvest	40,200±26%	28,400±21%	64,800±19%[c]	55,800±15%	219,100±43%	173,500±77%
Total Active Duck Hunters[a]	4,200±14%	3,400±15%	4,400±14%	4,200±14%	14,000±31%	6,900±79%
Total Duck Hunter Days Afield[a]	32,400±21%	25,000±21%	36,100±17%	29,000±13%	83,300±36%	71,200±88%
Seasonal Duck Harvest Per Hunter[a]	8.8±29%	7.5±26%	14.5±23%	13.1±20%	15.6±53%	25.1±110%
Goose Species Composition						
Canada Goose	20,348	20,066	5,032	2,752	1,040	0
Snow Goose	52	34	25,832	33,687	0	0
Blue Goose	0	0	335	661	260	0
Ross's Goose	0	0	0	0	0	0
White-fronted Goose	0	0	0	0	0	0
Brant	0	300	1,500	1,700	0	0
Other Geese	0	0	0	0	0	0
Total Goose Harvest	20,400±37%	20,400±33%	32,700±45%	38,800±37%	1,300±154%	0
Total Active Goose Hunters[b]	3,900±16%	3,400±15%	2,400±19%	3,100±15%	600±138%	0
Total Goose Hunter Days Afield[b]	19,900±26%	20,000±23%	13,000±29%	14,000±23%	1,000±146%	0
Seasonal Goose Harvest Per Hunter[b]	5.2±40%	5.9±37%	13.0±49%	12.1±40%	2.0±207%	0
Active Waterfowl Hunters	5,300±10%	4,600±12%	4,700±13%	5,100±12%	14,000±31%	6,900±79%
Sample Sizes						
Duck Wings	383	502	584	711	2,258	1,375
Goose Tails	394	605	96	345	5	0

Table 1A. Estimates of waterfowl harvest and hunter activity in the Atlantic Flyway during the 1999 and 2000 hunting seasons.

	Georgia		Maine		Maryland	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	25,680	20,852	11,119	11,023	50,992	72,201
Domestic Mallard	529	1,285	86	339	1,961	1,700
Black Duck	1,588	571	11,895	9,073	8,537	18,135
Mallard x Black Duck Hybrid	265	143	776	1,865	923	2,607
Mottled Duck	265	286	0	0	0	0
Gadwall	3,706	8,998	0	0	11,075	8,047
Wigeon	1,853	571	259	85	12,113	6,801
Green-winged Teal	8,207	10,997	12,929	8,818	41,186	25,276
Blue-winged/Cinnamon Teal	4,236	2,714	948	170	5,768	2,040
Northern Shoveler	1,059	1,143	0	0	1,500	1,473
Northern Pintail	265	143	517	424	3,230	3,967
Wood Duck	97,955	90,405	6,465	11,023	17,420	10,881
Redhead	0	143	0	0	461	1,133
Canvasback	265	571	0	0	2,538	8,161
Greater Scaup	0	143	86	85	4,038	6,121
Lesser Scaup	265	2,571	172	85	17,074	10,314
Ring-necked Duck	24,356	17,281	776	848	577	907
Goldeneyes	0	0	1,034	1,102	577	1,247
Bufflehead	0	428	3,103	3,561	4,961	10,088
Ruddy Duck	794	571	0	0	1,038	340
Long-tailed Duck	0	0	863	1,977	7,459	2,633
Eiders	0	0	11,351	26,884	0	0
Scoters	0	0	3,386	5,140	4,541	7,267
Hooded Merganser	2,912	3,285	1,638	1,441	1,384	1,473
Other Mergansers	0	0	1,896	1,357	346	1,360
Other Ducks	0	0	0	0	0	227
Total Duck Harvest	174,200±48%	163,100±42%	69,300±32%	85,300±26%	199,700±14%	204,400±23%
Total Active Duck Hunters[a]	21,000±29%	18,900±28%	8,300±21%	8,500±17%	18,500±10%	17,900±13%
Total Duck Hunter Days Afield[a]	120,500±37%	101,700±37%	45,400±26%	42,200±23%	105,400±12%	107,500±22%
Seasonal Duck Harvest Per Hunter[a]	8.3±56%	8.6±50%	6.4±39%	6.0±31%	10.1±17%	10.9±27%
Goose Species Composition						
Canada Goose	12,500	12,175	3,300	10,545	27,773	29,949
Snow Goose	0	0	0	555	8,927	10,150
Blue Goose	0	325	0	0	0	501
Ross's Goose	0	0	0	0	0	0
White-fronted Goose	0	0	0	0	0	0
Brant	0	0	0	0	200	100
Other Geese	0	0	0	0	0	0
Total Goose Harvest	12,500±44%	12,500±57%	3,300±52%	11,100±33%	36,900±45%	40,700±35%
Total Active Goose Hunters[b]	10,300±38%	8,900±39%	3,300±37%	4,500±24%	5,600±32%	6,200±24%
Total Goose Hunter Days Afield[b]	28,300±50%	29,300±67%	11,000±49%	19,000±34%	16,500±32%	27,300±30%
Seasonal Goose Harvest Per Hunter[b]	1.2±58%	1.4±69%	1.0±64%	2.5±41%	6.5±56%	6.6±42%
Active Waterfowl Hunters	21,100±29%	19,000±28%	9,100±20%	10,200±16%	20,900±9%	20,500±12%
Duck Wings	658	1,142	858	777	1,664	1,810
Goose Tails	58	77	129	100	265	330

Table 1A. Estimates of waterfowl harvest and hunter activity in the Atlantic Flyway during the 1999 and 2000 hunting seasons.

	Massachusetts		New Hampshire		New Jersey	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	7,856	9,871	6,809	6,304	23,389	27,003
Domestic Mallard	107	80	221	79	255	491
Black Duck	3,955	5,315	1,724	2,364	16,506	13,092
Mallard x Black Duck Hybrid	321	360	486	512	829	1,064
Mottled Duck	0	0	0	0	0	0
Gadwall	775	240	0	79	829	1,473
Wigeon	561	200	0	39	2,167	818
Green-winged Teal	1,389	1,279	1,592	788	15,168	15,956
Blue-winged/Cinnamon Teal	0	0	133	79	191	82
Northern Shoveler	0	0	0	0	510	82
Northern Pintail	107	0	88	79	1,211	1,473
Wood Duck	2,592	2,318	2,874	1,931	5,863	4,828
Redhead	0	0	0	0	0	0
Canvasback	53	80	0	0	191	409
Greater Scaup	27	40	44	0	637	818
Lesser Scaup	27	0	44	0	191	245
Ring-necked Duck	160	160	0	39	1,912	409
Goldeneyes	160	160	44	158	127	900
Bufflehead	1,202	2,238	221	79	7,265	5,973
Ruddy Duck	27	0	0	0	4,589	736
Long-tailed Duck	418	174	0	17	833	1,071
Eiders	4,324	4,345	350	295	0	0
Scoters	558	2,781	350	988	1,667	1,429
Hooded Merganser	107	40	88	236	2,294	2,373
Other Mergansers	775	120	531	433	1,976	1,473
Other Ducks	0	0	0	0	0	0
Total Duck Harvest	25,500±16%	29,800±18%	15,600±25%	14,500±18%	88,600±20%	82,200±15%
Total Active Duck Hunters[a]	2,900±8%	3,300±11%	3,100±10%	3,000±19%	8,400±9%	7,900±9%
Total Duck Hunter Days Afield[a]	17,800±12%	19,400±15%	19,100±16%	17,300±20%	51,800±14%	51,500±17%
Seasonal Duck Harvest Per Hunter[a]	7.0±18%	6.9±21%	4.8±27%	4.4±26%	10.3±22%	10.1±18%
Goose Species Composition						
Canada Goose	11,933	11,300	4,500	5,200	18,622	25,603
Snow Goose	0	0	0	0	4,978	8,597
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	100	800	0	0	6,700	5,800
Other Geese	67	0	0	0	0	0
Total Goose Harvest	12,100±50%	12,100±36%	4,500±29%	5,200±28%	30,300±20%	40,000±26%
Total Active Goose Hunters[b]	2,100±20%	2,000±15%	2,100±13%	2,500±22%	4,600±18%	4,600±13%
Total Goose Hunter Days Afield[b]	14,000±39%	9,700±24%	12,000±24%	12,600±32%	21,300±20%	24,800±22%
Seasonal Goose Harvest Per Hunter[b]	5.7±54%	5.7±39%	2.1±31%	2.1±36%	5.1±27%	7.4±30%
Active Waterfowl Hunters	3,400±7%	3,800±9%	3,400±9%	4,200±14%	9,600±8%	8,800±7%
Sample Sizes						
Duck Wings	794	605	365	410	1,366	981
Goose Tails	358	389	112	137	616	420

Table 1A. Estimates of waterfowl harvest and hunter activity in the Atlantic Flyway during the 1999 and 2000 hunting seasons.

	New York		North Carolina		Pennsylvania	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	87,925	100,071	38,491	63,526	69,894	86,910
Domestic Mallard	677	1,034	1,190	1,625	1,604	1,802
Black Duck	18,595	23,359	5,952	6,205	7,104	9,612
Mallard x Black Duck Hybrid	1,601	3,017	529	886	573	2,403
Mottled Duck	0	0	0	0	0	0
Gadwall	3,263	2,327	14,021	16,103	1,375	801
Wigeon	5,049	2,672	15,476	8,864	1,031	701
Green-winged Teal	22,535	12,153	37,301	29,695	9,281	6,008
Blue-winged/Cinnamon Teal	2,709	1,465	5,555	3,693	917	300
Northern Shoveler	554	259	2,381	2,955	344	401
Northern Pintail	3,510	2,069	6,746	4,875	344	501
Wood Duck	25,737	23,962	98,808	80,515	36,322	38,949
Redhead	123	2,500	926	1,330	0	0
Canvasback	554	1,551	1,058	1,773	229	100
Greater Scaup	2,463	2,327	661	1,182	115	100
Lesser Scaup	2,524	1,465	34,656	7,387	2,406	401
Ring-necked Duck	3,941	1,896	14,550	16,989	2,062	601
Goldeneyes	5,726	6,292	132	0	229	701
Bufflehead	7,635	6,378	13,756	5,762	1,833	2,203
Ruddy Duck	493	86	11,375	2,068	2,750	501
Long-tailed Duck	1,286	1,864	132	148	0	100
Eiders	257	207	0	0	0	0
Scoters	2,057	829	1,455	148	115	0
Hooded Merganser	1,970	1,810	6,349	7,978	3,094	1,902
Other Mergansers	3,017	3,706	397	295	2,865	2,503
Other Ducks	0	0	0	0	115	0
Total Duck Harvest	204,200±11%	203,300±20%	311,900±34%	264,000±22%	144,600±17%	157,500±19%
Total Active Duck Hunters[a]	20,000±7%	17,700±11%	27,000±26%	33,900±23%	30,600±13%	31,800±13%
Total Duck Hunter Days Afield[a]	133,400±9%	121,800±15%	149,500±25%	182,100±24%	156,300±14%	161,300±18%
Seasonal Duck Harvest Per Hunter[a]	10.0±13%	11.3±23%	11.6±43%	7.8±32%	4.7±22%	5.0±23%
Goose Species Composition						
Canada Goose	80,400	89,581	29,086	29,477	151,618	111,159
Snow Goose	1,626	1,316	4,914	424	4,682	10,445
Blue Goose	0	101	0	0	0	96
Ross's Goose	0	0	0	0	0	0
White-fronted Goose	0	0	0	0	0	0
Brant	2,900	6,600	4,900	1,600	0	0
Other Geese	74	101	0	0	0	0
Total Goose Harvest	85,000±15%	97,700±30%	38,900±60%	31,500±77%	156,300±23%	121,700±21%
Total Active Goose Hunters[b]	16,700±9%	14,700±11%	10,500±44%	13,400±38%	38,600±11%	33,700±12%
Total Goose Hunter Days Afield[b]	86,700±13%	75,100±21%	30,600±56%	30,300±41%	195,700±15%	165,200±16%
Seasonal Goose Harvest Per Hunter[b]	4.9±18%	6.2±32%	3.2±75%	2.2±86%	4.1±26%	3.6±24%
Active Waterfowl Hunters	24,000±6%	21,400±9%	29,900±26%	34,300±23%	43,100±11%	45,000±11%
Sample Sizes						
Duck Wings	3,272	2,339	2,358	1,787	1,262	1,573
Goose Tails	1,141	984	258	359	1,135	1,270

Table 1A. Estimates of waterfowl harvest and hunter activity in the Atlantic Flyway during the 1999 and 2000 hunting seasons.

	Rhode Island		South Carolina		Vermont	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	2,256	3,597	34,076	29,492	6,533	8,287
Domestic Mallard	90	27	859	413	80	78
Black Duck	2,211	2,079	1,432	1,654	1,884	2,124
Mallard x Black Duck Hybrid	45	373	286	276	160	259
Mottled Duck	0	0	143	965	0	0
Gadwall	1,083	213	11,311	6,615	40	26
Wigeon	361	480	2,148	9,785	120	26
Green-winged Teal	406	160	16,895	25,358	5,130	2,357
Blue-winged/Cinnamon Teal	135	0	8,877	10,336	361	78
Northern Shoveler	45	0	2,148	2,618	80	78
Northern Pintail	45	27	286	1,929	441	181
Wood Duck	948	533	49,825	64,911	2,685	2,383
Redhead	0	0	143	551	0	0
Canvasback	0	80	0	413	40	0
Greater Scaup	0	453	0	689	40	0
Lesser Scaup	0	80	573	689	200	0
Ring-necked Duck	0	0	10,738	17,089	641	414
Goldeneyes	226	53	0	0	1,042	233
Bufflehead	812	666	430	827	240	388
Ruddy Duck	0	27	0	138	0	0
Long-tailed Duck	0	0	0	0	0	78
Eiders	1,500	0	0	0	0	0
Scoters	0	1,200	0	0	0	0
Hooded Merganser	90	160	1,432	5,650	80	181
Other Mergansers	45	293	0	0	200	129
Other Ducks	0	0	0	0	0	0
Total Duck Harvest	10,300±17%	10,500±21%	141,600±23%	180,400±26%	20,000±23%	17,300±18%
Total Active Duck Hunters[a]	1,100±12%	900±15%	16,800±20%	15,800±21%	1,600±24%	1,700±23%
Total Duck Hunter Days Afield[a]	6,900±14%	7,000±20%	100,500±17%	112,400±25%	11,400±15%	12,400±19%
Seasonal Duck Harvest Per Hunter[a]	7.9±21%	9.8±25%	8.4±31%	11.4±33%	12.1±33%	10.1±29%
Goose Species Composition						
Canada Goose	3,300	3,165	10,000	11,100	3,298	3,738
Snow Goose	0	35	0	0	1,402	4,284
Blue Goose	0	0	0	0	0	78
Ross's Goose	0	0	0	0	0	0
White-fronted Goose	0	0	0	0	0	0
Brant	300	300	0	0	0	0
Other Geese	0	0	0	0	0	0
Total Goose Harvest	3,600±19%	3,500±28%	10,000±60%	11,100±53%	4,700±32%	8,100±39%
Total Active Goose Hunters[b]	800±16%	700±18%	6,000±37%	5,200±43%	2,000±24%	2,000±23%
Total Goose Hunter Days Afield[b]	3,900±18%	3,900±22%	17,000±51%	17,700±46%	9,400±44%	9,600±32%
Seasonal Goose Harvest Per Hunter[b]	4.3±25%	4.9±33%	1.7±70%	2.1±68%	2.4±41%	4.1±45%
Active Waterfowl Hunters	1,400±11%	1,200±13%	16,800±20%	15,800±21%	2,000±26%	2,100±23%
Sample Sizes						
Duck Wings	196	351	989	1,309	499	668
Goose Tails	125	183	15	60	57	104

Table 1A. Estimates of waterfowl harvest and hunter activity in the Atlantic Flyway during the 1999 and 2000 hunting seasons.

	Virginia		West Virginia		Flyway Total	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	49,463	55,928	1,359	2,692	444,068	523,046
Domestic Mallard	490	786	29	76	8,991	10,502
Black Duck	10,284	10,740	29	682	101,997	116,096
Mallard x Black Duck Hybrid	735	2,096	44	0	8,402	17,238
Mottled Duck	0	0	0	0	5,648	9,074
Gadwall	5,877	14,670	73	76	62,212	67,496
Wigeon	1,714	3,143	0	152	49,929	38,970
Green-winged Teal	11,386	9,299	117	114	241,552	190,783
Blue-winged/Cinnamon Teal	490	1,179	102	265	81,876	78,195
Northern Shoveler	1,102	1,310	0	0	17,350	17,950
Northern Pintail	1,102	1,441	0	38	25,101	20,050
Wood Duck	15,427	16,241	1,359	2,502	398,765	382,412
Redhead	122	917	0	0	3,814	7,457
Canvasback	245	2,358	0	0	5,566	16,474
Greater Scaup	0	524	0	0	8,305	12,850
Lesser Scaup	4,163	2,882	15	0	64,263	32,331
Ring-necked Duck	8,570	8,907	0	190	147,511	95,470
Goldeneyes	0	393	0	0	9,690	11,538
Bufflehead	16,529	6,549	15	38	61,312	48,332
Ruddy Duck	1,592	262	0	0	29,188	11,029
Long-tailed Duck	529	1,520	0	0	14,718	12,882
Eiders	0	0	0	0	17,782	31,731
Scoters	3,171	2,280	0	0	17,493	22,060
Hooded Merganser	3,795	3,929	58	38	29,269	35,960
Other Mergansers	1,714	1,048	0	38	15,092	14,647
Other Ducks	0	0	0	0	309	731
Total Duck Harvest	138,500±19%	148,400±24%	3200[d]	6,900±93%	1,871,300±10%[c]	1,825,300±11%
Total Active Duck Hunters[a]	15,300±16%	15,200±17%	1,100±96%	1,000±39%	198,500[e]	192,200[e]
Total Duck Hunter Days Afield[a]	76,800±17%	97,500±23%	2,200±45%	5,600±47%	1,145,900±7%	1,164,900±9%
Seasonal Duck Harvest Per Hunter[a]	8.8±25%	9.5±29%	3.1±96%	6.7±101%		
Goose Species Composition						
Canada Goose	34,697	47,332	5,455	3,675	422,902	416,818
Snow Goose	1,703	968	0	0	54,115	70,495
Blue Goose	0	0	0	0	595	1,761
Ross's Goose	0	0	0	0	0	0
White-fronted Goose	0	0	0	0	0	0
Brant	1,700	7,700	0	0	18,300	24,900
Other Geese	0	0	45	25	187	126
Total Goose Harvest	38,100±25%	56,000±24%	5,500±103%	3,700±31%	496,100±11%	514,100±11%
Total Active Goose Hunters[b]	9,100±19%	14,700±16%	700±85%	1,000±37%	119,300[e]	120,600[e]
Total Goose Hunter Days Afield[b]	33,800±22%	56,300±23%	2,400±95%	5,100±35%	516,300±8%	519,800±8%
Seasonal Goose Harvest Per Hunter[b]	4.0±31%	3.3±29%	8.2±134%	3.5±48%		
Active Waterfowl Hunters	17,800±14%	20,300±14%	1,100±95%	1,500±30%	227,800[e]	224,800[e]
Sample Sizes						
Duck Wings	1,108	1,114	219	182	18,833	17,636
Goose Tails	516	484	121	148	5,401	5,995

Table 1B. Estimates of waterfowl harvest and hunter activity in the Mississippi Flyway during the 1999 and 2000 hunting seasons.

	Alabama		Arkansas		Illinois	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	33,033	105,142	1,125,685	1,022,812	186,005	197,551
Domestic Mallard	0	485	0	1,382	920	253
Black Duck	359	6,783	3,362	1,382	2,759	2,533
Mallard x Black Duck Hybrid	0	969	1,009	1,036	0	507
Mottled Duck	359	0	0	0	0	0
Gadwall	30,520	60,566	260,575	333,683	18,853	64,078
Wigeon	3,232	14,051	32,950	34,197	4,598	10,131
Green-winged Teal	13,644	17,443	138,525	127,463	22,762	25,327
Blue-winged/Cinnamon Teal	39,137	30,525	47,408	35,234	30,120	28,113
Northern Shoveler	1,436	1,938	53,796	59,759	7,587	13,423
Northern Pintail	1,077	1,938	29,588	22,453	3,219	7,345
Wood Duck	61,399	78,978	119,360	81,866	52,422	45,336
Redhead	359	0	2,354	1,036	2,759	3,546
Canvasback	0	485	336	1,036	4,139	5,319
Greater Scaup	0	0	0	345	1,839	760
Lesser Scaup	359	969	2,017	19,689	14,485	11,144
Ring-necked Duck	7,181	12,113	19,501	22,107	11,496	8,358
Goldeneyes	0	0	0	1,036	2,759	1,266
Bufflehead	3,950	0	4,035	5,181	6,438	7,092
Ruddy Duck	359	0	672	0	230	1,013
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	0	0	336	0	230	0
Hooded Merganser	1,795	5,814	5,716	7,599	1,380	253
Other Mergansers	0	0	336	0	0	253
Other Ducks	0	0	336	0	0	0
Total Duck Harvest	198,200±49%	338,200±53%	1,847,900±11%	1,779,300±10%	375,000±14%	433,600±11%
Total Active Duck Hunters	14,200±26%	14,100±32%	72,800±7%	80,100±7%	33,800±9%	33,700±8%
Total Duck Hunter Days Afield	108,200±41%	143,700±50%	643,600±8%	675,000±9%	329,700±13%	284,900±11%
Seasonal Duck Harvest Per Hunter	14.0±55%	24.0±62%	25.4±13%	22.2±12%	11.1±16%	12.9±14%
Goose Species Composition						
Canada Goose	2,300	3,900	11,868	69,927	117,624	138,704
Snow Goose	0	0	60,660	72,549	1,076	3,963
Blue Goose	0	0	38,242	45,453	0	3,302
Ross's Goose	0	0	3,956	3,496	0	330
White-fronted Goose	0	0	25,714	24,474	0	0
Brant	0	0	0	0	0	0
Other Geese	0	0	659	0	0	0
Total Goose Harvest	2,300±84%	3,900±106%	141,100±24%	215,900±29%	118,700±32%	146,300±14%
Total Active Goose Hunters	2,400±68%	2,600±76%	19,200±13%	25,200±12%	29,200±9%	33,000±8%
Total Goose Hunter Days Afield	3,800±67%	17,300±99%	82,400±21%	129,600±21%	276,700±16%	246,100±12%
Seasonal Goose Harvest Per Hunter	1.0±108%	1.5±131%	7.4±27%	8.6±31%	4.1±33%	4.4±17%
Active Waterfowl Hunters	14,200±26%	14,100±32%	74,100±7%	81,200±7%	38,700±8%	41,300±8%
Sample Sizes						
Duck Wings	552	698	5,496	5,151	1,631	1,712
Goose Tails	3	23	214	247	331	443

Table 1B. Estimates of waterfowl harvest and hunter activity in the Mississippi Flyway during the 1999 and 2000 hunting seasons.

	Indiana		Iowa		Kentucky	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	53,765	66,538	68,440	73,939	102,619	176,836
Domestic Mallard	0	0	0	404	0	1,579
Black Duck	1,801	2,568	0	0	14,660	12,105
Mallard x Black Duck Hybrid	257	467	0	0	506	1,579
Mottled Duck	0	0	0	0	0	0
Gadwall	4,116	11,206	7,887	32,525	28,309	34,209
Wigeon	257	1,868	763	6,061	2,528	4,737
Green-winged Teal	6,431	9,105	22,898	33,131	4,550	4,737
Blue-winged/Cinnamon Teal	7,718	7,237	51,902	26,868	8,594	7,894
Northern Shoveler	257	1,401	5,852	5,859	506	526
Northern Pintail	515	934	3,816	4,242	506	0
Wood Duck	18,522	11,907	36,891	28,687	30,331	36,841
Redhead	515	233	1,527	606	0	3,158
Canvasback	0	0	254	202	506	526
Greater Scaup	0	0	254	0	506	0
Lesser Scaup	0	233	4,834	2,424	0	1,579
Ring-necked Duck	2,315	1,634	1,527	4,040	2,022	1,579
Goldeneyes	0	934	1,272	1,010	1,517	0
Bufflehead	4,373	467	1,018	0	0	2,105
Ruddy Duck	515	1,167	0	0	0	0
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	772	0	0	0	0	0
Hooded Merganser	515	700	763	202	4,044	2,105
Other Mergansers	257	0	0	0	0	2,105
Other Ducks	0	0	0	0	0	0
Total Duck Harvest	102,900±22%	118,600±19%	209,900±12%	220,200±13%	201,700±55%	294,200±69%
Total Active Duck Hunters	14,700±20%	13,200±16%	21,500±6%	21,500±6%	18,100±37%	20,400±40%
Total Duck Hunter Days Afield	103,500±19%	101,900±20%	173,000±10%	165,900±11%	192,000±54%	166,500±49%
Seasonal Duck Harvest Per Hunter	7.0±29%	9.0±25%	9.8±14%	10.2±15%	11.2±66%	14.4±80%
Goose Species Composition						
Canada Goose	54,900	69,522	37,027	65,348	26,578	33,922
Snow Goose	0	0	15,231	6,266	0	0
Blue Goose	0	0	8,403	2,387	0	0
Ross's Goose	0	0	1,576	0	0	0
White-fronted Goose	0	0	263	0	422	0
Brant	0	0	0	0	0	0
Other Geese	0	178	0	298	0	278
Total Goose Harvest	54,900±23%	69,700±21%	62,500±33%	74,300±19%	27,000±66%	34,200±59%
Total Active Goose Hunters	16,500±14%	14,800±14%	16,000±10%	17,700±8%	6,200±45%	7,300±55%
Total Goose Hunter Days Afield	101,200±20%	95,300±18%	107,000±16%	116,900±14%	66,800±64%	42,511±35%
Seasonal Goose Harvest Per Hunter	3.3±27%	4.7±25%	3.9±35%	4.2±21%	4.3±80%	4.7±81%
Active Waterfowl Hunters	17,400±18%	17,200±14%	23,500±5%	24,600±5%	18,100±37%	22,400±37%
Sample Sizes						
Duck Wings	400	508	825	1,090	399	559
Goose Tails	219	392	238	249	64	123

Table 1B. Estimates of waterfowl harvest and hunter activity in the Mississippi Flyway during the 1999 and 2000 hunting seasons.

	Louisiana		Michigan		Minnesota	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	354,432	425,842	127,212	143,023	272,260	270,020
Domestic Mallard	327	913	364	543	1,034	314
Black Duck	1,636	1,217	10,556	10,584	345	1,254
Mallard x Black Duck Hybrid	0	304	1,092	1,357	689	627
Mottled Duck	27,818	27,071	0	0	0	0
Gadwall	478,140	437,401	2,548	4,614	17,576	26,657
Wigeon	66,436	72,089	6,006	3,799	15,853	19,444
Green-winged Teal	424,795	268,281	33,123	26,868	73,062	59,586
Blue-winged/Cinnamon Teal	338,069	346,757	8,190	4,071	67,548	107,255
Northern Shoveler	73,636	68,439	1,274	271	14,475	10,349
Northern Pintail	69,708	66,310	5,278	4,614	8,271	15,681
Wood Duck	196,689	160,908	45,862	50,479	151,639	126,699
Redhead	15,709	6,388	8,554	10,041	19,644	16,621
Canvasback	12,763	17,034	3,458	4,071	9,994	8,781
Greater Scaup	327	1,825	2,912	6,785	2,412	3,450
Lesser Scaup	8,509	92,469	6,552	5,156	21,712	25,403
Ring-necked Duck	68,726	52,014	9,464	4,614	103,735	104,119
Goldeneyes	0	0	3,822	2,443	8,960	8,154
Bufflehead	2,291	2,738	27,481	11,127	28,605	10,349
Ruddy Duck	1,309	608	546	271	4,480	1,568
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	327	0	546	1,086	1,379	0
Hooded Merganser	7,200	6,388	3,822	3,257	7,927	8,154
Other Mergansers	327	304	5,642	1,628	0	314
Other Ducks	327	0	0	0	0	0
Total Duck Harvest	2,149,500±13%	2,055,300±13%	314,300±17%	300,700±14%	831,600±12%	824,800±7%
Total Active Duck Hunters	86,300±6%	70,700±7%	44,300±9%	46,000±10%	96,400±7%	88,900±4%
Total Duck Hunter Days Afield	697,900±10%	667,500±12%	264,100±13%	275,400±15%	633,700±10%	594,000±6%
Seasonal Duck Harvest Per Hunter	24.9±14%	29.1±14%	7.1±19%	6.5±17%	8.6±14%	9.3±8%
Goose Species Composition						
Canada Goose	0	1,978	92,872	117,000	233,663	222,000
Snow Goose	84,662	34,281	0	0	653	2,333
Blue Goose	43,742	30,985	0	0	979	5,667
Ross's Goose	2,822	3,296	0	0	0	0
White-fronted Goose	73,374	71,859	0	0	979	0
Brant	0	0	0	0	0	0
Other Geese	0	0	428	0	326	0
Total Goose Harvest	204,600±28%	142,400±26%	93,300±18%	117,000±16%	236,600±14%	230,000±10%
Total Active Goose Hunters	28,100±14%	19,500±15%	33,800±10%	33,500±11%	76,900±8%	72,200±5%
Total Goose Hunter Days Afield	140,200±23%	119,300±24%	165,800±16%	182,700±17%	494,200±12%	466,200±8%
Seasonal Goose Harvest Per Hunter	7.3±31%	7.3±30%	2.8±20%	3.5±20%	3.1±16%	3.2±11%
Active Waterfowl Hunters	86,900±6%	71,200±7%	55,200±7%	55,100±8%	108,000±7%	102,200±4%
Sample Sizes						
Duck Wings	6,568	6,757	1,727	1,108	2,413	2,630
Goose Tails	145	216	436	337	725	690

Table 1B. Estimates of waterfowl harvest and hunter activity in the Mississippi Flyway during the 1999 and 2000 hunting seasons.

	Mississippi		Missouri		Ohio	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	145,787	123,770	197,578	213,496	50,555	80,521
Domestic Mallard	0	825	353	473	310	842
Black Duck	882	0	353	237	4,497	6,733
Mallard x Black Duck Hybrid	588	275	353	0	155	1,403
Mottled Duck	6,172	825	0	0	0	0
Gadwall	73,187	85,539	47,983	86,156	8,995	7,295
Wigeon	5,291	10,727	6,704	15,385	1,551	2,244
Green-winged Teal	28,217	22,004	32,459	36,214	8,064	14,870
Blue-winged/Cinnamon Teal	18,517	8,251	49,747	29,586	17,524	17,114
Northern Shoveler	14,402	8,801	14,465	13,018	1,241	842
Northern Pintail	5,585	4,126	8,468	10,178	1,396	1,122
Wood Duck	49,085	29,430	28,225	14,912	24,192	30,300
Redhead	294	275	2,117	1,894	620	281
Canvasback	0	550	706	710	620	1,964
Greater Scaup	294	550	0	0	0	842
Lesser Scaup	1,176	5,226	2,823	2,840	3,257	7,295
Ring-necked Duck	10,581	4,676	7,409	5,917	2,171	2,525
Goldeneyes	0	0	0	0	620	561
Bufflehead	3,527	275	0	0	1,396	1,122
Ruddy Duck	1,764	0	0	0	1,086	281
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	0	0	0	237	310	0
Hooded Merganser	2,351	1,100	1,058	947	1,086	1,964
Other Mergansers	0	275	0	0	155	281
Other Ducks	0	0	0	0	0	0
Total Duck Harvest	367,700±35%	307,500±20%	400,800±25%	432,200±23%	129,800±21%	180,400±20%
Total Active Duck Hunters	15,100±20%	17,000±19%	28,100±13%	26,900±15%	21,700±15%	28,100±16%
Total Duck Hunter Days Afield	121,800±25%	124,100±15%	215,500±20%	220,100±27%	148,400±16%	203,000±22%
Seasonal Duck Harvest Per Hunter	24.4±41%	18.1±27%	14.3±29%	16.1±28%	6.0±26%	6.4±26%
Goose Species Composition						
Canada Goose	14,186	18,943	34,582	43,757	65,784	100,445
Snow Goose	9,457	4,371	28,703	14,096	0	0
Blue Goose	5,911	0	16,599	10,278	0	0
Ross's Goose	1,182	0	1,383	1,175	0	0
White-fronted Goose	2,364	7,286	5,533	294	0	0
Brant	0	0	0	0	0	0
Other Geese	0	0	0	0	216	654
Total Goose Harvest	33,100±73%	30,600±56%	86,800±33%	69,600±29%	66,000±26%	101,100±14%
Total Active Goose Hunters	4,500±36%	6,200±30%	14,800±17%	15,500±18%	23,400±14%	32,600±16%
Total Goose Hunter Days Afield	22,400±47%	30,900±49%	93,600±26%	82,700±25%	146,600±18%	177,400±15%
Seasonal Goose Harvest Per Hunter	7.4±81%	4.9±64%	5.9±37%	4.5±34%	2.8±30%	3.1±21%
Active Waterfowl Hunters	15,100±20%	17,400±19%	30,000±13%	31,200±14%	26,100±14%	36,700±15%
Sample Sizes						
Duck Wings	1,251	1,118	1,136	1,826	837	643
Goose Tails	28	21	251	237	306	309

Table 1B. Estimates of waterfowl harvest and hunter activity in the Mississippi Flyway during the 1999 and 2000 hunting seasons.

	Tennessee		Wisconsin		Flyway Total	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	254,050	196,858	166,303	176,323	3,137,726	3,272,671
Domestic Mallard	1,079	1,259	970	0	5,356	9,271
Black Duck	11,866	9,654	4,606	3,321	57,682	58,371
Mallard x Black Duck Hybrid	1,079	2,518	727	1,208	6,454	12,250
Mottled Duck	0	0	0	0	34,349	27,897
Gadwall	81,447	60,443	8,970	22,946	1,069,106	1,267,317
Wigeon	13,485	11,333	11,152	11,473	170,804	217,539
Green-winged Teal	36,678	11,753	63,030	34,721	908,239	691,501
Blue-winged/Cinnamon Teal	10,788	21,826	41,212	39,854	736,473	710,588
Northern Shoveler	4,854	5,037	7,273	6,642	201,054	196,306
Northern Pintail	10,788	5,037	5,091	9,058	153,304	153,036
Wood Duck	85,762	42,813	78,303	69,744	978,683	808,899
Redhead	0	0	7,273	4,529	61,723	48,608
Canvasback	2,158	1,259	5,576	7,246	40,510	49,183
Greater Scaup	0	0	727	4,529	9,272	19,085
Lesser Scaup	539	2,938	14,545	6,642	80,808	184,008
Ring-necked Duck	4,315	9,654	14,061	24,154	264,504	257,504
Goldeneyes	0	839	3,636	1,812	22,587	18,055
Bufflehead	1,618	420	11,636	7,850	96,367	48,726
Ruddy Duck	1,079	0	4,364	1,510	16,403	6,418
Long-tailed Duck	0	420	242	302	242	722
Eiders	0	0	0	0	0	0
Scoters	0	0	242	0	4,142	1,322
Hooded Merganser	4,315	2,518	4,606	3,925	46,577	44,927
Other Mergansers	0	0	1,455	1,812	8,172	6,972
Other Ducks	0	420	0	0	663	420
Total Duck Harvest	525,900±22%	387,000±25%	456,000±9%	439,600±10%	8,111,200±5%	8,111,600±6%
Total Active Duck Hunters	38,100±22%	27,200±24%	70,900±7%	65,800±6%	575,900[e]	553,600[e]
Total Duck Hunter Days Afield	304,400±22%	193,100±24%	425,700±8%	407,500±7%	4,361,600±4%	4,222,700±4%
Seasonal Duck Harvest Per Hunter	13.8±31%	14.2±34%	6.4±11%	6.7±12%		
Goose Species Composition						
Canada Goose	37,074	62,000	110,576	89,483	839,034	1,036,929
Snow Goose	976	0	221	0	201,638	137,861
Blue Goose	650	0	1,104	517	115,630	98,590
Ross's Goose	0	0	0	0	10,919	8,298
White-fronted Goose	0	0	0	0	108,649	103,913
Brant	0	0	0	0	0	0
Other Geese	0	0	0	0	1,629	1,409
Total Goose Harvest	38,700±46%	62,000±32%	111,900±12%	90,000±13%	1,277,500±8%	1,387,000±7%
Total Active Goose Hunters	21,700±29%	31,100±24%	59,800±7%	56,400±7%	352,400[e]	367,500[e]
Total Goose Hunter Days Afield	204,300±41%	213,100±38%	343,900±11%	309,100±10%	2,248,800±6%	2,229,200±5%
Seasonal Goose Harvest Per Hunter	1.8±54%	2.0±40%	1.9±14%	1.6±15%		
Active Waterfowl Hunters	38,900±22%	29,400±23%	85,800±6%	77,900±6%	631,900[e]	621,800[e]
Sample Sizes						
Duck Wings	975	922	1,881	1,456	26,091	26,178
Goose Tails	119	56	507	348	3,586	3,691

Table 1C. Estimates of waterfowl harvest and hunter activity in the Central Flyway during the 1999 and 2000 hunting seasons.

	Colorado		Kansas		Nebraska	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	53,558	64,820	114,167	102,846	91,025	118,548
Domestic Mallard	0	70	0	0	0	129
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	7,407	9,730	27,189	29,363	16,045	23,452
Wigeon	5,535	6,230	7,075	12,520	7,714	13,143
Green-winged Teal	9,035	12,460	24,970	32,493	29,776	21,648
Blue-winged/Cinnamon Teal	7,081	8,890	34,958	30,109	14,039	18,555
Northern Shoveler	1,791	2,030	4,578	1,789	6,017	3,221
Northern Pintail	1,058	2,520	5,410	7,453	5,245	7,474
Wood Duck	1,872	1,820	4,439	2,683	11,725	6,958
Redhead	1,058	910	3,468	2,832	2,314	2,448
Canvasback	81	140	832	149	926	0
Greater Scaup	0	140	139	0	0	129
Lesser Scaup	163	980	277	149	1,389	773
Ring-necked Duck	895	2,100	4,717	1,341	2,006	1,675
Goldeneyes	651	2,730	694	2,236	154	644
Bufflehead	407	770	277	894	154	0
Ruddy Duck	163	210	277	447	309	258
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	0	70	0	0	0	0
Hooded Merganser	0	140	694	447	154	129
Other Mergansers	163	70	139	0	309	515
Other Ducks	81	70	0	149	0	0
Total Duck Harvest	91,000±26%	116,900±21%	234,300±16%	227,900±17%	189,300±13%	219,700±11%
Total Active Duck Hunters	14,000±16%	14,000±16%	16,900±13%	14,900±14%	20,200±9%	19,200±8%
Total Duck Hunter Days Afield	79,500±21%	81,000±18%	126,800±13%	107,400±14%	152,200±11%	129,400±11%
Seasonal Duck Harvest Per Hunter	6.5±30%	8.4±26%	13.9±21%	15.3±22%	9.4±16%	11.4±14%
Goose Species Composition						
Canada Goose	56,711	96,646	67,355	98,905	64,775	113,441
Snow Goose	11,242	6,990	8,214	6,594	25,017	8,234
Blue Goose	250	152	3,012	2,198	7,371	2,379
Ross's Goose	3,997	912	1,643	0	4,914	1,098
White-fronted Goose	0	0	5,476	11,303	223	549
Brant	0	0	0	0	0	0
Other Geese	0	0	0	0	0	0
Total Goose Harvest	72,200±33%	104,700±20%	85,700±21%	119,000±20%	102,300±22%	125,700±15%
Total Active Goose Hunters	15,300±15%	18,400±13%	14,400±13%	17,300±13%	19,400±9%	19,500±8%
Total Goose Hunter Days Afield	93,700±18%	111,800±18%	93,300±16%	112,200±18%	144,100±11%	152,000±10%
Seasonal Goose Harvest Per Hunter	4.7±36%	5.7±24%	5.9±25%	6.9±24%	5.3±23%	6.5±17%
Active Waterfowl Hunters	19,400±13%	20,300±13%	20,400±12%	19,000±13%	24,700±8%	25,000±7%
Sample Sizes						
Duck Wings	1,118	1,670	1,689	1,529	1,227	1,705
Goose Tails	578	689	313	379	458	687

Table 1C. Estimates of waterfowl harvest and hunter activity in the Central Flyway during the 1999 and 2000 hunting seasons.

	New Mexico		North Dakota		Oklahoma	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	9,365	24,621	254,256	182,521	114,589	116,379
Domestic Mallard	0	74	182	109	0	331
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	2,605	7,372	106,500	94,423	62,244	44,235
Wigeon	2,605	5,824	22,536	22,134	14,452	10,811
Green-winged Teal	4,647	6,634	19,992	23,224	36,755	20,077
Blue-winged/Cinnamon Teal	2,781	6,856	23,808	23,006	8,534	11,142
Northern Shoveler	1,338	1,622	22,899	11,339	5,462	3,530
Northern Pintail	1,091	3,022	26,716	18,645	6,259	5,626
Wood Duck	458	1,769	2,726	1,963	7,965	3,640
Redhead	70	516	18,719	9,922	2,731	3,530
Canvasback	106	74	7,633	4,906	1,366	1,544
Greater Scaup	0	0	182	218	569	110
Lesser Scaup	0	295	18,174	23,006	455	882
Ring-necked Duck	704	663	6,724	7,523	12,176	8,273
Goldeneyes	211	74	545	0	0	0
Bufflehead	35	295	4,544	3,380	455	1,324
Ruddy Duck	0	0	1,272	545	228	221
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	0	0	363	0	0	0
Hooded Merganser	0	0	727	436	1,934	1,103
Other Mergansers	35	516	0	0	228	441
Other Ducks	246	1,474	0	0	0	0
Total Duck Harvest	26,300±47%	61,700±95%	538,500±10%	427,300±11%	276,400±17%	233,200±28%
Total Active Duck Hunters	2,200±31%	3,100±25%	39,200±6%	32,200±8%	13,800±17%	13,500±37%
Total Duck Hunter Days Afield	14,100±43%	24,600±51%	224,000±9%	166,300±9%	107,500±19%	91,800±34%
Seasonal Duck Harvest Per Hunter	11.8±57%	19.6±99%	13.7±12%	13.3±13%	20.0±24%	17.2±47%
Goose Species Composition						
Canada Goose	3,258	6,593	110,727	105,649	35,773	49,566
Snow Goose	2,993	3,690	33,074	13,530	4,336	5,647
Blue Goose	88	242	28,940	17,589	361	2,196
Ross's Goose	1,761	1,815	360	338	361	941
White-fronted Goose	0	60	899	2,481	2,168	3,451
Brant	0	0	0	113	0	0
Other Geese	0	0	0	0	0	0
Total Goose Harvest	8,100±43%	12,400±41%	174,000±15%	139,700±23%	43,000±24%	61,800±57%
Total Active Goose Hunters	1,700±40%	2,700±28%	30,600±7%	26,000±8%	12,000±17%	7,300±48%
Total Goose Hunter Days Afield	6,500±61%	16,400±43%	160,700±9%	123,500±12%	54,200±23%	37,000±60%
Seasonal Goose Harvest Per Hunter	4.9±58%	4.7±49%	5.7±16%	5.4±25%	3.6±29%	8.4±75%
Active Waterfowl Hunters	3,000±27%	4,300±22%	42,900±5%	36,600±7%	15,100±17%	13,700±37%
Sample Sizes						
Duck Wings	747	837	2,963	3,919	2,429	2,114
Goose Tails	92	205	968	1,239	119	197

Table 1C. Estimates of waterfowl harvest and hunter activity in the Central Flyway during the 1999 and 2000 hunting seasons.

	South Dakota		Texas		Wyoming	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	145,196	110,607	182,755	283,116	31,083	29,489
Domestic Mallard	0	0	0	524	0	81
Black Duck	0	0	0	0	0	0
Mallard x Black Duck Hybrid	0	0	0	262	0	0
Mottled Duck	0	0	7,607	12,047	0	0
Gadwall	41,960	24,162	290,029	373,472	2,525	2,925
Wigeon	11,400	8,680	126,778	136,975	3,134	3,168
Green-winged Teal	24,067	24,983	200,309	208,212	2,960	2,762
Blue-winged/Cinnamon Teal	22,167	13,254	160,910	261,640	1,480	1,381
Northern Shoveler	14,250	5,630	63,584	71,761	871	569
Northern Pintail	12,984	8,211	69,435	81,975	1,567	650
Wood Duck	6,334	5,630	87,574	94,023	348	81
Redhead	7,125	4,926	62,999	60,237	871	894
Canvasback	1,742	1,642	20,284	18,333	87	81
Greater Scaup	158	0	1,755	1,833	0	0
Lesser Scaup	3,483	4,223	12,873	52,380	348	81
Ring-necked Duck	7,442	3,871	58,708	84,332	1,045	81
Goldeneyes	158	352	780	1,048	871	731
Bufflehead	2,217	938	3,901	5,762	261	162
Ruddy Duck	1,583	821	3,316	3,405	261	0
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	0	0	195	0	0	0
Hooded Merganser	317	352	8,972	5,762	0	81
Other Mergansers	0	117	390	786	87	81
Other Ducks	317	0	6,046	10,214	0	0
Total Duck Harvest	302,900±13%	218,400±16%	1,369,200±13%	1,768,100±23%	47,800±43%	43,300±28%
Total Active Duck Hunters	24,000±9%	18,400±12%	86,300±12%	115,600±11%	4,600±32%	4,300±13%
Total Duck Hunter Days Afield	151,100±11%	105,500±15%	508,900±12%	704,900±19%	30,100±42%	23,900±19%
Seasonal Duck Harvest Per Hunter	12.6±16%	11.9±20%	15.9±18%	15.3±25%	10.4±54%	10.1±31%
Goose Species Composition						
Canada Goose	146,071	123,303	72,395	125,837	12,098	28,686
Snow Goose	11,796	2,833	264,677	251,674	242	114
Blue Goose	7,471	3,166	62,549	58,724	60	0
Ross's Goose	1,180	333	49,808	38,895	0	0
White-fronted Goose	983	2,166	103,670	163,970	0	0
Brant	0	0	0	0	0	0
Other Geese	0	0	0	0	0	0
Total Goose Harvest	167,500±22%	131,800±17%	553,100±20%	639,100±37%	12,400±52%	28,800±19%
Total Active Goose Hunters	24,700±8%	21,600±11%	67,900±13%	67,000±14%	3,300±37%	4,600±12%
Total Goose Hunter Days Afield	165,800±11%	126,400±15%	232,300±17%	285,500±28%	16,600±42%	26,400±14%
Seasonal Goose Harvest Per Hunter	6.8±24%	6.1±20%	8.1±24%	9.5±40%	3.7±64%	6.3±23%
Active Waterfowl Hunters	32,600±7%	27,100±9%	104,700±11%	129,300±11%	6,000±27%	7,000±9%
Sample Sizes						
Duck Wings	1,913	1,862	7,020	6,751	549	533
Goose Tails	852	791	955	838	205	253

Table 1C. Estimates of waterfowl harvest and hunter activity in the Central Flyway during the 1999 and 2000 hunting seasons.

	Flyway Total	
Duck Species Composition	1999	2000
Mallard	995,993	1,032,948
Domestic Mallard	182	1,318
Black Duck	0	0
Mallard x Black Duck Hybrid	0	262
Mottled Duck	7,607	12,047
Gadwall	556,504	609,134
Wigeon	201,229	219,484
Green-winged Teal	352,511	352,494
Blue-winged/Cinnamon Teal	275,760	374,832
Northern Shoveler	120,790	101,491
Northern Pintail	129,766	135,575
Wood Duck	123,442	118,567
Redhead	99,356	86,216
Canvasback	33,057	26,870
Greater Scaup	2,803	2,431
Lesser Scaup	37,163	82,770
Ring-necked Duck	94,416	109,861
Goldeneyes	4,065	7,814
Bufflehead	12,251	13,526
Ruddy Duck	7,409	5,906
Long-tailed Duck	0	0
Eiders	0	0
Scoters	559	70
Hooded Merganser	12,798	8,450
Other Mergansers	1,350	2,527
Other Ducks	6,691	11,908
Total Duck Harvest	3,075,700±7%	3,316,500±13%
Total Active Duck Hunters	221,200[e]	235,300[e]
Total Duck Hunter Days Afield	1,394,200±6%	1,434,800±10%
Seasonal Duck Harvest Per Hunter		
Goose Species Composition		
Canada Goose	569,162	748,625
Snow Goose	361,591	299,305
Blue Goose	110,103	86,645
Ross's Goose	64,023	44,332
White-fronted Goose	113,419	183,980
Brant	0	113
Other Geese	0	0
Total Goose Harvest	1,218,300±10%	1,363,000±18%
Total Active Goose Hunters	189,400[e]	184,400[e]
Total Goose Hunter Days Afield	967,100±6%	991,100±9%
Seasonal Goose Harvest Per Hunter		
Active Waterfowl Hunters	268,800[e]	282,200[e]
Sample Sizes		
Duck Wings	19,655	20,920
Goose Tails	4,540	5,278

Table 1D. Estimates of waterfowl harvest and hunter activity in the Pacific Flyway during the 1999 and 2000 hunting seasons.

	Arizona		California		Idaho	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	14,513	17,224	328,165	309,475	187,001	170,973
Domestic Mallard	0	0	855	1,193	453	349
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	4,050	6,668	69,290	59,652	5,438	6,281
Wigeon	4,725	6,668	167,344	111,907	17,824	18,406
Green-winged Teal	11,925	7,779	285,180	192,079	18,579	14,393
Blue-winged/Cinnamon Teal	3,150	1,852	47,156	27,321	1,511	1,919
Northern Shoveler	2,475	3,149	109,495	83,274	2,719	2,617
Northern Pintail	1,800	2,408	120,509	82,200	6,193	6,019
Wood Duck	0	185	26,839	32,331	4,985	4,798
Redhead	1,800	1,482	4,919	4,056	453	1,134
Canvasback	225	926	12,725	10,618	0	349
Greater Scaup	0	0	2,780	2,983	302	87
Lesser Scaup	113	185	9,624	12,646	453	872
Ring-necked Duck	5,625	4,445	17,750	11,334	1,057	1,221
Goldeneyes	113	185	1,925	3,937	2,115	3,838
Bufflehead	1,800	1,111	5,026	4,176	1,359	174
Ruddy Duck	338	0	3,743	1,193	0	174
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	0	0	107	119	0	0
Hooded Merganser	0	185	1,069	1,551	151	785
Other Mergansers	0	926	0	716	755	611
Other Ducks	450	2,223	0	239	151	0
Total Duck Harvest	53,100±35%	57,600±64%	1,214,500±12%	953,000±12%	251,500±27%	235,000±25%
Total Active Duck Hunters	6,500±35%	2,700±26%	48,100±7%	44,900±7%	20,900±20%	17,100±21%
Total Duck Hunter Days Afield	33,900±40%	21,200±57%	463,200±10%	413,000±11%	146,700±28%	112,100±19%
Seasonal Duck Harvest Per Hunter	8.2±49%	21.3±69%	25.2±14%	21.2±14%	12.0±34%	13.7±33%
Goose Species Composition						
Canada Goose	5,357	1,419	17,633	24,289	97,866	89,100
Snow Goose	243	323	40,942	26,344	717	0
Blue Goose	0	0	203	0	0	0
Ross's Goose	0	258	26,957	5,605	358	0
White-fronted Goose	0	0	27,565	17,562	358	0
Brant	0	0	2,400	2,700	0	0
Other Geese	0	0	0	0	0	0
Total Goose Harvest	5,600±82%	2,000±96%	115,700±18%	76,500±16%	99,300±23%	89,100±31%
Total Active Goose Hunters	1,900±53%	1,000±53%	28,800±11%	26,200±12%	20,500±12%	19,500±14%
Total Goose Hunter Days Afield	10,800±77%	4,700±61%	216,600±16%	208,100±26%	135,500±16%	109,900±22%
Seasonal Goose Harvest Per Hunter	3.0±97%	2.0±109%	3.9±21%	2.8±20%	4.9±26%	4.6±34%
Active Waterfowl Hunters	8,000±33%	2,900±24%	48,900±7%	46,500±7%	24,500±18%	20,300±19%
Sample Sizes						
Duck Wings	472	311	11,358	7,988	1,665	2,694
Goose Tails	23	31	574	403	277	739

Table 1D. Estimates of waterfowl harvest and hunter activity in the Pacific Flyway during the 1999 and 2000 hunting seasons.

	Montana		Nevada		Oregon	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	89,283	107,163	29,209	15,254	203,013	202,972
Domestic Mallard	0	86	0	0	244	128
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	5,320	5,482	5,528	4,094	10,858	14,516
Wigeon	7,814	6,510	2,211	3,490	63,076	49,330
Green-winged Teal	5,154	4,283	27,289	15,556	45,751	55,111
Blue-winged/Cinnamon Teal	2,328	2,142	1,280	1,637	366	771
Northern Shoveler	2,910	1,371	5,237	1,896	17,568	14,002
Northern Pintail	1,912	2,142	6,575	3,318	27,085	30,446
Wood Duck	1,663	685	1,047	302	12,200	10,534
Redhead	1,164	1,114	1,338	431	2,074	2,569
Canvasback	1,081	685	989	215	2,318	3,083
Greater Scaup	0	257	0	0	14,518	12,204
Lesser Scaup	1,330	3,169	0	129	7,930	8,222
Ring-necked Duck	166	514	873	431	8,784	7,322
Goldeneyes	2,245	4,026	233	43	854	2,184
Bufflehead	249	171	407	172	7,930	8,222
Ruddy Duck	333	257	6,109	259	610	128
Long-tailed Duck	0	0	0	0	0	0
Eiders	0	0	0	0	0	0
Scoters	0	86	0	0	244	128
Hooded Merganser	249	171	58	86	1,220	1,285
Other Mergansers	0	600	116	86	732	514
Other Ducks	0	86	0	0	122	128
Total Duck Harvest	123,200±26%	141,000±18%	88,500±25%	47,400±17%	427,500±11%	423,800±15%
Total Active Duck Hunters	12,300±19%	11,300±10%	5,600±16%	4,800±14%	26,500±6%	26,100±7%
Total Duck Hunter Days Afield	70,500±23%	72,500±20%	36,300±19%	29,000±17%	212,100±10%	190,700±10%
Seasonal Duck Harvest Per Hunter	10.0±32%	12.5±20%	15.9±29%	9.9±22%	16.1±13%	16.3±16%
Goose Species Composition						
Canada Goose	31,545	80,989	9,736	6,055	75,451	67,748
Snow Goose	1,833	2,101	182	105	4,462	7,899
Blue Goose	0	0	0	0	0	0
Ross's Goose	506	955	91	105	406	0
White-fronted Goose	316	955	91	35	1,082	4,253
Brant	0	0	0	0	100	100
Other Geese	0	0	0	0	0	0
Total Goose Harvest	34,200±28%	85,000±14%	10,100±30%	6,300±22%	81,500±19%	80,000±16%
Total Active Goose Hunters	10,700±16%	12,300±7%	3,100±21%	2,700±16%	18,900±11%	16,200±10%
Total Goose Hunter Days Afield	60,300±26%	80,800±16%	12,200±26%	13,500±20%	113,900±23%	96,800±14%
Seasonal Goose Harvest Per Hunter	3.2±32%	6.9±16%	3.3±36%	2.3±27%	4.3±21%	4.9±19%
Active Waterfowl Hunters	14,400±15%	13,300±8%	5,800±15%	5,000±14%	27,800±6%	27,400±7%
Sample Sizes						
Duck Wings	1,482	1,646	1,521	1,100	3,504	3,299
Goose Tails	541	445	222	180	602	526

Table 1D. Estimates of waterfowl harvest and hunter activity in the Pacific Flyway during the 1999 and 2000 hunting seasons.

	Utah		Washington		Flyway Total	
Duck Species Composition	1999	2000	1999	2000	1999	2000
Mallard	71,979	66,000	371,461	332,374	1,294,623	1,221,435
Domestic Mallard	109	182	147	374	1,809	2,312
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	17,174	16,091	15,735	19,434	133,393	132,218
Wigeon	14,768	17,818	105,880	69,888	383,641	284,017
Green-winged Teal	66,181	53,818	55,293	63,161	515,352	406,180
Blue-winged/Cinnamon Teal	4,157	2,636	441	747	60,388	39,025
Northern Shoveler	43,209	11,909	7,206	10,714	190,819	128,932
Northern Pintail	21,112	19,091	34,705	40,612	219,891	186,236
Wood Duck	109	364	6,617	5,731	53,461	54,929
Redhead	4,047	2,818	1,618	1,744	17,413	15,348
Canvasback	1,313	3,000	2,059	997	20,709	19,874
Greater Scaup	328	182	1,029	3,114	18,958	18,827
Lesser Scaup	3,282	2,091	6,470	3,862	29,202	31,177
Ring-necked Duck	985	1,000	10,147	6,478	45,387	32,745
Goldeneyes	2,625	5,818	5,882	2,118	15,991	22,149
Bufflehead	328	727	12,794	4,734	29,894	19,488
Ruddy Duck	328	727	147	125	11,607	2,863
Long-tailed Duck	0	0	147	0	147	0
Eiders	0	0	0	0	0	0
Scoters	0	0	588	997	939	1,330
Hooded Merganser	0	91	2,059	747	4,807	4,902
Other Mergansers	766	4,545	588	125	2,958	8,122
Other Ducks	0	91	588	125	1,311	2,891
Total Duck Harvest	252,800±25%	209,000±18%	641,600±14%	568,200±20%	3,052,700±7%	2,635,000±7%
Total Active Duck Hunters	21,000±12%	19,500±12%	31,000±9%	30,500±8%	171,800[e]	157,000[e]
Total Duck Hunter Days Afield	163,400±42%	129,900±17%	298,700±15%	248,700±14%	1,424,700±7%	1,217,100±6%
Seasonal Duck Harvest Per Hunter	12.0±28%	10.7±22%	20.7±16%	18.6±22%		
Goose Species Composition						
Canada Goose	22,120	23,265	81,163	75,355	340,871	368,219
Snow Goose	180	118	2,686	1,463	51,246	38,352
Blue Goose	0	0	0	0	203	0
Ross's Goose	0	118	0	0	28,318	7,041
White-fronted Goose	0	0	350	2,683	29,763	25,488
Brant	0	0	800	200	3,300	3,000
Other Geese	0	0	0	0	0	0
Total Goose Harvest	22,300±31%	23,500±25%	85,000±15%	79,700±19%	453,700±9%	442,100±9%
Total Active Goose Hunters	12,900±13%	13,500±12%	16,800±11%	18,800±10%	113,600[e]	110,100[e]
Total Goose Hunter Days Afield	82,900±32%	81,000±20%	124,000±19%	107,500±18%	756,300±8%	702,200±10%
Seasonal Goose Harvest Per Hunter	1.7±34%	1.7±28%	5.0±19%	4.2±21%		
Active Waterfowl Hunters	21,500±12%	20,400±11%	32,500±8%	32,700±7%	183,400[e]	168,500[e]
Sample Sizes						
Duck Wings	2,311	2,299	4,363	4,561	26,676	23,898
Goose Tails	124	200	730	652	3,093	3,176

Table 1E. Estimates of waterfowl harvest and hunter activity in Alaska and the entire United States during the 1999 and 2000 hunting seasons.

	Alaska		United States Total	
Duck Species Composition	1999	2000	1999	2000
Mallard	23,385	19,085	5,895,795	6,069,184
Domestic Mallard	0	0	16,338	23,402
Black Duck	0	0	159,679	174,467
Mallard x Black Duck Hybrid	0	0	14,856	29,750
Mottled Duck	0	0	47,604	49,018
Gadwall	481	573	1,821,696	2,076,737
Wigeon	17,699	15,645	823,302	775,656
Green-winged Teal	13,375	10,239	2,031,028	1,651,197
Blue-winged/Cinnamon Teal	80	0	1,154,577	1,202,640
Northern Shoveler	2,723	3,522	532,736	448,200
Northern Pintail	10,652	17,119	538,714	512,016
Wood Duck	0	0	1,554,350	1,364,808
Redhead	0	164	182,306	157,792
Canvasback	0	246	99,841	112,646
Greater Scaup	400	573	39,739	53,766
Lesser Scaup	641	737	212,075	331,022
Ring-necked Duck	1,281	573	553,100	496,154
Goldeneyes	2,403	3,358	54,735	62,916
Bufflehead	481	983	200,305	131,055
Ruddy Duck	0	0	64,607	26,217
Long-tailed Duck	0	0	15,107	13,604
Eiders	0	0	17,782	31,731
Scoters	3,707	3,675	26,840	28,458
Hooded Merganser	0	82	93,451	94,321
Other Mergansers	93	1,225	27,665	33,493
Other Ducks	0	0	8,974	15,949
Total Duck Harvest	77,400±18%	77,800±11%	16,188,300±3%[c]	15,966,200±4%
Total Active Duck Hunters[a]	5,600±13%	6,000±6%	1,173,100[e]	1,144,100[e]
Total Duck Hunter Days Afield[a]	27,200±16%	34,100±11%	8,356,600±3%	8,073,600±3%
Seasonal Duck Harvest Per Hunter[a]	13.1±22%	12.1±13%		
Goose Species Composition				
Canada Goose	5,856	7,583	2,177,825	2,578,173
Snow Goose	167	87	668,758	546,100
Blue Goose	0	0	226,531	186,997
Ross's Goose	0	0	103,260	59,670
White-fronted Goose	2,677	1,743	254,508	315,124
Brant	1,400	300	23,000	28,313
Other Geese	0	87	1,816	1,622
Total Goose Harvest	10,100±34%	9,800±23%	3,455,700±5%	3,716,000±7%
Total Active Goose Hunters[b]	2,700±24%	3,000±11%	777,400[e]	785,600[e]
Total Goose Hunter Days Afield[b]	11,900±28%	14,100±17%	4,500,200±4%	4,456,500±4%
Seasonal Goose Harvest Per Hunter[b]	3.2±42%	3.2±25%		
Active Waterfowl Hunters	6,200±11%	6,700±6%	1,318,100[e]	1,304,100[e]
Sample Sizes				
Duck Wings	960	894	92,215	89,526
Goose Tails	56	131	16,676	18,271

[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 10.)

[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 11.)

[c] Harvest estimate contains 1,100 sea ducks harvested in Delaware for which there were no species composition estimates from the Parts Collection Survey.

[d] Variance inestimable.

[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.

Table 2. Flyway-specific point estimates of duck and goose harvest in Colorado, Montana, New Mexico, and Wyoming during the 1999 and 2000 hunting seasons.

	1999		2000	
	Central Flyway	Pacific Flyway	Central Flyway	Pacific Flyway
Duck Harvest				
Colorado	71,000	20,000	93,500	23,500
Montana	44,900	78,300	40,500	100,500
New Mexico	23,500	2,700	57,000	4,700
Wyoming	28,500	19,300	32,400	10,900
Goose Harvest				
Colorado	65,200	7,000	95,000	9,700
Montana	19,400	14,800	35,500	49,500
New Mexico	7,000	1,100	7,800	4,600
Wyoming	9,400	3,000	25,600	3,200

Table 3. Estimates of sea duck harvest and hunter activity for states with sea duck seasons and zones during the 1999 and 2000 hunting seasons.

	Sea Duck Harvest[a]		Active Sea Duck Hunters		Sea Duck Hunter Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	1999	2000	1999	2000	1999	2000	1999	2000
Connecticut	3,100 ± 114%	2,700 ± 50%	600 ± 51%	600 ± 45%	2,500 ± 68%	3,400 ± 83%	4.9 ± 124%	4.1 ± 67%
Delaware	1,100 ± 67%	600 ± 97%	400 ± 62%	200 ± 74%	600 ± 52%	300 ± 81%	3.2 ± 91%	3.8 ± 122%
Maine	15,600 ± 69%	34,000 ± 52%	1,900 ± 50%	4,000 ± 40%	6,200 ± 69%	12,900 ± 43%	8.1 ± 85%	8.4 ± 66%
Maryland	12,000 ± 40%	9,900 ± 56%	2,500 ± 34%	1,900 ± 46%	5,100 ± 33%	3,500 ± 53%	4.9 ± 52%	5.3 ± 72%
Massachusetts	5,300 ± 24%	7,300 ± 32%	900 ± 19%	900 ± 26%	2,800 ± 31%	2,900 ± 27%	5.7 ± 31%	8.1 ± 42%
New Hampshire	700 ± 100%	1,300 ± 114%	100 ± 71%	200 ± 74%	300 ± 88%	900 ± 90%	6.2 ± 123%	6.2 ± 136%
New Jersey	2,500 ± 44%	2,500 ± 66%	700 ± 42%	500 ± 53%	2,200 ± 48%	1,200 ± 58%	3.4 ± 61%	5.0 ± 84%
New York	3,600 ± 43%	2,900 ± 75%	1,300 ± 40%	700 ± 59%	6,600 ± 48%	4,800 ± 120%	2.8 ± 58%	4.3 ± 95%
Rhode Island	1,500 ± 37%	1,200 ± 49%	200 ± 26%	200 ± 30%	800 ± 27%	1,100 ± 43%	8.0 ± 45%	6.3 ± 57%
Virginia	3,700 ± 57%	3,800 ± 58%	1,300 ± 70%	1,800 ± 54%	2,600 ± 64%	5,100 ± 71%	2.9 ± 91%	2.2 ± 79%
Atlantic Flyway Total	49,200 ± 26%	66,100 ± 29%	9,900[c]	10,900[c]	29,800 ± 21%	36,000 ± 26%		
Alaska	3,800 ± 30%[b]	4,900 ± 52%	600 ± 44%	900 ± 27%	2,500 ± 54%	5,500 ± 44%	6.7 ± 72%	5.4 ± 59%
U.S. Total	53,000 ± 24%	71,000 ± 27%	10,500[c]	11,900[c]	32,200 ± 20%	41,500 ± 24%		

[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 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.

Table 4. Estimates of brant harvest and hunter activity along the Atlantic and Pacific coasts during the 1999 and 2000 hunting seasons.

	Brant Harvest		Active Brant Hunters		Brant Hunter Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	1999	2000	1999	2000	1999	2000	1999	2000
Connecticut	0	300 ± 73%	100 ± 140%	200 ± 85%	200 ± 150%	700 ± 107%	0	1.7 ± 112%
Delaware	1,500 ± 84%	1,700 ± 104%	300 ± 51%	300 ± 48%	1,100 ± 70%	1,300 ± 93%	5.1 ± 98%	5.2 ± 114%
Maryland	200 ± 79%	100 ± 118%	100 ± 53%	300 ± 141%	500 ± 75%	600 ± 142%	1.8 ± 95%	0.4 ± 184%
Massachusetts	100 ± 44%	800 ± 36%	200 ± 47%	300 ± 52%	400 ± 36%	1,000 ± 57%	0.9 ± 65%	2.4 ± 63%
New Jersey	6,700 ± 57%	5,800 ± 44%	1,700 ± 31%	1,500 ± 34%	6,300 ± 44%	4,800 ± 60%	3.9 ± 65%	4.0 ± 56%
New York	2,900 ± 41%	6,600 ± 50%	1,000 ± 35%	1,500 ± 37%	5,200 ± 33%	12,400 ± 61%	2.8 ± 54%	4.5 ± 62%
North Carolina	4,900 ± 105%	1,600 ± 115%	2,300 ± 90%	2,800 ± 87%	3,400 ± 89%	5,400 ± 90%	2.2 ± 138%	0.5 ± 144%
Rhode Island	300 ± 63%	300 ± 110%	100 ± 49%	100 ± 75%	400 ± 44%	600 ± 92%	2.3 ± 80%	3.1 ± 133%
Virginia	1,700 ± 53%	7,700 ± 52%	1,000 ± 55%	2,300 ± 37%	1,900 ± 41%	5,900 ± 51%	1.8 ± 77%	3.4 ± 64%
Atlantic Flyway Total	18,400 ± 36%	25,000 ± 25%	6,700[a]	9,300[a]	19,400 ± 24%	32,600 ± 31%		
California	2,400 ± 116%	2,700 ± 111%	700 ± 80%	1,100 ± 88%	2,300 ± 85%	4,100 ± 138%	3.2 ± 140%	2.6 ± 141%
Oregon	100 ± 140%	100 ± 194%	<50 ± 133%	100 ± 137%	200 ± 140%	200 ± 145%	3.0 ± 193%	0.5 ± 238%
Washington	800 ± 79%	200 ± 124%	400 ± 71%	200 ± 124%	900 ± 71%	1,100 ± 150%	1.8 ± 107%	1.0 ± 175%
Pacific Flyway Total	3,200 ± 87%	3,000 ± 101%	1,200[a]	1,400[a]	3,400 ± 62%	5,300 ± 110%		
Alaska	1,400 ± 99%	300 ± 51%	400 ± 72%	200 ± 45%	2,100 ± 91%	900 ± 44%	3.4 ± 123%	1.5 ± 68%
U.S. Total	23,000 ± 32%	28,400 ± 25%	8,300[a]	10,900[a]	25,000 ± 22%	38,800 ± 30%		

[a]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.

Table 5. Estimates of retrieved and unretrieved kill of waterfowl during the 1999 and 2000 hunting seasons.

	Ducks		Geese		Sea Ducks		Brant	
Flyway	1999	2000	1999	2000	1999	2000	1999	2000
Atlantic Flyway								
Retrieved kill	1,822,200 ± 10%	1,759,200 ± 11%	477,500 ± 11%	489,200 ± 11%	49,200 ± 26%	66,100 ± 29%	18,400 ± 36%	25,000 ± 25%
Unretrieved kill	312,700 ± 8%	285,300 ± 7%	48,100 ± 11%	39,800 ± 10%	12,900 ± 21%	11,600 ± 22%	2,000 ± 32%	2,400 ± 22%
Mississippi Flyway								
Retrieved kill	8,249,400 ± 5%	8,111,700 ± 6%	1,288,500 ± 8%	1,387,100 ± 7%				
Unretrieved kill	1,275,500 ± 5%	1,087,600 ± 5%	207,900 ± 10%	132,300 ± 6%				
Central Flyway								
Retrieved kill	3,075,800 ± 7%	3,316,500 ± 13%	1,218,300 ± 10%	1,363,000 ± 18%				
Unretrieved kill	414,900 ± 6%	433,200 ± 8%	149,500 ± 8%	121,000 ± 9%				
Pacific Flyway								
Retrieved kill	3,052,700 ± 7%	2,634,900 ± 7%	450,300 ± 9%	438,900 ± 9%			3,200 ± 87%	3,000 ± 101%
Unretrieved kill	386,000 ± 6%	328,800 ± 6%	65,500 ± 9%	45,000 ± 10%			100 ± 82%	700 ± 104%
United States								
Retrieved kill	16,273,800 ± 3%	15,895,200 ± 4%	3,443,400 ± 5%	3,687,900 ± 7%	53,000 ± 24%	71,000 ± 27%	23,000 ± 32%	28,400 ± 25%
Unretrieved kill	2,397,700 ± 3%	2,142,900 ± 3%	472,300 ± 6%	338,900 ± 4%	14,200 ± 19%	12,500 ± 20%	2,200 ± 29%	3,200 ± 28%

Table 6. Harvest estimates for special September teal/duck seasons in 1999 and 2000.

State	Harvest Estimates										Number of Wings Received	
	Green-winged Teal		Blue-winged/Cinnamon Teal		Wood Duck		Other Ducks		Total Duck Harvest			
	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000
September Teal Season												
Delaware	3,381	2,643	1,309	1,166	0	0	0	78	4,690	3,887	43	50
Georgia	0	428	3,971	2,142	0	0	0	0	3,971	2,571	15	18
Maryland	4,153	3,514	4,961	1,814	0	0	0	0	9,114	5,327	79	47
North Carolina	926	443	2,910	1,330	265	0	265	0	4,365	1,773	33	12
South Carolina	0	0	2,004	1,516	0	0	0	0	2,004	1,516	14	11
Virginia	367	655	122	917	0	0	0	0	490	1,572	4	12
Subtotal	8,828	7,684	15,278	8,884	265	0	265	78	24,634	16,646	188	150
Alabama	0	485	38,419	29,556	0	485	0	0	38,419	30,525	107	63
Arkansas	4,035	2,763	43,037	34,197	0	345	0	0	47,072	37,306	140	108
Illinois	920	1,520	23,452	23,301	230	0	0	0	24,601	24,821	107	98
Indiana	772	467	6,431	5,370	1,544	0	515	0	9,261	5,837	36	25
Louisiana	5,564	10,646	235,634	259,155	0	0	0	304	241,197	270,106	737	888
Mississippi	294	0	13,227	7,976	0	0	0	0	13,521	7,976	46	29
Missouri	6,351	1,657	45,866	26,510	0	0	353	0	52,570	28,166	149	119
Ohio	775	4,208	14,112	15,150	0	0	0	0	14,887	19,359	96	69
Subtotal	18,710	21,746	420,178	401,216	1,773	830	867	304	441,528	424,096	1,418	1,399
Colorado	244	770	2,360	1,610	163	0	81	0	2,849	2,380	35	34
Kansas	3,052	4,621	28,022	27,724	0	0	0	0	31,074	32,344	224	217
Nebraska	---	1,675	---	10,308	---	0	---	0	---	11,984	---	93
New Mexico	282	958	1,690	3,244	0	0	0	0	1,972	4,202	56	57
Oklahoma	2,503	4,192	7,852	9,597	0	0	0	0	10,355	13,789	91	125
Texas	6,436	20,428	130,094	196,688	0	262	195	0	136,725	217,379	701	830
Subtotal	12,518	32,644	170,017	249,171	163	262	276	0	182,974	282,077	1,107	1,356
Total	40,055	62,074	605,473	659,271	2,201	1,092	1,408	382	649,137	722,819	2,713	2,905
September Duck Season												
Florida	97	0	9,509	12,492	6,986	4,290	0	0	16,593	16,782	171	133
Kentucky	0	0	6,572	7,894	22,243	23,683	0	0	28,814	31,578	57	60
Tennessee	0	420	10,788	21,826	30,206	23,086	0	0	40,993	45,332	76	108
Total	97	420	26,869	42,213	59,435	51,059	0	0	86,400	93,692	304	301
U.S. Total	40,152	62,493	632,341	701,484	61,635	52,151	1,408	382	735,537	816,511	3,017	3,206

Table 7. Estimates of the number of Canada geese harvested during the special September, regular, and special late seasons during the 1999 and 2000 hunting seasons.

	September		Regular		Late		Total	
State / Flyway	1999	2000	1999	2000	1999	2000	1999	2000
Connecticut	6,100	4,400	10,100	10,000	4,100	5,700	20,300	20,100
Delaware	4,700	2,600	300	200	---	---	5,000	2,800
Florida	---	---	1,000	0	---	---	1,000	0
Georgia	---	---	12,500	12,200	---	---	12,500	12,200
Maine	1,300	5,200	2,100	5,300	---	---	3,400	10,500
Maryland	18,300	14,200	9,500	15,700	---	---	27,800	29,900
Massachusetts	4,700	2,800	5,500	5,300	1,700	3,200	11,900	11,300
New Hampshire	1,300	1,700	3,200	3,500	---	---	4,500	5,200
New Jersey	10,500	18,200	2,900	3,900	5,200	3,500	18,600	25,600
New York	59,300	63,100	19,900	25,600	1,200	900	80,400	89,600
North Carolina	20,100	20,500	9,000	9,000	---	---	29,100	29,500
Pennsylvania	94,900	67,500	38,500	27,500	18,200	16,200	151,600	111,200
Rhode Island	1,200	500	1,700	2,000	400	700	3,300	3,200
South Carolina	0	0	10,000	11,100	---	---	10,000	11,100
Vermont	2,200	2,900	1,100	800	---	---	3,300	3,700
Virginia	11,400	10,800	9,000	16,100	14,300	20,400	34,700	47,300
West Virginia	3,900	1,600	1,600	2,100	---	---	5,500	3,700
Atlantic Flyway Total	239,900	216,000	137,900	150,300	45,100	50,600	422,900	416,900
Alabama	800	3,400	1,500	500	---	---	2,300	3,900
Arkansas	---	---	11,900	69,900	---	---	11,900	69,900
Illinois	11,800	9,200	105,800	129,500	---	---	117,600	138,700
Indiana	27,300	29,200	27,600	40,300	---	---	54,900	69,500
Iowa	7,100	10,400	29,900	54,900	---	---	37,000	65,300
Kentucky	---	---	26,600	33,900	---	---	26,600	33,900
Louisiana	---	---	0	2,000	---	---	0	2,000
Michigan	44,700	73,300	45,600	39,200	2,600	4,500	92,900	117,000
Minnesota	78,300	91,300	145,900	126,700	9,500	4,000	233,700	222,000
Mississippi	10,600	11,700	3,600	7,200	---	---	14,200	18,900
Missouri	---	---	34,600	43,800	---	---	34,600	43,800
Ohio	23,500	21,900	40,600	78,500	1,700	0	65,800	100,400
Tennessee	11,100	12,200	26,000	49,800	---	---	37,100	62,000
Wisconsin	20,100	20,700	90,500	68,800	---	---	110,600	89,500
Mississippi Flyway Total	235,300	283,300	590,100	745,000	13,800	8,500	839,200	1,036,800
Kansas	1,100	900	66,300	98,000	---	---	67,400	98,900
North Dakota	0	38,700	110,700	66,900	---	---	110,700	105,600
Oklahoma	---	1,600	35,800	48,000	---	---	35,800	49,600
South Dakota	36,800	32,500	109,300	90,800	---	---	146,100	123,300
Idaho	1,100	0	96,800	89,100	---	---	97,900	89,100
Oregon	9,300	9,400	66,200	58,300	---	---	75,500	67,700
Washington	7,900	6,600	67,800	65,600	5,500	3,200	81,200	75,400
Wyoming	400	500	2,500	2,700	---	---	2,900	3,200

Table 8. Estimates of waterfowl harvest in Canada during the 1999 and 2000 hunting seasons (estimates courtesy of the Canadian Wildlife Service).

	Newfoundland		Prince Edward Isl.		Nova Scotia		New Brunswick		Quebec		Ontario		Manitoba	
Duck Species Composition	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000
Mallard	1,200	1,500	700	1,900	6,300	5,500	4,900	6,000	69,600	81,700	131,900	162,400	82,600	67,500
Black Duck	19,100	21,600	10,800	7,000	44,700	43,900	22,400	18,100	51,400	43,500	26,600	20,000	0	200
Gadwall	0	0	0	1,300	0	400	300	0	3,100	2,600	3,500	3,300	9,600	8,100
Wigeon	0	100	300	600	500	400	1,100	2,000	2,800	2,900	5,600	6,900	5,000	5,900
Green-winged Teal	6,900	7,100	5,500	1,400	17,100	6,500	10,300	10,900	54,600	49,100	42,000	24,300	10,600	8,200
Blue-winged/Cinnamon Teal	0	300	400	300	500	100	1,800	2,500	5,300	2,600	17,600	9,300	6,100	5,500
Northern Shoveler	100	200	0	0	0	0	300	200	1,300	1,600	1,300	800	4,800	2,400
Northern Pintail	400	500	1,100	500	800	500	1,800	600	9,000	6,500	6,500	5,400	9,800	2,600
Wood Duck	100	0	300	100	1,100	800	2,900	3,000	20,700	15,200	56,700	58,300	700	100
Redhead	0	0	0	0	0	0	0	0	100	0	5,600	3,100	7,400	15,600
Canvasback	0	0	0	0	0	0	0	0	0	100	2,100	3,100	5,100	4,800
Greater Scaup	1,400	1,100	0	0	300	1,200	100	700	4,200	3,000	4,700	3,200	900	0
Lesser Scaup	500	0	0	0	100	0	100	0	8,300	5,100	19,600	9,800	10,200	9,800
Ring-necked Duck	4,500	8,800	200	100	1,100	1,200	3,200	3,100	11,100	9,300	26,900	22,900	3,600	5,000
Goldeneyes	4,600	5,800	500	0	1,500	2,200	6,200	3,100	5,300	4,700	11,700	10,800	1,700	4,900
Bufflehead	100	0	0	0	1,700	900	200	0	2,400	1,000	9,700	13,900	2,700	7,000
Ruddy Duck	0	0	0	0	0	0	0	0	100	0	1,000	600	300	200
Long-tailed Duck	0	1,100	0	0	0	0	0	0	2,000	1,300	500	200	0	0
Eiders	5,000	11,100	0	0	1,600	1600	0	700	2,600	2,300	0	0	0	0
Scoters	2,800	700	0	0	6,100	2,400	100	1,300	5,800	2,100	800	400	300	0
Hooded Merganser	100	200	0	0	900	200	800	200	3,900	6,200	8,900	6,700	800	200
Other Mergansers	4,800	3,600	0	300	2,400	1,400	300	100	6,900	3,700	2,600	1,900	0	0
Other Ducks	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Duck Harvest	51,500	63,600	19,900	13,500	86,600	69,200	56,600	52,500	270,300	244,500	385,600	367,300	162,400	148,100
Goose Species Composition														
Canada Goose	5,500	8,200	32,900	25,900	12,600	13,500	6,100	8,400	38,700	38,900	100,800	125,300	68,800	74,600
Snow Goose	0	0	0	0	0	0	800	0	43,000	108,500	200	1,100	5,500	13,700
Blue Goose	0	0	0	0	0	0	0	0	600	800	0	300	8,700	18,000
Ross's Goose	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White-fronted Goose	0	0	0	0	0	0	0	0	200	100	0	500	0	0
Brant	0	0	0	0	0	0	0	0	100	200	0	0	200	1,700
Total Goose Harvest	5,500	8,200	32,900	25,900	12,600	13,500	6,900	8,400	82,500	148,600	101,000	127,100	83,100	108,100
Migratory Bird Permits Sold	13,111	12,217	2,671	2,805	7,410	7,072	6,821	6,399	30,124	30,271	67,077	63,672	17,433	15,810

Table 8. Estimates of waterfowl harvest in Canada during the 1999 and 2000 hunting seasons (estimates courtesy of the Canadian Wildlife Service).

	Saskatchewan		Alberta		British Columbia		Northwest Terr.		Yukon Territory		Canada Total	
Duck Species Composition	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000
Mallard	182,700	197,400	105,100	110,200	48,000	51,900	---	500	200	100	633,200	686,600
Black Duck	0	700	0	0	0	0	---	0	0	0	175,000	155,000
Gadwall	9,200	8,300	14,000	14,100	1,500	1,700	---	0	0	0	41,200	39,800
Wigeon	5,000	6,400	5,300	7,200	9,300	10,800	---	0	0	100	34,900	43,300
Green-winged Teal	500	2,600	3,600	2,900	3,600	3,700	---	0	100	0	154,800	116,700
Blue-winged/Cinnamon Teal	4,300	4,700	5,000	3,900	100	400	---	0	0	0	41,100	29,600
Northern Shoveler	7,800	3,600	9,100	5,400	900	1,100	---	0	0	0	25,600	15,300
Northern Pintail	10,600	13,500	10,300	9,400	5,500	2,200	---	0	0	0	55,800	41,700
Wood Duck	1,000	0	100	0	200	200	---	0	0	0	83,800	77,700
Redhead	2,200	2,600	1,000	1,900	0	0	---	0	0	0	16,300	23,200
Canvasback	0	600	800	1,100	100	0	---	0	0	0	8,100	9,700
Greater Scaup	0	0	0	0	0	0	---	0	0	0	11,600	9,200
Lesser Scaup	2,100	1,300	900	1,800	200	200	---	100	0	100	42,000	28,200
Ring-necked Duck	1,400	600	0	800	500	400	---	200	0	200	52,500	52,600
Goldeneyes	2,400	0	900	100	900	500	---	0	0	0	35,700	32,100
Bufflehead	3,100	0	1,400	1,400	200	300	---	100	0	0	21,500	24,600
Ruddy Duck	700	0	0	200	0	0	---	0	0	0	2,100	1,000
Long-tailed Duck	0	0	0	0	0	0	---	0	0	0	2,500	2,600
Eiders	0	0	0	0	0	0	---	0	0	0	9,200	15,700
Scoters	0	0	0	0	0	0	---	0	0	0	15,900	6,900
Hooded Merganser	0	0	200	200	100	0	---	0	0	0	15,700	13,900
Other Mergansers	0	0	0	0	0	0	---	0	0	0	17,000	11,000
Other Ducks	0	0	0	0	0	0	---	0	0	0	0	0
Total Duck Harvest	233,200	242,300	157,600	160,700	70,900	73,400	1,400	1,100	300	500	1,496,300	1,436,700
Goose Species Composition												
Canada Goose	146,100	167,900	137,500	132,600	16,100	16,500	0	---	100	0	565,200	611,800
Snow Goose	85,200	47,100	15,200	13,100	2,000	2,600	0	---	0	0	151,900	186,100
Blue Goose	31,100	21,900	400	200	0	0	0	---	0	100	40,800	41,300
Ross's Goose	47,300	86,600	15,000	20,000	0	200	0	---	0	0	62,300	106,800
White-fronted Goose	0	0	0	0	0	0	0	---	0	0	200	600
Brant	20,600	14,300	1,800	1,500	0	100	100	---	0	0	22,800	17,800
Total Goose Harvest	330,400	337,800	169,900	167,300	18,100	19,300	100	300	100	100	843,100	964,600
Migratory Bird Permits Sold	21,685	21,908	21,415	21,792	9,314	9,007	292	267	231	224	197,584	191,444

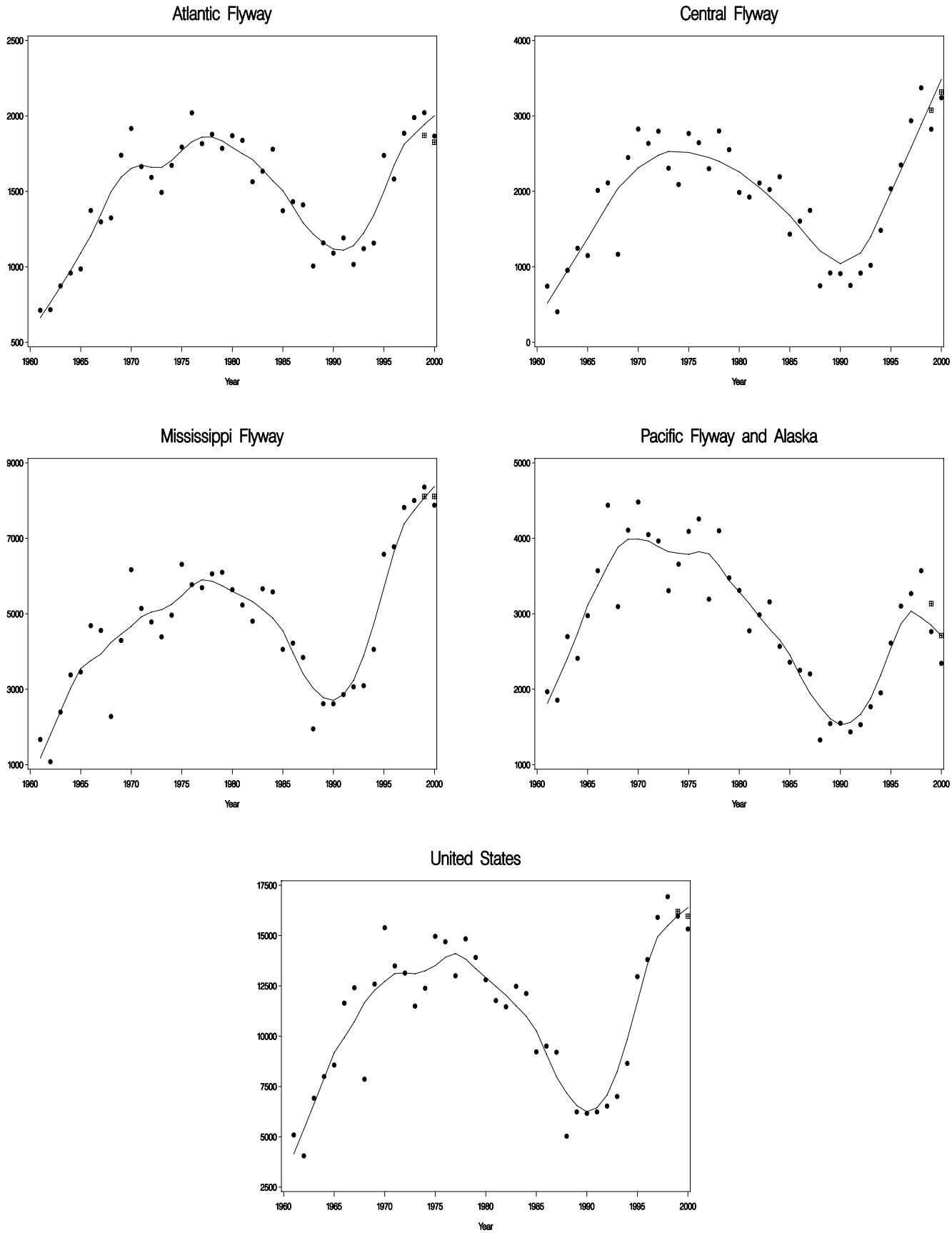

Figure 1. Number of ducks harvested (in thousands) by hunters in the United States, 1961-2000. (Federal Duck Stamp survey - circles and solid line; HIP survey - squares.)

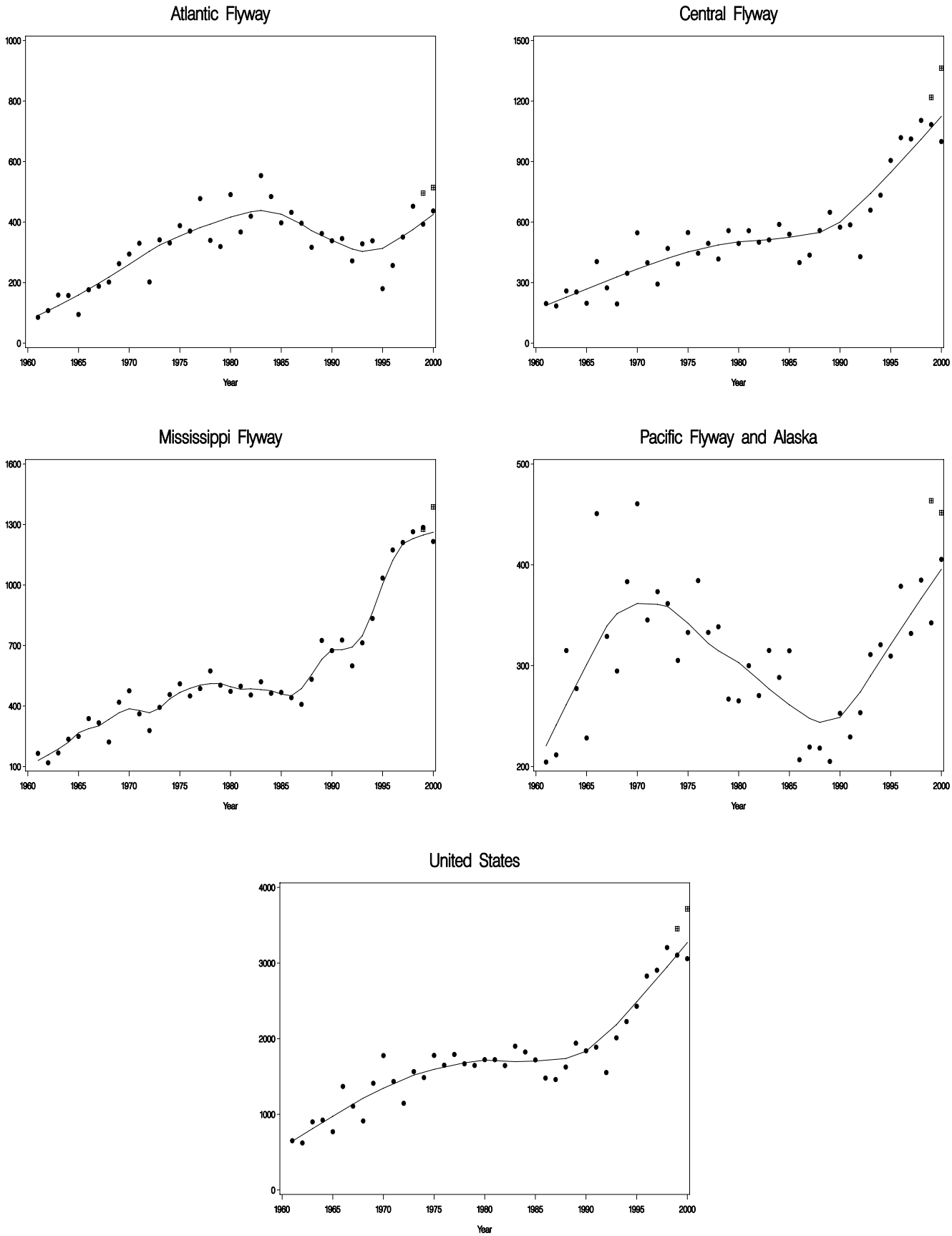

Figure 2. Number of geese harvested (in thousands) by hunters in the United States, 1961-2000. (Federal Duck Stamp survey - circles and solid line; HIP survey - squares.)

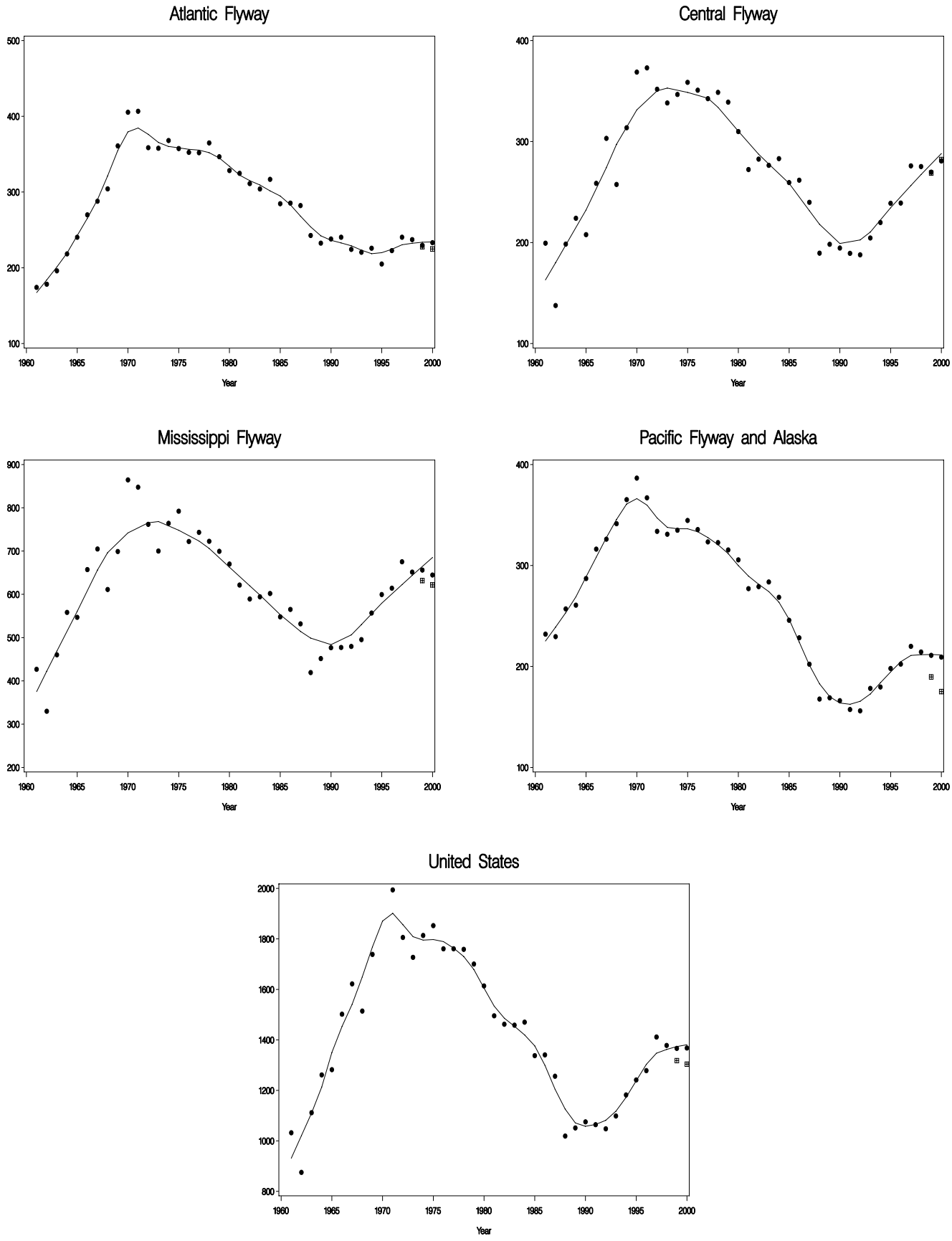

Figure 3. Number of active waterfowl hunters (in thousands) in the United States, 1961-2000. (Federal Duck Stamp survey - circles and solid line; HIP survey - squares.) Hunter number estimates may be biased high for the HIP survey because sample frames are state-specific, therefore hunters are counted twice if they hunted in more than one state.

Table 9. Age ratios of mallards in state harvests during the 1999 and 2000 hunting seasons as determined from the Waterfowl Parts Collection Survey.

	Immatures per Adult [a]		Immature Females per Adult Female [a]	
State and Flyway	1999	2000	1999	2000
Connecticut	0.9	0.8	1.5	1.4
Delaware	1.1	1.0	1.6	1.2
Florida	---	---	---	---
Georgia	1.1	0.4	1.5	0.5
Maine	1.2	1.5	1.2	1.8
Maryland	0.8	0.9	1.3	1.0
Massachusetts	1.6	1.3	2.2	1.9
New Hampshire	0.9	1.2	1.3	2.0
New Jersey	0.6	0.7	0.8	1.1
New York	1.2	1.2	1.4	1.9
North Carolina	0.8	1.0	1.3	1.2
Pennsylvania	0.8	0.9	1.6	1.5
Rhode Island	1.1	0.8	---	1.1
South Carolina	0.8	1.4	1.1	1.8
Vermont	1.5	1.6	1.3	2.5
Virginia	0.8	0.6	1.2	1.0
West Virginia	1.2	1.2	1.2	2.1
Atlantic Flyway Total [b]	0.91	0.92	1.35	1.31
Alabama	0.7	0.6	0.6	1.4
Arkansas	0.6	0.5	1.1	0.9
Illinois	1.0	0.7	1.5	1.4
Indiana	1.0	0.6	1.4	1.0
Iowa	1.4	1.2	2.0	2.1
Kentucky	1.0	0.9	1.6	1.1
Louisiana	0.8	0.5	1.3	0.8
Michigan	1.5	1.0	2.4	1.2
Minnesota	2.1	1.8	1.8	1.9
Mississippi	0.5	0.4	1.0	0.7
Missouri	0.8	0.6	1.4	1.1
Ohio	1.2	1.0	2.1	1.5
Tennessee	0.9	0.7	1.6	1.5
Wisconsin	1.8	1.3	2.0	1.6
Mississippi Flyway Total [b]	0.89	0.68	1.36	1.14

Table 9. Age ratios of mallards in state harvests during the 1999 and 2000 hunting seasons as determined from the Waterfowl Parts Collection Survey.

	Immatures per Adult [a]		Immature Females per Adult Female [a]	
State and Flyway	1999	2000	1999	2000
Colorado	0.7	0.6	1.2	1.1
Kansas	0.6	0.4	1.2	0.7
Montana	0.7	0.4	1.0	0.9
Nebraska	0.8	0.7	1.6	1.1
New Mexico	1.1	0.6	1.6	0.8
North Dakota	1.1	0.9	1.5	1.4
Oklahoma	0.5	0.2	0.8	0.4
South Dakota	0.9	0.8	1.3	1.4
Texas	0.5	0.5	0.8	0.8
Wyoming	0.4	0.5	1.6	0.5
Central Flyway Total [b]	0.73	0.54	1.16	0.92
Arizona	0.8	0.8	1.4	0.9
California	1.5	1.8	2.2	2.9
Colorado	1.3	1.1	1.9	1.7
Idaho	0.9	0.8	1.5	1.1
Montana	0.7	0.7	1.1	1.3
Nevada	1.5	1.2	1.8	1.7
New Mexico	1.3	0.4	---	---
Oregon	0.8	1.0	1.1	1.7
Utah	1.2	0.9	1.6	1.3
Washington	0.7	0.9	0.9	1.5
Wyoming	1.2	0.6	1.2	0.6
Pacific Flyway Total [b]	0.96	1.02	1.35	1.66
Alaska	5.3	2.4	6.3	1.9
U.S. Total [b]	0.88	0.74	1.33	1.22

[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 1999 and 2000 hunting seasons, by species and Flyway.

	Immatures per Adult [a,b]		Immature Females per Adult Female [a,b]	
State and Flyway	1999	2000	1999	2000
Mallard				
Atlantic	0.91	0.92	1.35	1.31
Mississippi	0.89	0.68	1.36	1.14
Central	0.73	0.54	1.16	0.92
Pacific	0.96	1.02	1.35	1.66
U.S. Total	0.88	0.74	1.33	1.22
Black duck				
Atlantic	0.99	0.83	1.41	1.11
Mississippi	1.35	0.63	1.33	0.68
U.S. Total	1.11	0.76	1.38	0.94
Mottled duck				
Atlantic	1.72	0.72	2.43	0.80
Mississippi	0.86	0.93	1.47	1.61
Central	0.46	0.38	0.33	0.40
U.S. Total	0.85	0.73	1.36	1.04
Gadwall				
Atlantic	1.98	0.79	2.95	1.14
Mississippi	1.25	0.71	2.02	1.17
Central	1.27	0.56	1.84	0.95
Pacific	0.92	0.92	2.05	1.54
U.S. Total	1.25	0.68	1.99	1.11
American wigeon				
Atlantic	1.08	0.50	1.76	0.87
Mississippi	0.99	0.59	2.10	1.12
Central	0.70	0.44	1.24	0.89
Pacific	0.88	0.94	1.70	1.99
U.S. Total	0.88	0.66	1.66	1.31
Green-winged teal				
Atlantic	2.37	1.20	2.66	1.70
Mississippi	1.63	1.07	2.42	1.86
Central	1.33	1.50	1.80	1.79
Pacific	1.04	1.21	1.46	1.84
U.S. Total	1.47	1.21	2.06	1.82
Blue-winged/Cinnamon teal				
Atlantic	1.39	0.74	2.28	0.88
Mississippi	1.95	1.39	2.44	1.89
Central	1.82	1.76	1.79	1.90
Pacific	1.27	0.96	1.68	1.60
U.S. Total	1.83	1.42	2.19	1.79

Table 10. Weighted age ratios of ducks harvested during the 1999 and 2000 hunting seasons, by species and Flyway.

	Immatures per Adult [a,b]		Immature Females per Adult Female [a,b]	
State and Flyway	1999	2000	1999	2000
Northern shoveler				
Atlantic	1.41	0.69	2.00	1.20
Mississippi	2.14	1.02	2.88	1.81
Central	1.77	0.70	2.04	1.00
Pacific	0.96	0.59	1.69	0.95
U.S. Total	1.50	0.79	2.14	1.29
Northern pintail				
Atlantic	1.16	0.57	2.28	0.73
Mississippi	1.26	0.91	2.38	2.79
Central	0.88	0.52	1.48	0.70
Pacific	0.97	0.81	1.84	1.60
U.S. Total	1.05	0.77	1.92	1.43
Wood duck				
Atlantic	1.04	1.22	1.24	1.36
Mississippi	1.38	0.99	1.69	1.24
Central	1.05	0.63	1.19	0.75
Pacific	1.24	2.18	0.96	2.09
U.S. Total	1.25	1.04	1.49	1.25
Redhead				
Atlantic	2.24	0.43	---	0.44
Mississippi	3.02	0.72	3.17	0.60
Central	1.75	0.42	2.29	0.59
Pacific	0.80	0.73	0.71	1.10
U.S. Total	1.93	0.53	2.29	0.63
Canvasback				
Atlantic	0.37	0.39	0.18	0.45
Mississippi	1.45	0.58	1.25	0.79
Central	1.30	0.55	1.08	0.52
Pacific	0.86	0.75	1.10	0.87
U.S. Total	1.17	0.57	1.06	0.67
Greater scaup				
Atlantic	0.99	0.75	1.08	1.01
Mississippi	1.74	1.54	---	2.25
Central	---	---	---	---
Pacific	0.46	1.27	0.57	1.77
U.S. Total	0.84	1.23	1.23	1.64

Table 10. Weighted age ratios of ducks harvested during the 1999 and 2000 hunting seasons, by species and Flyway.

	Immatures per Adult [a,b]		Immature Females per Adult Female [a,b]	
State and Flyway	1999	2000	1999	2000
Lesser scaup				
Atlantic	0.26	0.33	0.39	0.62
Mississippi	0.62	0.36	0.93	0.43
Central	0.88	0.41	1.07	0.43
Pacific	1.02	1.20	1.56	2.01
U.S. Total	0.57	0.42	0.85	0.53
Ring-necked duck				
Atlantic	1.12	0.71	1.38	1.15
Mississippi	1.63	1.27	2.59	2.04
Central	0.65	0.75	1.79	1.20
Pacific	1.90	1.52	3.49	2.27
U.S. Total	1.27	1.02	2.04	1.63
Common goldeneye				
Atlantic	0.51	0.58	0.87	0.93
Mississippi	1.27	0.27	1.48	0.40
Central	1.16	0.46	---	0.75
Pacific	0.59	0.56	0.51	0.73
U.S. Total	0.87	0.47	0.99	0.69
Bufflehead				
Atlantic	0.64	0.47	2.36	2.06
Mississippi	0.85	0.67	1.44	1.53
Central	0.50	0.44	1.27	1.00
Pacific	1.43	0.67	3.08	1.19
U.S. Total	0.82	0.57	1.80	1.54
Ruddy duck				
Atlantic	1.32	0.61		
Mississippi	1.98	1.84		
Central	3.76	1.54		
Pacific	0.51	0.87		
U.S. Total	1.37	1.02		
Hooded merganser				
Atlantic	0.65	0.68		
Mississippi	1.02	0.59		
Central	0.73	0.39		
Pacific	2.00	1.25		
U.S. Total	0.88	0.63		

Table 10. Weighted age ratios of ducks harvested during the 1999 and 2000 hunting seasons, by species and Flyway.

	Immatures per Adult [a,b]		Immature Females per Adult Female [a,b]	
State and Flyway	1999	2000	1999	2000
Common merganser				
Atlantic	1.41	0.87	1.19	1.10
Mississippi	0.65	1.17	---	---
Central	---	0.53	---	---
Pacific	1.27	0.77	---	1.29
U.S. Total	1.03	0.96	0.96	1.52
Red-breasted merganser				
Atlantic	1.38	0.40	1.40	0.60
U.S. Total	1.19	0.28	1.98	0.35
Long-tailed duck				
Atlantic	0.12	0.32		
U.S. Total	0.15	0.39		
Common eider				
Atlantic	0.57	0.13		
U.S. Total	0.57	0.13		
Black scoter				
Atlantic	1.03	0.14	---	---
U.S. Total	1.26	0.42	1.05	0.41
White-winged scoter				
Atlantic	---	0.12	---	---
U.S. Total	0.68	0.11	0.49	0.71
Surf scoter				
Atlantic	2.16	0.15	4.59	0.20
U.S. Total	2.12	0.14	4.64	0.23

[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 1999 and 2000 hunting seasons as determined from the Waterfowl Parts Collection Survey.

	Males per Female [a]		Adult Males per Adult Female [a]	
State and Flyway	1999	2000	1999	2000
Connecticut	2.1	1.7	3.1	2.6
Delaware	1.0	1.5	1.6	1.7
Florida	---	---	---	---
Georgia	1.6	1.8	2.0	2.1
Maine	1.3	1.9	1.3	2.3
Maryland	2.8	1.7	4.1	1.9
Massachusetts	1.7	1.8	2.4	2.4
New Hampshire	1.9	1.4	2.4	2.4
New Jersey	2.2	1.5	2.7	2.1
New York	1.8	1.8	2.2	2.8
North Carolina	1.7	1.7	2.5	2.1
Pennsylvania	2.3	2.4	3.8	3.5
Rhode Island	2.3	1.2	2.3	1.8
South Carolina	2.0	1.9	2.3	2.4
Vermont	1.6	1.4	1.4	2.2
Virginia	2.2	1.9	3.0	2.5
West Virginia	2.3	2.2	2.3	3.7
Atlantic Flyway Total [b]	1.98	1.84	2.70	2.43
Alabama	2.0	2.6	1.7	4.7
Arkansas	2.3	2.7	3.1	3.7
Illinois	2.3	2.5	3.1	3.9
Indiana	1.7	2.3	2.3	3.1
Iowa	2.0	1.9	2.7	3.1
Kentucky	2.1	2.5	3.0	2.9
Louisiana	1.6	2.3	2.2	3.1
Michigan	1.8	1.9	2.8	2.2
Minnesota	1.4	1.5	1.2	1.6
Mississippi	2.5	2.9	3.9	3.9
Missouri	2.8	2.8	4.0	4.0
Ohio	2.3	2.0	3.7	2.8
Tennessee	2.2	2.3	3.3	3.9
Wisconsin	1.5	1.9	1.7	2.3
Mississippi Flyway Total [b]	2.02	2.35	2.77	3.27

Table 11. Sex ratios of mallards in state harvests during the 1999 and 2000 hunting seasons as determined from the Waterfowl Parts Collection Survey.

	Males per Female [a]		Adult Males per Adult Female [a]	
State and Flyway	1999	2000	1999	2000
Colorado	2.9	3.1	4.0	4.6
Kansas	5.4	4.7	7.5	5.8
Montana	3.0	4.3	3.8	6.1
Nebraska	3.0	4.0	4.6	5.4
New Mexico	2.0	2.5	2.8	3.0
North Dakota	2.1	2.8	2.6	4.0
Oklahoma	2.6	4.0	3.3	4.8
South Dakota	2.7	3.5	3.6	5.1
Texas	2.4	2.5	3.1	3.3
Wyoming	3.7	4.1	7.7	4.3
Central Flyway Total [b]	2.65	3.21	3.57	4.27
Arizona	1.9	1.0	3.0	1.2
California	2.4	2.2	3.3	3.6
Colorado	2.3	3.3	3.2	4.7
Idaho	2.2	2.2	3.3	2.9
Montana	2.9	3.0	3.9	4.5
Nevada	1.8	1.9	2.2	2.5
New Mexico	2.0	2.1	---	2.4
Oregon	2.2	2.0	2.9	3.1
Utah	1.8	2.0	2.4	2.7
Washington	2.2	2.3	2.5	3.4
Wyoming	2.6	3.5	2.6	3.3
Pacific Flyway Total [b]	2.26	2.22	2.90	3.25
Alaska	1.2	1.3	1.6	1.0
U.S. Total [b]	2.15	2.39	2.91	3.33

[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 1999 and 2000 hunting seasons, by species and Flyway.

	Males per Female [a,b]		Adult Males per Adult Female [a,b]	
Species and Flyway	1999	2000	1999	2000
Mallard				
Atlantic	1.98	1.84	2.70	2.43
Mississippi	2.02	2.35	2.77	3.27
Central	2.65	3.21	3.57	4.27
Pacific	2.26	2.22	2.90	3.25
U.S. Total	2.15	2.39	2.91	3.33
Black duck				
Atlantic	0.94	0.99	1.35	1.30
Mississippi	0.79	0.85	0.81	0.91
U.S. Total	0.89	0.94	1.14	1.14
Mottled duck				
Atlantic	0.54	0.89	0.91	0.95
Mississippi	1.28	0.94	2.03	1.62
Central	2.25	1.05	1.89	1.13
U.S. Total	1.26	0.95	1.87	1.32
Gadwall				
Atlantic	1.27	1.37	2.01	1.83
Mississippi	1.61	2.04	2.51	2.83
Central	1.45	1.78	2.08	2.47
Pacific	1.79	1.78	3.46	2.69
U.S. Total	1.56	1.91	2.41	2.66
American wigeon				
Atlantic	1.56	2.05	2.40	2.80
Mississippi	1.67	1.76	3.18	2.68
Central	1.75	1.89	2.64	2.80
Pacific	1.73	1.59	2.94	3.02
U.S. Total	1.69	1.71	2.84	2.79
Green-winged teal				
Atlantic	1.23	1.18	1.41	1.66
Mississippi	1.68	1.82	2.44	2.86
Central	1.73	1.70	2.28	2.03
Pacific	1.79	1.64	2.37	2.37
U.S. Total	1.64	1.64	2.25	2.36
Blue-winged/Cinnamon teal				
Atlantic	1.20	1.32	2.02	1.49
Mississippi	1.34	1.21	1.72	1.65
Central	1.17	1.14	1.15	1.24
Pacific	1.39	1.48	1.82	2.30
U.S. Total	1.29	1.20	1.58	1.53

Table 12. Weighted sex ratios of ducks harvested during the 1999 and 2000 hunting seasons, by species and Flyway.

	Males per Female [a,b]		Adult Males per Adult Female [a,b]	
Species and Flyway	1999	2000	1999	2000
Northern shoveler				
Atlantic	1.52	1.46	2.14	2.20
Mississippi	1.56	1.89	2.18	3.04
Central	1.52	1.61	1.78	2.06
Pacific	1.55	2.04	2.51	2.75
U.S. Total	1.54	1.84	2.21	2.62
Northern pintail				
Atlantic	1.50	1.06	2.80	1.31
Mississippi	1.87	2.22	3.27	5.34
Central	2.02	2.29	3.03	2.73
Pacific	2.18	2.01	3.59	3.31
U.S. Total	1.99	2.00	3.26	3.15
Wood duck				
Atlantic	1.97	1.85	2.27	2.03
Mississippi	1.71	1.79	2.07	2.12
Central	1.88	2.00	2.08	2.22
Pacific	1.80	1.44	1.45	1.36
U.S. Total	1.79	1.80	2.10	2.09
Redhead				
Atlantic	0.91	1.46	---	1.36
Mississippi	1.17	1.90	1.27	1.68
Central	1.24	2.26	1.69	2.64
Pacific	1.52	1.38	1.38	1.87
U.S. Total	1.23	1.99	1.51	2.17
Canvasback				
Atlantic	1.31	2.17	0.99	2.33
Mississippi	1.24	2.10	1.06	2.50
Central	1.26	1.28	1.03	1.22
Pacific	1.11	1.69	1.37	1.87
U.S. Total	1.22	1.79	1.11	1.96
Greater scaup				
Atlantic	1.25	1.26	1.36	1.59
Mississippi	0.89	1.23	---	1.87
Central	---	---	---	---
Pacific	2.92	1.90	3.24	2.53
U.S. Total	1.61	1.45	2.17	1.90

Table 12. Weighted sex ratios of ducks harvested during the 1999 and 2000 hunting seasons, by species and Flyway.

	Males per Female [a,b]		Adult Males per Adult Female [a,b]	
Species and Flyway	1999	2000	1999	2000
Lesser scaup				
Atlantic	2.49	2.09	2.83	2.76
Mississippi	1.51	1.59	1.97	1.70
Central	1.38	1.70	1.62	1.73
Pacific	1.61	1.56	2.29	2.44
U.S. Total	1.72	1.65	2.20	1.83
Ring-necked duck				
Atlantic	1.72	1.78	2.03	2.49
Mississippi	2.26	1.90	3.41	2.87
Central	2.15	2.34	4.31	3.24
Pacific	1.89	1.88	3.50	2.72
U.S. Total	2.04	1.96	3.05	2.85
Common goldeneye				
Atlantic	1.27	1.10	1.80	1.57
Mississippi	1.06	1.59	1.25	1.85
Central	1.13	1.86	---	2.42
Pacific	1.71	4.91	1.59	5.56
U.S. Total	1.26	1.94	1.41	2.38
Bufflehead				
Atlantic	2.24	2.45	5.67	6.21
Mississippi	1.31	1.28	2.10	2.48
Central	1.14	2.33	2.29	3.76
Pacific	1.15	1.23	2.64	1.93
U.S. Total	1.48	1.70	2.88	3.39
Hooded merganser				
Atlantic			1.92	2.07
Mississippi			1.50	3.06
Central			---	---
Pacific			---	---
U.S. Total			1.77	2.62
Common merganser				
Atlantic	0.78	0.76	0.64	0.97
Mississippi	0.72	2.39	---	---
Central	---	0.60	---	---
Pacific	1.29	1.03	---	1.63
U.S. Total	0.84	0.90	0.79	1.44

Table 12. Weighted sex ratios of ducks harvested during the 1999 and 2000 hunting seasons, by species and Flyway.

	Males per Female [a,b]		Adult Males per Adult Female [a,b]	
Species and Flyway	1999	2000	1999	2000
Red-breasted merganser				
Atlantic	1.05	1.53	1.13	1.98
U.S. Total	1.37	0.74	2.28	0.87
Long-tailed duck				
Atlantic			---	---
U.S. Total			4.22	5.69
Common eider				
Atlantic			2.90	1.48
U.S. Total			2.90	1.48
Black scoter				
Atlantic	1.57	1.38	---	---
U.S. Total	1.88	1.31	1.60	1.51
White-winged scoter				
Atlantic	---	2.77	---	---
U.S. Total	0.67	3.61	0.49	5.67
Surf scoter				
Atlantic	0.56	1.45	1.76	1.64
U.S. Total	0.68	1.35	2.04	1.59

[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 1999 and 2000 hunting seasons, by species and Flyway.

	Immatures per Adult [a,b]	
Species and Flyway	1999	2000
Canada goose		
Atlantic	0.60	0.41
Mississippi	0.54	0.50
Central	0.55	0.53
Pacific	0.67	0.60
U.S. Total	0.59	0.49
Snow goose		
Atlantic	0.02	1.72
Mississippi	0.63	0.40
Central	0.46	0.29
Pacific	0.67	0.40
U.S. Total	0.47	0.43
Blue goose		
Mississippi	0.36	0.44
Central	0.44	0.53
U.S. Total	0.39	0.49
Ross' goose		
Central	2.64	1.04
Pacific	1.08	0.50
U.S. Total	2.23	0.98
Greater white-fronted goose		
Mississippi	0.86	0.44
Central	0.74	0.57
Pacific	1.57	0.80
U.S. Total	0.85	0.54
Brant		
Atlantic	0.06	1.17
Pacific	---	0.33

[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.

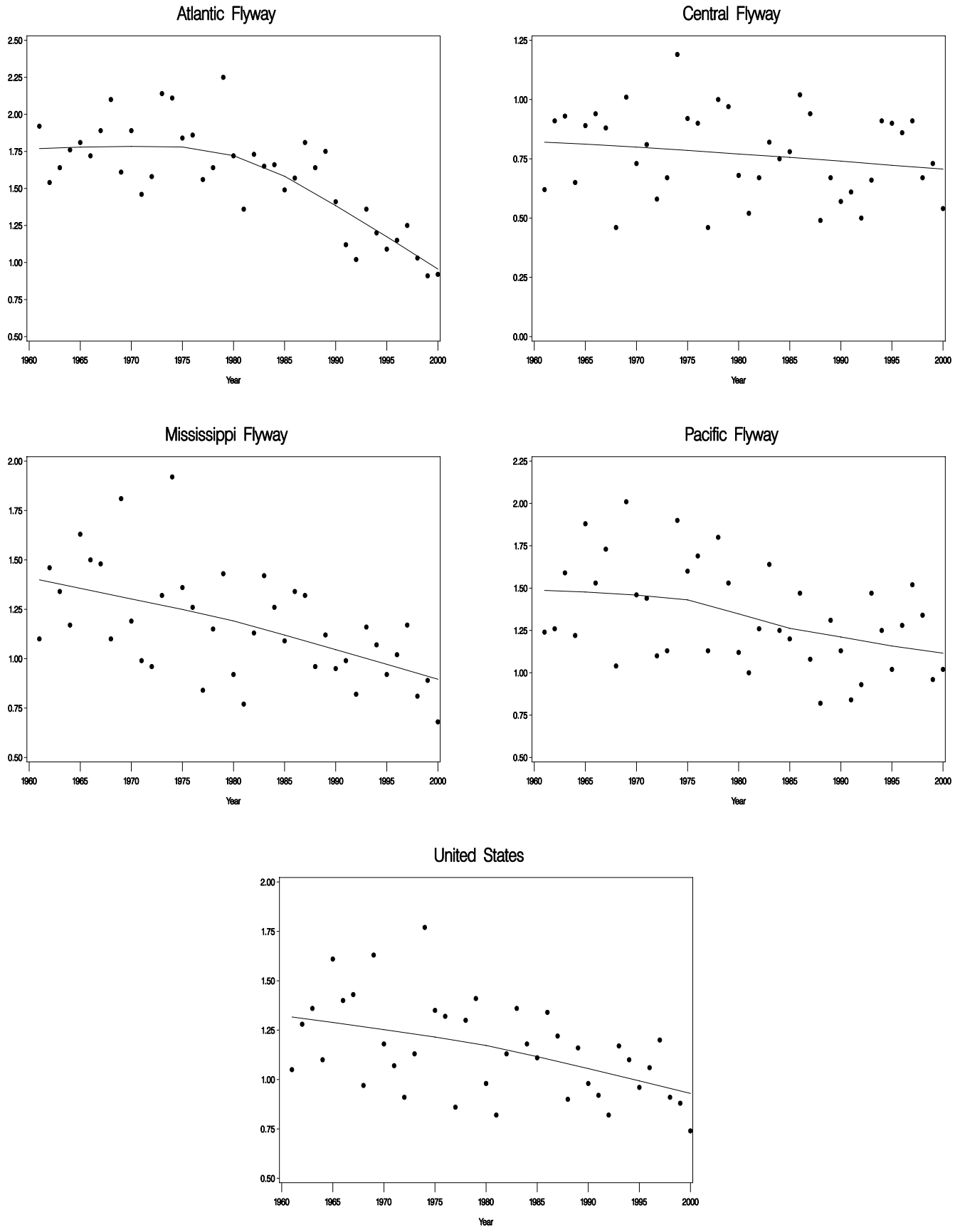

Figure 4. Age ratios of mallards harvested in the United States, 1961-2000.

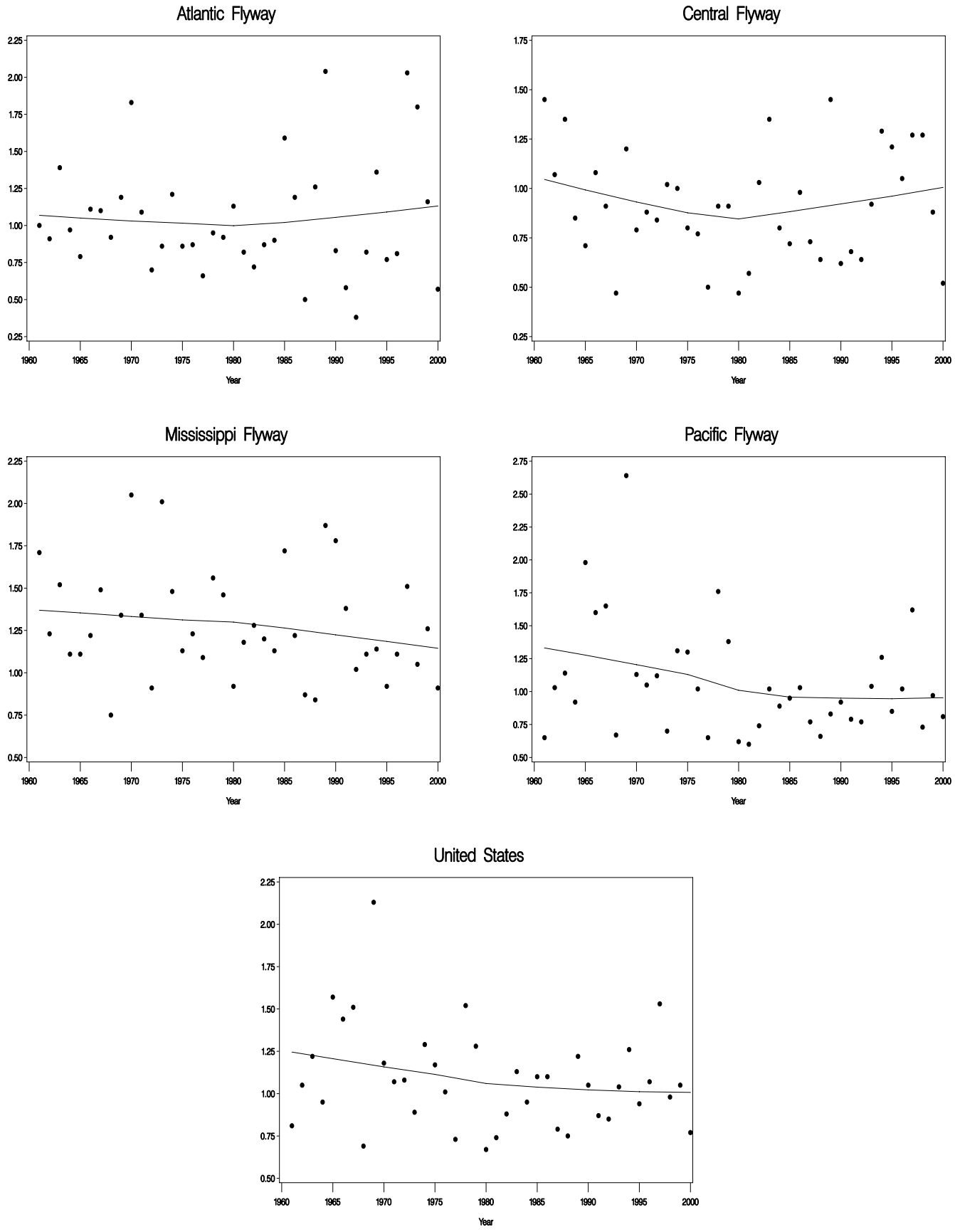

Figure 5. Age ratios of Northern pintails harvested in the United States, 1961-2000.

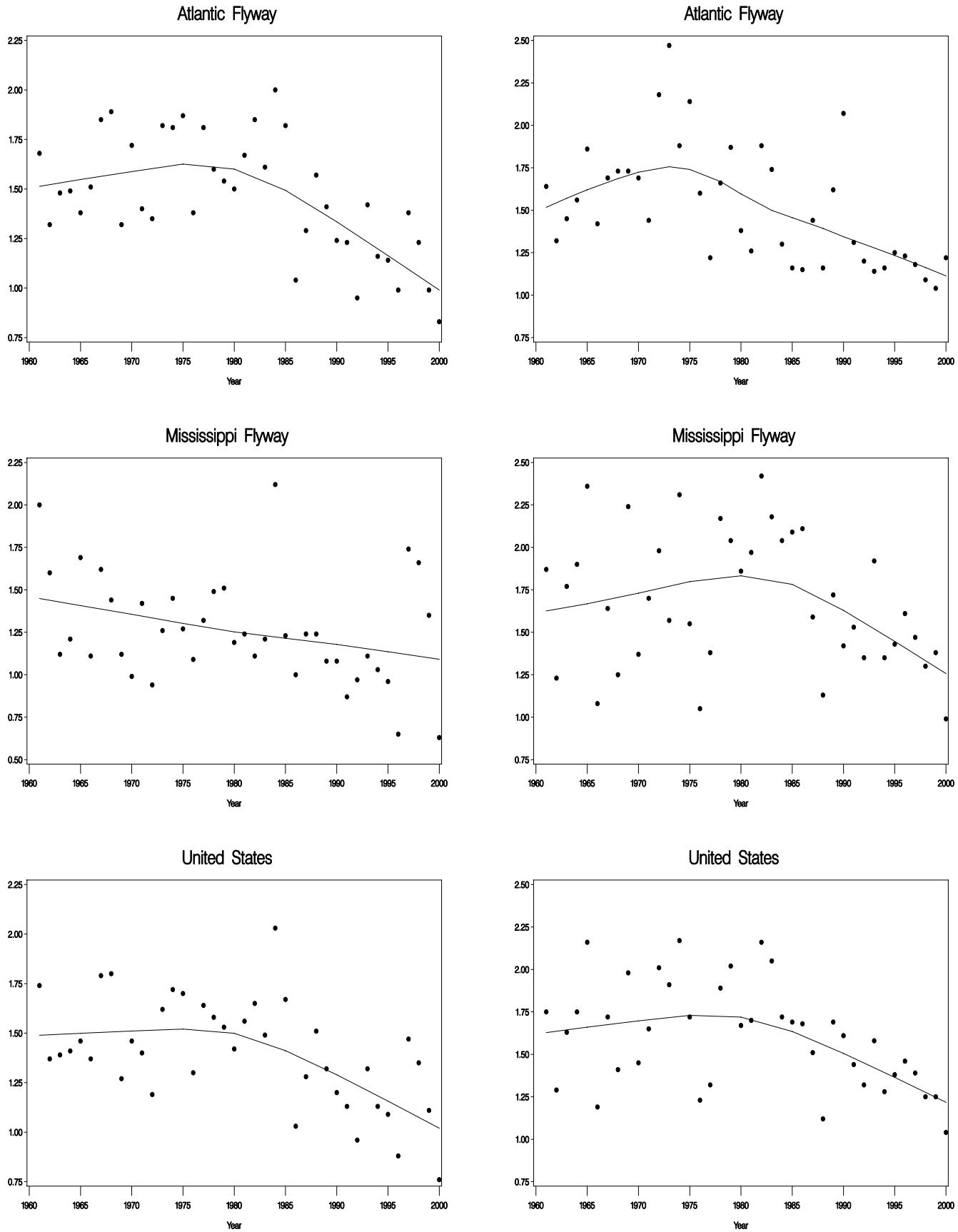

Figure 6. Age ratios of American black ducks (left column) and wood ducks (right column) harvested in the United States, 1961-2000.

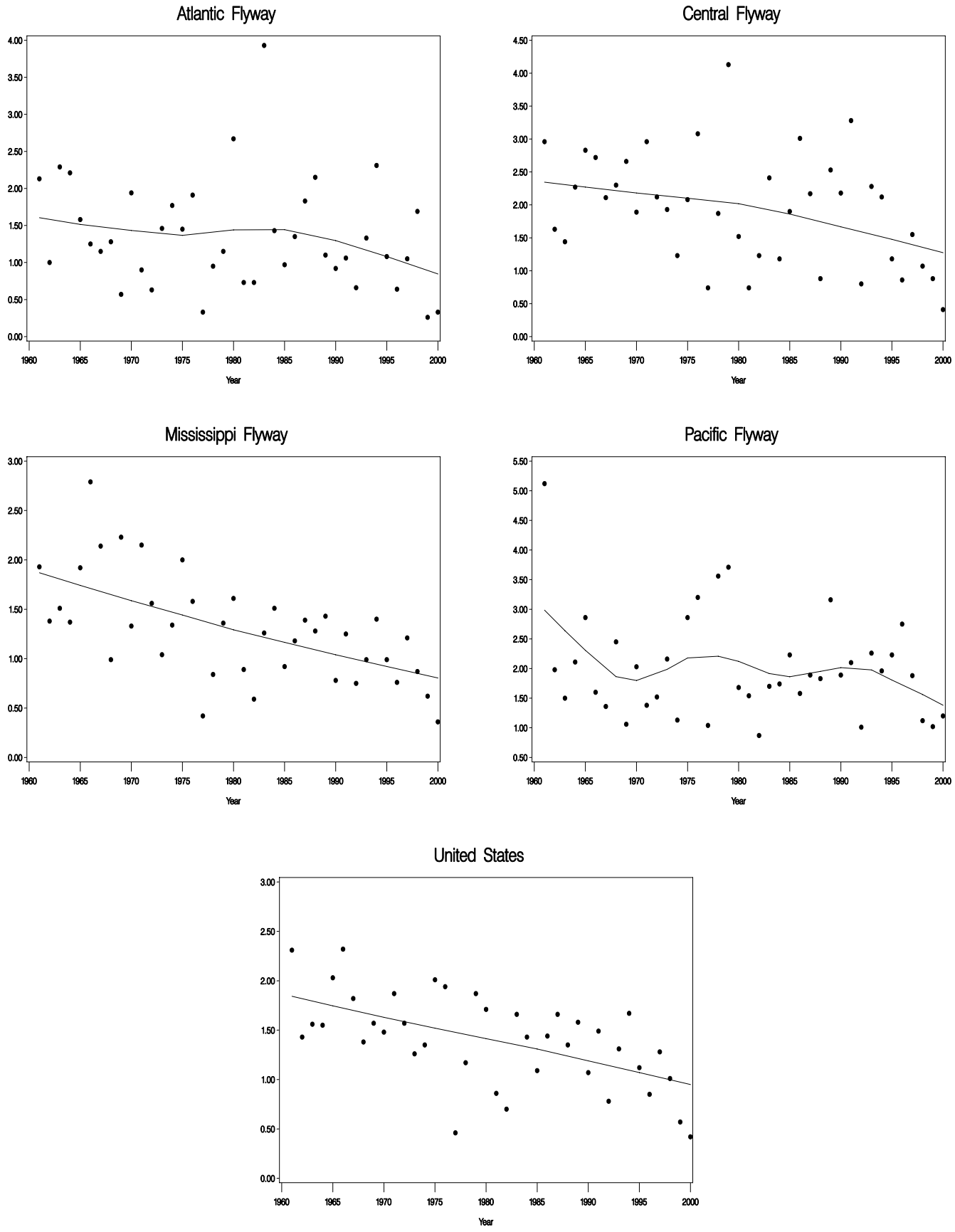

Figure 7. Age ratios of lesser scaup harvested in the United States, 1961-2000.

Table 14. Estimates of mourning dove harvest and hunter activity during the 1999 and 2000 hunting seasons.

State and	Mourning Dove Harvest		Active Hunters		Mourning Dove Days Afield		Seasonal Harvest Per Hunter	
Management Unit	1999	2000	1999	2000	1999	2000	1999	2000
Alabama	1,323,900 ± 16%	1,213,200 ± 18%	57,800 ± 8%	61,700 ± 11%	181,900 ± 12%	174,300 ± 17%	22.9 ± 18%	19.7 ± 21%
Delaware	87,900 ± 32%	64,100 ± 40%	3,700 ± 32%	2,500 ± 28%	13,300 ± 32%	8,500 ± 30%	23.8 ± 45%	25.6 ± 49%
Florida	517,100 ± 33%	407,800 ± 99%	18,400 ± 21%	18,100 ± 57%	77,600 ± 28%	61,800 ± 83%	28.0 ± 39%	22.6 ± 114%
Georgia	1,417,100 ± 17%	1,400,200 ± 15%	69,600 ± 10%	64,900 ± 11%	204,100 ± 13%	207,300 ± 13%	20.4 ± 20%	21.6 ± 19%
Illinois	545,500 ± 15%	716,500 ± 13%	31,700 ± 10%	34,500 ± 11%	104,900 ± 12%	132,500 ± 18%	17.2 ± 18%	20.8 ± 17%
Indiana	280,600 ± 27%	277,900 ± 25%	14,000 ± 19%	14,400 ± 19%	54,200 ± 31%	51,000 ± 26%	20.0 ± 33%	19.2 ± 31%
Kentucky	935,700 ± 47%	758,300 ± 30%	34,400 ± 16%	33,000 ± 22%	112,900 ± 34%	105,100 ± 27%	27.2 ± 50%	23.0 ± 37%
Louisiana	845,900 ± 25%	730,700 ± 31%	40,300 ± 18%	30,400 ± 17%	121,400 ± 21%	105,400 ± 26%	21.0 ± 31%	24.0 ± 35%
Maryland	219,600 ± 28%	190,100 ± 27%	11,000 ± 28%	13,900 ± 30%	41,200 ± 29%	38,600 ± 36%	19.9 ± 40%	13.7 ± 40%
Mississippi	600,100 ± 17%	617,800 ± 17%	28,200 ± 12%	26,300 ± 13%	75,700 ± 14%	74,100 ± 14%	21.3 ± 21%	23.5 ± 21%
North Carolina	1,110,000 ± 22%	1,106,600 ± 20%	65,200 ± 17%	65,300 ± 15%	178,800 ± 23%	193,800 ± 20%	17.0 ± 28%	16.9 ± 25%
Ohio	310,100 ± 22%	483,800 ± 29%	20,500 ± 16%	32,600 ± 18%	92,700 ± 18%	132,300 ± 22%	15.2 ± 27%	14.9 ± 34%
Pennsylvania	603,400 ± 17%	512,500 ± 17%	40,000 ± 10%	35,000 ± 11%	181,400 ± 14%	165,700 ± 17%	15.1 ± 20%	14.7 ± 20%
Rhode Island	5,500 ± 102%	1,500 ± 92%	300 ± 65%	100 ± 61%	1,000 ± 79%	500 ± 71%	20.0 ± 121%	10.8 ± 110%
South Carolina	860,900 ± 17%	932,500 ± 27%	37,300 ± 10%	34,500 ± 13%	133,100 ± 14%	137,700 ± 21%	23.1 ± 19%	27.0 ± 30%
Tennessee	923,000 ± 23%	901,200 ± 48%	64,700 ± 20%	43,700 ± 30%	198,900 ± 37%	109,600 ± 33%	14.3 ± 31%	20.6 ± 56%
Virginia	342,100 ± 16%	423,800 ± 20%	23,800 ± 11%	27,500 ± 12%	66,600 ± 16%	89,800 ± 17%	14.4 ± 19%	15.4 ± 23%
West Virginia	15,500 ± 83%	35,300 ± 100%	1,900 ± 124%	1,300 ± 38%	3,400 ± 73%	7,300 ± 68%	8.2 ± 149%	26.7 ± 106%
Eastern Unit Total	10,943,900 ± 7%	10,773,900 ± 8%	562,800[a]	539,700[a]	1,743,100 ± 6%	1,795,200 ± 6%		
Arkansas	968,700 ± 18%	928,500 ± 17%	35,700 ± 11%	39,800 ± 12%	131,400 ± 17%	125,600 ± 15%	27.2 ± 21%	23.3 ± 21%
Colorado	220,100 ± 20%	242,300 ± 21%	14,300 ± 15%	16,300 ± 17%	42,400 ± 19%	44,600 ± 20%	15.4 ± 25%	14.8 ± 27%
Kansas	751,600 ± 13%	847,900 ± 15%	36,400 ± 8%	36,400 ± 9%	152,200 ± 12%	149,000 ± 12%	20.6 ± 15%	23.3 ± 17%
Missouri	603,000 ± 18%	605,800 ± 23%	35,800 ± 11%	32,800 ± 13%	108,900 ± 14%	115,200 ± 19%	16.9 ± 21%	18.5 ± 26%
Montana	22,000 ± 77%	11,600 ± 92%	1,400 ± 72%	1,300 ± 82%	4,900 ± 70%	2,900 ± 66%	15.4 ± 105%	8.8 ± 123%
Nebraska	321,400 ± 16%	330,900 ± 12%	19,300 ± 10%	19,200 ± 10%	75,700 ± 13%	67,800 ± 12%	16.7 ± 19%	17.2 ± 15%
New Mexico	187,900 ± 51%	269,000 ± 31%	8,000 ± 33%	9,900 ± 18%	44,300 ± 47%	43,900 ± 25%	23.6 ± 61%	27.1 ± 36%
North Dakota	120,000 ± 26%	68,300 ± 34%	6,400 ± 25%	5,800 ± 33%	23,200 ± 23%	18,200 ± 28%	18.9 ± 36%	11.8 ± 48%
Oklahoma	595,800 ± 14%	597,300 ± 39%	34,200 ± 10%	19,600 ± 26%	118,400 ± 16%	85,800 ± 29%	17.4 ± 17%	30.5 ± 47%
South Dakota	177,600 ± 22%	182,100 ± 35%	10,800 ± 21%	10,100 ± 25%	39,700 ± 22%	32,500 ± 24%	16.5 ± 30%	18.1 ± 43%
Texas	7,408,700 ± 7%	9,130,400 ± 8%	298,300 ± 5%	347,500 ± 5%	1,302,100 ± 7%	1,407,000 ± 7%	24.8 ± 9%	26.3 ± 9%
Wyoming	24,300 ± 25%	44,100 ± 41%	3,100 ± 47%	4,100 ± 39%	6,500 ± 27%	7,900 ± 37%	7.9 ± 53%	10.7 ± 57%
Central Unit Total	11,401,200 ± 5%	13,258,300 ± 6%	503,700[a]	542,800[a]	2,049,800 ± 5%	2,100,500 ± 5%		
Arizona	900,200 ± 12%	800,300 ± 14%	44,800 ± 7%	39,300 ± 8%	143,400 ± 11%	127,800 ± 11%	20.1 ± 14%	20.4 ± 16%
California	795,900 ± 12%	1,020,700 ± 15%	56,200 ± 10%	56,900 ± 11%	166,300 ± 12%	182,400 ± 13%	14.2 ± 15%	18.0 ± 19%
Idaho	86,100 ± 30%	99,300 ± 36%	8,500 ± 29%	8,200 ± 28%	27,800 ± 31%	28,500 ± 41%	10.1 ± 42%	12.1 ± 46%
Nevada	64,000 ± 67%	71,200 ± 46%	4,100 ± 26%	4,400 ± 28%	13,800 ± 50%	13,200 ± 34%	15.4 ± 72%	16.3 ± 54%
Oregon	75,800 ± 34%	66,200 ± 36%	6,100 ± 27%	6,800 ± 29%	21,700 ± 31%	20,200 ± 41%	12.4 ± 43%	9.7 ± 46%
Utah	76,700 ± 16%	117,900 ± 19%	9,300 ± 16%	10,900 ± 16%	23,900 ± 15%	29,500 ± 18%	8.2 ± 23%	10.8 ± 25%
Washington	93,600 ± 28%	87,400 ± 25%	11,000 ± 23%	8,800 ± 30%	28,300 ± 29%	22,100 ± 30%	8.5 ± 36%	9.9 ± 39%
Western Unit Total	2,092,300 ± 7%	2,263,100 ± 9%	140,000[a]	135,300[a]	425,300 ± 7%	423,800 ± 8%		
U.S. Total	24,437,300 ± 4%	26,295,300 ± 4%	1,206,500[a]	1,217,800[a]	4,318,100 ± 4%	4,319,500 ± 4%		

[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.

Table 15. Estimates of white-winged dove harvest and hunter activity during the 1999 and 2000 hunting seasons.

State and	White-winged Dove Harvest		Active Hunters		White-winged Dove Days Afield		Seasonal Harvest Per Hunter	
Management Unit	1999	2000	1999	2000	1999	2000	1999	2000
Florida	1,200 ± 98%	15,000 ± 139%	1,000 ± 97%	1,100 ± 141%	4,200 ± 106%	9,500 ± 150%	1.3 ± 138%	13.2 ± 198%
Eastern Unit Total	1,200 ± 98%	15,000 ± 139%	1,000 ± 97%	1,100 ± 141%	4,200 ± 106%	9,500 ± 150%	1.3 ± 138%	13.2 ± 198%
New Mexico	10,200 ± 91%	18,500 ± 37%	1,600 ± 90%	2,300 ± 39%	9,600 ± 101%	10,000 ± 48%	6.3 ± 128%	8.2 ± 54%
Texas	772,800 ± 20%	1,204,000 ± 17%	78,400 ± 11%	102,600 ± 11%	320,900 ± 15%	407,500 ± 14%	9.9 ± 23%	11.7 ± 21%
Central Unit Total	782,900 ± 20%	1,222,600 ± 17%	80,000[a]	104,900[a]	330,500 ± 15%	417,600 ± 14%		
Arizona	122,100 ± 20%	84,500 ± 20%	24,900 ± 13%	19,600 ± 15%	71,200 ± 16%	56,400 ± 16%	4.9 ± 24%	4.3 ± 25%
California	32,100 ± 38%	33,900 ± 54%	6,800 ± 32%	7,600 ± 35%	17,200 ± 29%	19,900 ± 42%	4.7 ± 49%	4.5 ± 64%
Nevada	100 ± 143%	0	300 ± 113%	<50 ± 191%	1,400 ± 126%	<50 ± 191%	0.3 ± 182%	0
Western Unit Total	154,300 ± 18%	118,400 ± 21%	32,000[a]	27,200[a]	89,900 ± 14%	76,300 ± 16%		
U.S. Total	938,500 ± 17%	1,355,900 ± 16%	113,000[a]	133,200[a]	424,600 ± 12%	503,400 ± 12%		

[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.

Table 16. Estimates of band-tailed pigeon harvest and hunter activity during the 1999 and 2000 hunting seasons.

State and	Band-tailed Pigeon Harvest		Active Hunters		Band-tailed Pigeon Days Afield		Seasonal Harvest Per Hunter	
Management Unit	1999	2000	1999	2000	1999	2000	1999	2000
Arizona	500 ± 154%	2,300 ± 110%	700 ± 105%	600 ± 79%	2,000 ± 97%	1,600 ± 83%	0.7 ± 186%	4.0 ± 135%
Colorado	700 ± 129%	1,700 ± 147%	100 ± 113%	400 ± 95%	300 ± 122%	2,800 ± 107%	5.4 ± 171%	3.9 ± 175%
New Mexico	0	400 ± 122%	100 ± 121%	300 ± 67%	300 ± 158%	900 ± 75%	0	1.2 ± 139%
Utah	100 ± 69%	300 ± 192%	<50 ± 46%	<50 ± 192%	100 ± 50%	300 ± 192%	1.3 ± 83%	10.0 ± 272%
Four Corners Total	1,300 ± 94%	4,600 ± 78%	900[a]	1,300[a]	2,700 ± 76%	5,600 ± 60%		
California	19,300 ± 101%	12,200 ± 65%	3,900 ± 48%	5,600 ± 37%	9,100 ± 54%	10,000 ± 41%	4.9 ± 112%	2.2 ± 74%
Oregon	3,800 ± 42%	4,100 ± 92%	1,500 ± 47%	1,700 ± 46%	3,500 ± 33%	3,800 ± 61%	2.5 ± 63%	2.4 ± 103%
Pacific Coast Total	23,100 ± 85%	16,300 ± 54%	5,400[a]	7,300[a]	12,600 ± 40%	13,800 ± 34%		
U.S. Total	24,400 ± 81%	20,900 ± 45%	6,300[a]	8,600[a]	15,300 ± 36%	19,400 ± 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 they hunt in more than one state.

Table 17. Estimates of woodcock harvest and hunter activity during the 1999 and 2000 hunting seasons.

State and	Woodcock Harvest		Active Hunters		Woodcock Days Afield		Seasonal Harvest Per Hunter	
Management Unit	1999	2000	1999	2000	1999	2000	1999	2000
Connecticut	300 ± 128%	1,900 ± 50%	2,100 ± 98%	1,900 ± 48%	14,500 ± 109%	9,000 ± 57%	0.1 ± 161%	1.0 ± 69%
Delaware	0	300 ± 116%	<50 ± 193%	300 ± 162%	300 ± 193%	700 ± 87%	0	1.2 ± 200%
Florida	0	0	0	0	0	0	0	0
Georgia	18,500 ± 148%	3,000 ± 196%	2,300 ± 138%	1,500 ± 196%	11,600 ± 138%	1,500 ± 196%	8.0 ± 202%	2.0 ± 277%
Maine	38,300 ± 24%	17,100 ± 51%	10,100 ± 13%	8,000 ± 44%	57,300 ± 18%	41,400 ± 50%	3.8 ± 27%	2.1 ± 67%
Maryland	2,600 ± 118%	600 ± 64%	3,400 ± 123%	2,300 ± 170%	5,800 ± 115%	5,100 ± 154%	0.8 ± 170%	0.3 ± 182%
Massachussetts	3,000 ± 80%	6,000 ± 48%	1,500 ± 93%	1,800 ± 43%	6,900 ± 69%	12,800 ± 74%	2.0 ± 123%	3.4 ± 64%
New Hampshire	7,500 ± 20%	7,300 ± 38%	1,600 ± 9%	3,000 ± 32%	10,700 ± 15%	16,000 ± 42%	4.6 ± 22%	2.4 ± 49%
New Jersey	3,600 ± 90%	3,500 ± 58%	1,100 ± 129%	1,800 ± 54%	3,900 ± 112%	7,500 ± 68%	3.4 ± 157%	2.0 ± 79%
New York	19,000 ± 55%	26,000 ± 73%	4,600 ± 51%	8,000 ± 54%	19,100 ± 41%	35,600 ± 61%	4.1 ± 75%	3.2 ± 91%
North Carolina	10,200 ± 101%	5,700 ± 82%	8,000 ± 94%	3,800 ± 122%	14,000 ± 93%	8,400 ± 75%	1.3 ± 137%	1.5 ± 147%
Pennsylvania	19,200 ± 49%	12,800 ± 54%	14,900 ± 43%	11,000 ± 50%	57,000 ± 51%	40,900 ± 62%	1.3 ± 65%	1.2 ± 74%
Rhode Island	300 ± 48%	200 ± 83%	100 ± 35%	200 ± 132%	500 ± 45%	600 ± 111%	4.6 ± 59%	1.6 ± 156%
South Carolina	1,400 ± 76%	3,000 ± 139%	3,100 ± 102%	2,400 ± 123%	13,800 ± 126%	3,400 ± 88%	0.5 ± 127%	1.3 ± 185%
Vermont	3,500 ± 55%	6,300 ± 58%	1,500 ± 109%	2,000 ± 59%	5,000 ± 67%	14,500 ± 85%	2.4 ± 122%	3.2 ± 83%
Virginia	1,800 ± 49%	1,600 ± 46%	300 ± 28%	300 ± 24%	1,500 ± 41%	1,500 ± 32%	5.3 ± 57%	5.1 ± 52%
West Virginia	0	2,500 ± 154%	0	400 ± 105%	0	1,600 ± 120%	0	5.9 ± 187%
Eastern Unit Total	129,400 ± 26%	97,900 ± 25%	54,600[a]	48,700[a]	222,100 ± 21%	200,500 ± 22%		
Alabama	200 ± 45%	100 ± 118%	<50 ± 24%	1,900 ± 194%	300 ± 40%	2,000 ± 185%	6.8 ± 51%	0.1 ± 227%
Arkansas	2,300 ± 90%	700 ± 65%	200 ± 58%	1,300 ± 164%	1,600 ± 69%	4,500 ± 139%	11.6 ± 107%	0.5 ± 177%
Illinois	3,900 ± 175%	3,000 ± 116%	1,900 ± 125%	3,700 ± 89%	5,400 ± 116%	14,300 ± 91%	2.0 ± 215%	0.8 ± 146%
Indiana	6,600 ± 123%	4,100 ± 95%	4,200 ± 77%	1,300 ± 146%	24,300 ± 129%	12,000 ± 160%	1.6 ± 145%	3.1 ± 174%
Iowa	400 ± 94%	600 ± 55%	300 ± 128%	200 ± 38%	500 ± 85%	500 ± 61%	1.1 ± 158%	3.3 ± 67%
Kansas	0	<50 ± 186%	1,300 ± 138%	<50 ± 100%	4,600 ± 139%	200 ± 134%	0	1.3 ± 211%
Kentucky	100 ± 195%	0	100 ± 195%	0	1,500 ± 195%	0	1.0 ± 276%	0
Louisiana	59,700 ± 92%	44,400 ± 57%	6,300 ± 76%	10,300 ± 51%	34,300 ± 80%	48,200 ± 64%	9.4 ± 120%	4.3 ± 76%
Michigan	105,200 ± 32%	127,400 ± 49%	32,600 ± 23%	27,800 ± 24%	172,600 ± 35%	129,700 ± 28%	3.2 ± 39%	4.6 ± 55%
Minnesota	71,500 ± 67%	51,600 ± 35%	19,400 ± 38%	20,000 ± 28%	101,800 ± 50%	84,000 ± 30%	3.7 ± 77%	2.6 ± 45%
Mississippi	700 ± 77%	100 ± 131%	100 ± 53%	<50 ± 105%	500 ± 63%	100 ± 112%	7.3 ± 93%	2.0 ± 168%
Missouri	800 ± 65%	800 ± 74%	500 ± 32%	3,100 ± 105%	1,600 ± 41%	9,400 ± 118%	1.7 ± 73%	0.3 ± 128%
Nebraska	400 ± 106%	1,300 ± 115%	1,000 ± 129%	1,100 ± 106%	2,300 ± 126%	2,100 ± 84%	0.4 ± 167%	1.2 ± 156%
Ohio	3,600 ± 106%	5,800 ± 108%	3,000 ± 84%	10,500 ± 69%	8,600 ± 89%	23,200 ± 56%	1.2 ± 135%	0.6 ± 129%
Oklahoma	1,400 ± 90%	300 ± 193%	1,300 ± 123%	100 ± 131%	1,800 ± 92%	600 ± 168%	1.1 ± 152%	3.5 ± 234%
Tennessee	2,500 ± 142%	1,200 ± 175%	4,800 ± 126%	3,100 ± 185%	10,500 ± 129%	7,500 ± 156%	0.5 ± 190%	0.4 ± 255%
Texas	9,500 ± 196%	0	14,200 ± 112%	0	28,400 ± 122%	0	0.7 ± 226%	0
Wisconsin	46,700 ± 23%	51,600 ± 46%	24,800 ± 21%	21,400 ± 32%	103,600 ± 27%	109,600 ± 34%	1.9 ± 31%	2.4 ± 56%
Central Unit Total	315,400 ± 27%	293,000 ± 25%	116,000[a]	105,800[a]	504,200 ± 20%	448,000 ± 16%		
U.S. Total	444,800 ± 20%	390,900 ± 20%	170,600[a]	154,500[a]	726,300 ± 15%	648,500 ± 13%		

[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.

Table 18. Estimates of snipe harvest and hunter activity during the 1999 and 2000 hunting seasons.

	Snipe Harvest		Active Hunters		Snipe Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	1999	2000	1999	2000	1999	2000	1999	2000
Connecticut	0	200 ± 195%	0	100 ± 195%	0 ± 0%	100 ± 195%	0	2.0 ± 276%
Delaware	200 ± 184%	100 ± 185%	<50 ± 184%	<50 ± 185%	<50 ± 184%	<50 ± 185%	20.0 ± 260%	6.0 ± 262%
Florida	26,400 ± 120%	1,100 ± 110%	2,700 ± 78%	300 ± 94%	10,300 ± 102%	1,000 ± 111%	9.8 ± 143%	3.8 ± 145%
Georgia	3,400 ± 175%	400 ± 153%	100 ± 107%	100 ± 111%	1,000 ± 147%	200 ± 128%	23.0 ± 205%	3.0 ± 189%
Maine	500 ± 103%	0	200 ± 47%	200 ± 137%	900 ± 68%	500 ± 137%	2.0 ± 113%	0
Maryland	900 ± 196%	200 ± 191%	1,000 ± 188%	<50 ± 191%	1,100 ± 174%	0 ± 191%	1.0 ± 271%	8.0 ± 270%
Massachusetts	300 ± 143%	100 ± 101%	100 ± 163%	<50 ± 64%	600 ± 179%	100 ± 78%	2.3 ± 217%	3.3 ± 120%
New Hampshire	100 ± 118%	0	<50 ± 107%	100 ± 176%	300 ± 113%	100 ± 176%	2.7 ± 159%	0
New Jersey	600 ± 164%	100 ± 113%	300 ± 188%	300 ± 168%	300 ± 156%	900 ± 168%	2.3 ± 249%	0.3 ± 202%
New York	400 ± 146%	200 ± 152%	100 ± 75%	200 ± 91%	500 ± 84%	700 ± 95%	2.7 ± 164%	1.0 ± 177%
North Carolina	1,200 ± 139%	100 ± 195%	300 ± 109%	200 ± 136%	900 ± 111%	300 ± 144%	3.3 ± 176%	0.5 ± 238%
Pennsylvania	0	2,300 ± 183%	<50 ± 133%	1,800 ± 93%	300 ± 153%	5,800 ± 108%	0	1.3 ± 206%
Rhode Island	100 ± 126%	<50 ± 170%	<50 ± 121%	<50 ± 170%	100 ± 126%	<50 ± 170%	7.0 ± 175%	5.0 ± 240%
South Carolina	500 ± 147%	100 ± 144%	100 ± 95%	100 ± 136%	200 ± 106%	100 ± 136%	4.8 ± 175%	1.5 ± 198%
Vermont	100 ± 190%	200 ± 195%	300 ± 184%	100 ± 195%	1,100 ± 184%	100 ± 195%	0.3 ± 265%	3.0 ± 276%
Virginia	600 ± 92%	200 ± 151%	100 ± 82%	100 ± 91%	300 ± 83%	400 ± 101%	5.4 ± 123%	2.0 ± 176%
West Virginia	0	200 ± 184%	0	<50 ± 184%	0	100 ± 184%	0	21.0 ± 260%
Atlantic Flyway Total	35,100 ± 92%	5,400 ± 83%	5,500[a]	3,700[a]	18,000 ± 62%	10,400 ± 63%		
Alabama	5,800 ± 89%	7,600 ± 138%	1,200 ± 99%	500 ± 133%	7,000 ± 119%	1,700 ± 101%	4.9 ± 133%	16.0 ± 191%
Arkansas	800 ± 89%	300 ± 172%	200 ± 77%	100 ± 96%	900 ± 138%	600 ± 109%	5.0 ± 118%	2.3 ± 197%
Illinois	2,100 ± 175%	200 ± 169%	1,000 ± 177%	100 ± 133%	2,200 ± 168%	100 ± 136%	2.0 ± 249%	4.0 ± 215%
Indiana	1,400 ± 134%	300 ± 157%	1,100 ± 166%	100 ± 133%	2,500 ± 149%	300 ± 162%	1.3 ± 213%	5.0 ± 206%
Iowa	700 ± 100%	1,300 ± 151%	200 ± 64%	100 ± 92%	600 ± 104%	900 ± 105%	4.0 ± 118%	9.0 ± 177%
Kentucky	0	0	0	0	0	0	0	0
Louisiana	138,900 ± 100%	32,200 ± 113%	6,700 ± 80%	3,600 ± 102%	39,300 ± 96%	18,600 ± 110%	20.6 ± 128%	8.9 ± 152%
Michigan	5,600 ± 185%	1,200 ± 175%	1,500 ± 172%	1,200 ± 175%	8,700 ± 180%	4,800 ± 175%	3.7 ± 253%	1.0 ± 248%
Minnesota	100 ± 76%	300 ± 196%	100 ± 52%	300 ± 196%	300 ± 75%	3,500 ± 196%	1.2 ± 92%	1.0 ± 277%
Mississippi	300 ± 195%	2,000 ± 186%	800 ± 173%	2,000 ± 186%	800 ± 173%	2,000 ± 186%	0.4 ± 261%	1.0 ± 263%
Missouri	200 ± 149%	0	100 ± 131%	0	200 ± 157%	0	2.0 ± 199%	0
Ohio	2,000 ± 94%	1,600 ± 195%	900 ± 153%	3,100 ± 133%	2,600 ± 108%	5,800 ± 121%	2.2 ± 179%	0.5 ± 236%
Tennessee	200 ± 195%	2,500 ± 194%	200 ± 136%	100 ± 137%	300 ± 144%	800 ± 137%	1.0 ± 238%	24.0 ± 237%
Wisconsin	5,200 ± 93%	300 ± 144%	2,100 ± 110%	2,400 ± 124%	3,600 ± 83%	7,400 ± 126%	2.5 ± 144%	0.1 ± 190%
Mississippi Flyway Total	164,400 ± 86%	49,800 ± 77%	16,100[a]	13,500[a]	69,100 ± 61%	46,500 ± 57%		

Table 18. Estimates of snipe harvest and hunter activity during the 1999 and 2000 hunting seasons.

	Snipe Harvest		Active Hunters		Snipe Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	1999	2000	1999	2000	1999	2000	1999	2000
Colorado	9,400 ± 105%	600 ± 114%	1,100 ± 154%	200 ± 65%	5,600 ± 149%	500 ± 85%	8.7 ± 186%	2.7 ± 131%
Kansas	2,300 ± 123%	300 ± 123%	500 ± 156%	500 ± 181%	1,000 ± 90%	500 ± 165%	4.3 ± 199%	0.6 ± 218%
Nebraska	600 ± 72%	1,600 ± 138%	100 ± 52%	1,400 ± 135%	300 ± 62%	1,600 ± 125%	5.8 ± 89%	1.1 ± 193%
New Mexico	0	100 ± 185%	<50 ± 189%	<50 ± 127%	<50 ± 189%	<50 ± 127%	0	6.0 ± 225%
North Dakota	0	0	0	0	0	0	0	0
Oklahoma	2,500 ± 181%	100 ± 195%	600 ± 182%	100 ± 195%	1,800 ± 182%	100 ± 195%	4.0 ± 257%	2.0 ± 275%
South Dakota	<50 ± 193%	100 ± 194%	100 ± 110%	1,100 ± 188%	200 ± 114%	1,200 ± 181%	0.3 ± 222%	0.1 ± 270%
Texas	32,500 ± 141%	8,900 ± 148%	6,100 ± 130%	3,300 ± 181%	11,200 ± 114%	3,900 ± 156%	5.3 ± 191%	2.7 ± 234%
Wyoming	0	900 ± 124%	0	300 ± 101%	0	1,000 ± 111%	0	2.8 ± 160%
Central Flyway Total	47,300 ± 99%	12,600 ± 106%	8,500[a]	7,000[a]	20,100 ± 78%	8,800 ± 79%		
Arizona	200 ± 91%	1,600 ± 182%	700 ± 176%	500 ± 191%	800 ± 150%	500 ± 186%	0.2 ± 198%	3.2 ± 264%
California	15,400 ± 158%	14,800 ± 129%	4,300 ± 96%	3,200 ± 103%	7,900 ± 93%	29,400 ± 161%	3.6 ± 185%	4.6 ± 165%
Idaho	0	0	0	<50 ± 192%	0	<50 ± 192%	0	0
Montana	1,400 ± 172%	100 ± 82%	600 ± 185%	<50 ± 80%	700 ± 171%	<50 ± 85%	2.1 ± 252%	4.0 ± 115%
Nevada	100 ± 113%	100 ± 195%	0 ± 101%	100 ± 179%	100 ± 139%	200 ± 138%	2.7 ± 152%	0.9 ± 264%
Oregon	9,300 ± 179%	0	1,700 ± 137%	0	2,500 ± 145%	0	5.5 ± 225%	0
Utah	600 ± 158%	300 ± 103%	1,400 ± 104%	600 ± 150%	7,900 ± 155%	1,200 ± 139%	0.4 ± 189%	0.6 ± 182%
Washington	3,600 ± 146%	0	1,200 ± 92%	0	4,100 ± 104%	0	3.1 ± 172%	0
Pacific Flyway Total	30,500 ± 99%	16,900 ± 114%	9,900[a]	4,500[a]	24,000 ± 64%	31,300 ± 151%		
Alaska	200 ± 133%	1,700 ± 101%	100 ± 89%	600 ± 142%	200 ± 104%	4,300 ± 164%	2.3 ± 160%	3.0 ± 174%
U.S. Total	276,500 ± 56%	86,400 ± 52%	40,200[a]	29,200[a]	131,300 ± 37%	101,300 ± 55%		

[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.

Table 19. Estimates of rail harvest and hunter activity during the 1999 and 2000 hunting seasons.

	Rail Harvest		Active Hunters		Rail Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	1999	2000	1999	2000	1999	2000	1999	2000
Connecticut	0	700 ± 123%	0	<50 ± 123%	0	100 ± 169%	0	29.5 ± 174%
Delaware	100 ± 195%	<50 ± 179%	100 ± 195%	<50 ± 179%	900 ± 195%	<50 ± 179%	1.0 ± 276%	4.0 ± 253%
Florida	1,700 ± 165%	0	800 ± 183%	100 ± 194%	1,000 ± 147%	200 ± 194%	2.2 ± 246%	0
Georgia	900[b]	0	0	0	100 ± 0%	0	35.0[b]	0
Maine	100 ± 134%	0	100 ± 67%	0	200 ± 81%	0	1.1 ± 150%	0
Maryland	0	<50 ± 190%	800 ± 196%	<50 ± 190%	800 ± 196%	<50 ± 190%	0	2.0 ± 269%
Massachusetts	100 ± 108%	300 ± 189%	<50 ± 72%	100 ± 175%	<50 ± 79%	200 ± 161%	5.5 ± 129%	3.7 ± 258%
New Jersey	1,700 ± 82%	1,300 ± 69%	100 ± 40%	100 ± 41%	600 ± 87%	300 ± 54%	13.7 ± 92%	10.2 ± 80%
New York	200 ± 172%	0	600 ± 178%	<50 ± 192%	3,800 ± 185%	<50 ± 192%	0.3 ± 247%	0
North Carolina	0	400 ± 194%	100 ± 195%	2,100 ± 187%	100 ± 195%	2,100 ± 183%	0	0.2 ± 269%
Pennsylvania	0	<50 ± 153%	0	<50 ± 105%	0	100 ± 120%	0	1.7 ± 185%
Rhode Island	<50 ± 120%	0	<50 ± 120%	0	100 ± 129%	0	6.0 ± 170%	0
South Carolina	2,200 ± 106%	0	100 ± 95%	0	300 ± 103%	0	23.8 ± 142%	0
Virginia	2,600 ± 92%	1,800 ± 138%	100 ± 61%	100 ± 77%	300 ± 74%	300 ± 90%	19.4 ± 110%	14.0 ± 158%
West Virginia	0	<50 ± 182%	0	<50 ± 182%	0	100 ± 182%	0	2.0 ± 258%
Atlantic Flyway Total	9,700 ± 47%	4,600 ± 64%	2,800[a]	2,600[a]	8,000 ± 95%	3,500 ± 112%		
Alabama	100 ± 150%	100 ± 193%	<50 ± 134%	<50 ± 193%	100 ± 150%	100 ± 193%	2.0 ± 201%	5.0 ± 272%
Arkansas	0	0	<50 ± 190%	0	<50 ± 190%	0	0	0
Illinois	100 ± 191%	<50 ± 190%	<50 ± 129%	<50 ± 190%	100 ± 138%	<50 ± 190%	3.5 ± 231%	2.0 ± 269%
Indiana	800 ± 174%	100 ± 187%	2,100 ± 110%	<50 ± 187%	2,800 ± 116%	<50 ± 187%	0.4 ± 206%	6.0 ± 264%
Iowa	100 ± 118%	100 ± 191%	<50 ± 91%	<50 ± 191%	100 ± 106%	<50 ± 91%	2.3 ± 149%	4.0 ± 270%
Kentucky	0	0	0	0	0	0	0	0
Louisiana	13,500 ± 82%	7,800 ± 97%	2,400 ± 127%	600 ± 63%	6,100 ± 112%	2,700 ± 97%	5.5 ± 152%	14.1 ± 115%
Michigan	0	0	0	0	0	0	0	0
Minnesota	<50 ± 169%	0	<50 ± 84%	200 ± 196%	100 ± 108%	200 ± 196%	0.3 ± 189%	0
Mississippi	0	0	0	0	0	0	0	0
Missouri	0	0	0	0	0	0	0	0
Ohio	2,600 ± 132%	1,400 ± 195%	100 ± 63%	3,100 ± 133%	600 ± 84%	7,300 ± 130%	19.9 ± 146%	0.5 ± 236%
Tennessee	0	0	0	<50 ± 194%	0	300 ± 194%	0	0
Wisconsin	400 ± 111%	0	100 ± 95%	0	900 ± 143%	0	3.5 ± 146%	0
Mississippi Flyway Total	17,700 ± 67%	9,600 ± 84%	4,900[a]	3,900[a]	10,600 ± 72%	10,700 ± 93%		
Colorado	<50 ± 191%	0	<50 ± 133%	<50 ± 132%	100 ± 161%	100 ± 139%	0.5 ± 233%	0
Kansas	2,300 ± 113%	300 ± 127%	800 ± 128%	<50 ± 103%	2,200 ± 142%	100 ± 114%	2.7 ± 171%	12.3 ± 164%
Nebraska	800 ± 167%	<50 ± 190%	300 ± 189%	<50 ± 190%	400 ± 167%	<50 ± 190%	2.3 ± 252%	1.0 ± 269%
New Mexico	0	<50 ± 176%	0	<50 ± 176%	0	<50 ± 176%	0	9.0 ± 249%
Oklahoma	200 ± 103%	0	<50 ± 79%	0	100 ± 84%	0	8.4 ± 130%	0
Texas	900 ± 183%	300 ± 195%	2,900 ± 185%	100 ± 195%	3,600 ± 154%	100 ± 195%	0.3 ± 260%	5.0 ± 275%
Wyoming	0	500 ± 122%	0	300 ± 110%	0	800 ± 121%	0	1.7 ± 164%
Central Flyway Total	4,300 ± 79%	1,100 ± 83%	4,100[a]	400[a]	6,400 ± 100%	1,000 ± 98%		
U.S. Total	31,600 ± 41%	15,300 ± 56%	11,900[a]	6,900[a]	25,000 ± 50%	15,200 ± 71%		

[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.

[b]Variance inestimable.

Table 20. Estimates of gallinule harvest and hunter activity during the 1999 and 2000 hunting seasons.

	Gallinule Harvest		Active Hunters		Gallinule Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	1999	2000	1999	2000	1999	2000	1999	2000
Delaware	300 ± 195%	<50 ± 179%	100 ± 195%	<50 ± 179%	900 ± 195%	<50 ± 179%	2.0 ± 276%	4.0 ± 253%
Florida	400 ± 121%	0	100 ± 83%	0	100 ± 93%	0	6.6 ± 147%	0
Georgia	100[b]	0	0	0	0	0	2.0[b]	0
Maine	300 ± 130%	0	100 ± 67%	100 ± 195%	500 ± 97%	1,200 ± 195%	2.6 ± 146%	0
New Jersey	<50 ± 183%	0	<50 ± 128%	<50 ± 104%	100 ± 148%	100 ± 116%	1.0 ± 224%	0
New York	300 ± 179%	<50 ± 192%	600 ± 178%	<50 ± 192%	2,800 ± 182%	100 ± 192%	0.5 ± 252%	1.0 ± 271%
North Carolina	0	0	100 ± 195%	0	200 ± 195%	0	0	0
Pennsylvania	0	100 ± 186%	0	<50 ± 130%	0	100 ± 142%	0	4.5 ± 227%
South Carolina	100 ± 151%	0	<50 ± 135%	0	200 ± 151%	0	2.0 ± 203%	0
Virginia	0	0	0	0	0	0	0	0
West Virginia	0	0	0	0	0	0	0	0
Atlantic Flyway Total	1,400 ± 69%	100 ± 130%	1,100[a]	200[a]	4,700 ± 115%	1,400 ± 162%		
Alabama	100 ± 118%	500 ± 193%	100 ± 94%	<50 ± 193%	500 ± 104%	100 ± 193%	1.5 ± 151%	18.0 ± 272%
Arkansas	<50 ± 190%	0	<50 ± 190%	<50 ± 191%	400 ± 190%	100 ± 191%	1.0 ± 269%	0
Indiana	<50 ± 189%	0	1,400 ± 136%	0	2,100 ± 142%	0	<0.05 ± 233%	0
Kentucky	0	0	0	0	0	0	0	0
Louisiana	29,000 ± 82%	16,400 ± 84%	800 ± 51%	3,200 ± 112%	5,500 ± 71%	9,600 ± 100%	35.9 ± 97%	5.1 ± 140%
Michigan	0	0	0	0	0	0	0	0
Minnesota	200 ± 157%	0	<50 ± 97%	0	100 ± 118%	0	14.3 ± 185%	0
Mississippi	0	0	0	0	0	0	0	0
Ohio	0	1,300 ± 195%	<50 ± 134%	100 ± 195%	200 ± 167%	1,400 ± 195%	0	10.0 ± 276%
Tennessee	0	0	0	<50 ± 194%	0	300 ± 194%	0	0
Wisconsin	<50 ± 193%	0	<50 ± 193%	0	<50 ± 193%	0	1.0 ± 273%	0
Mississippi Flyway Total	29,300 ± 82%	18,200 ± %	2,400[a]	3,400[a]	8,800 ± 57%	11,500 ± 87%		
New Mexico	0	0	0	100 ± 195%	0	200 ± 195%	0	0
Oklahoma	200 ± 136%	0	<50 ± 89%	0	100 ± 120%	0	6.8 ± 162%	0
Texas	600 ± 194%	0	100 ± 137%	0	800 ± 181%	0	5.5 ± 238%	0
Central Flyway Total	700 ± 157%	0	100[a]	100[a]	900 ± 156%	200 ± 195%		
Arizona	100 ± 189%	0	<50 ± 189%	0	100 ± 189%	0	5.0 ± 267%	0
California	900 ± 138%	1,000 ± 170%	200 ± 84%	100 ± 136%	800 ± 116%	300 ± 170%	5.8 ± 161%	16.0 ± 218%
Idaho	0	0	0	0	0	0	0	0
Montana	200 ± 195%	1,500 ± 195%	200 ± 195%	200 ± 195%	200 ± 195%	700 ± 195%	1.0 ± 276%	9.0 ± 276%
Nevada	0	0	<50 ± 176%	0	<50 ± 176%	0	0	0
Pacific Flyway Total	1,100 ± 113%	2,500 ± 134%	400[a]	200[a]	1,100 ± 94%	900 ± 148%		
U.S. Total	32,600 ± 74%	20,900 ± 70%	4,000[a]	3,800[a]	15,500 ± 49%	14,100 ± 74%		

[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.

[b]Variance inestimable.

Table 21. Estimates of coot harvest and hunter activity during the 1999 and 2000 hunting seasons.

	Coot Harvest		Active Hunters		Coot Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	1999	2000	1999	2000	1999	2000	1999	2000
Connecticut	0	200 ± 195%	0	100 ± 195%	0	400 ± 195%	0	2.0 ± 276%
Delaware	0	100 ± 185%	0	<50 ± 185%	0	<50 ± 185%	0	8.0 ± 262%
Florida	4,400 ± 113%	300 ± 195%	700 ± 139%	100 ± 195%	1,200 ± 87%	100 ± 195%	6.5 ± 179%	4.0 ± 275%
Georgia	100 ± 194%	1,100 ± 186%	<50 ± 194%	100 ± 111%	<50 ± 194%	300 ± 118%	3.0 ± 274%	8.7 ± 217%
Maine	1,300 ± 54%	2,600 ± 153%	300 ± 41%	900 ± 149%	900 ± 52%	2,400 ± 160%	4.3 ± 68%	3.0 ± 213%
Maryland	900 ± 196%	100 ± 191%	1,000 ± 188%	<50 ± 191%	1,100 ± 169%	<50 ± 191%	1.0 ± 271%	3.0 ± 270%
Massachusetts	400 ± 112%	300 ± 131%	200 ± 132%	200 ± 118%	500 ± 140%	500 ± 116%	1.9 ± 174%	1.8 ± 177%
New Hampshire	<50 ± 187%	0	<50 ± 187%	0	<50 ± 187%	0	1.0 ± 265%	0
New Jersey	1,500 ± 97%	<50 ± 189%	1,000 ± 93%	<50 ± 189%	3,400 ± 117%	100 ± 189%	1.5 ± 134%	1.0 ± 267%
New York	1,400 ± 79%	600 ± 145%	200 ± 56%	1,100 ± 172%	900 ± 68%	2,800 ± 140%	6.2 ± 97%	0.5 ± 225%
North Carolina	8,500 ± 116%	3,000 ± 104%	2,900 ± 150%	400 ± 82%	4,400 ± 106%	1,100 ± 84%	2.9 ± 190%	6.8 ± 133%
Pennsylvania	200 ± 121%	3,000 ± 120%	100 ± 80%	1,000 ± 125%	500 ± 96%	4,300 ± 157%	2.0 ± 145%	3.1 ± 173%
Rhode Island	<50 ± 135%	<50 ± 170%	<50 ± 121%	<50 ± 170%	<50 ± 144%	<50 ± 170%	2.0 ± 182%	12.0 ± 240%
South Carolina	700 ± 178%	200 ± 194%	100 ± 110%	<50 ± 194%	900 ± 177%	<50 ± 194%	9.0 ± 210%	5.0 ± 274%
Vermont	<50 ± 190%	0	300 ± 184%	0	1,100 ± 193%	0	0.1 ± 265%	0
Virginia	2,400 ± 109%	2,200 ± 108%	800 ± 150%	200 ± 79%	1,100 ± 114%	700 ± 93%	3.0 ± 185%	14.2 ± 134%
West Virginia	0	0	0	0	0	0	0	0
Atlantic Flyway Total	21,900 ± 53%	13,700 ± 52%	7,700[a]	4,100[a]	16,200 ± 45%	12,900 ± 69%		
Alabama	7,200 ± 98%	2,600 ± 119%	1,200 ± 99%	600 ± 112%	6,700 ± 115%	1,200 ± 84%	6.2 ± 139%	4.5 ± 163%
Arkansas	2,900 ± 148%	500 ± 147%	1,200 ± 174%	100 ± 96%	2,800 ± 106%	500 ± 106%	2.4 ± 228%	4.3 ± 175%
Illinois	6,300 ± 107%	5,400 ± 145%	1,100 ± 172%	900 ± 172%	12,500 ± 150%	24,500 ± 187%	5.9 ± 203%	6.1 ± 225%
Indiana	1,400 ± 109%	100 ± 150%	300 ± 54%	100 ± 133%	1,100 ± 80%	100 ± 141%	5.7 ± 122%	2.0 ± 201%
Iowa	1,600 ± 98%	11,300 ± 159%	900 ± 148%	1,600 ± 187%	2,000 ± 89%	2,000 ± 156%	1.9 ± 177%	7.2 ± 246%
Kentucky	400 ± 187%	0	<50 ± 187%	0	<50 ± 187%	0	35.0 ± 264%	0
Louisiana	111,100 ± 47%	143,800 ± 56%	5,600 ± 78%	8,100 ± 63%	19,000 ± 71%	28,400 ± 64%	19.7 ± 91%	17.7 ± 84%
Michigan	2,300 ± 119%	4,100 ± 138%	1,600 ± 164%	2,500 ± 117%	4,000 ± 131%	5,800 ± 147%	1.5 ± 203%	1.6 ± 181%
Minnesota	500 ± 69%	5,600 ± 122%	100 ± 46%	900 ± 105%	400 ± 68%	4,700 ± 147%	4.8 ± 83%	6.3 ± 161%
Mississippi	300 ± 195%	200 ± 195%	100 ± 195%	100 ± 195%	300 ± 195%	100 ± 195%	3.0 ± 276%	2.0 ± 276%
Missouri	3,400 ± 175%	0	1,100 ± 179%	<50 ± 193%	2,300 ± 172%	<50 ± 193%	3.1 ± 250%	0
Ohio	1,500 ± 107%	300 ± 137%	800 ± 165%	1,800 ± 168%	1,000 ± 133%	7,400 ± 161%	1.9 ± 196%	0.2 ± 217%
Tennessee	0	53,300 ± 196%	0	3,600 ± 193%	0	14,600 ± 191%	0	14.8 ± 275%
Wisconsin	8,200 ± 107%	2,800 ± 114%	3,200 ± 90%	300 ± 72%	6,200 ± 73%	1,100 ± 105%	2.6 ± 139%	8.0 ± 135%
Mississippi Flyway Total	147,300 ± 37%	230,000 ± 58%	17,200[a]	20,600[a]	58,200 ± 44%	90,300 ± 65%		

Table 21. Estimates of coot harvest and hunter activity during the 1999 and 2000 hunting seasons.

	Coot Harvest		Active Hunters		Coot Days Afield		Seasonal Harvest Per Hunter	
State / Flyway	1999	2000	1999	2000	1999	2000	1999	2000
Colorado	400 ± 154%	1,600 ± 99%	100 ± 81%	800 ± 153%	800 ± 118%	2,300 ± 116%	2.6 ± 174%	2.0 ± 182%
Kansas	2,300 ± 123%	2,500 ± 172%	500 ± 159%	500 ± 184%	1,100 ± 88%	700 ± 128%	4.4 ± 201%	5.4 ± 252%
Nebraska	4,300 ± 173%	3,100 ± 142%	500 ± 171%	1,500 ± 132%	2,600 ± 179%	2,900 ± 150%	7.9 ± 244%	2.1 ± 194%
New Mexico	500 ± 176%	<50 ± 185%	500 ± 190%	<50 ± 185%	1,500 ± 180%	<50 ± 185%	1.1 ± 259%	2.0 ± 262%
North Dakota	11,300 ± 144%	26,600 ± 135%	2,100 ± 130%	2,500 ± 132%	5,500 ± 127%	20,300 ± 163%	5.5 ± 194%	10.8 ± 188%
Oklahoma	3,800 ± 175%	400 ± 195%	600 ± 184%	100 ± 195%	8,100 ± 193%	200 ± 195%	6.3 ± 254%	6.0 ± 275%
South Dakota	600 ± 172%	2,100 ± 196%	100 ± 110%	2,100 ± 137%	100 ± 117%	3,200 ± 145%	5.7 ± 204%	1.0 ± 239%
Texas	5,000 ± 138%	600 ± 195%	3,000 ± 186%	200 ± 138%	16,000 ± 175%	500 ± 145%	1.7 ± 232%	3.5 ± 239%
Wyoming	700 ± 114%	400 ± 183%	100 ± 112%	200 ± 129%	500 ± 147%	1,000 ± 136%	7.0 ± 160%	2.0 ± 224%
Central Flyway Total	28,900 ± 71%	37,400 ± 98%	7,600[a]	7,800[a]	36,100 ± 92%	31,200 ± 108%		
Arizona	300 ± 102%	4,500 ± 124%	100 ± 77%	1,500 ± 112%	400 ± 100%	3,500 ± 114%	4.0 ± 128%	3.0 ± 167%
California	12,500 ± 86%	46,400 ± 121%	1,100 ± 42%	3,000 ± 110%	5,400 ± 61%	9,500 ± 93%	11.4 ± 96%	15.4 ± 164%
Idaho	0	100 ± 192%	1,400 ± 196%	<50 ± 192%	1,400 ± 196%	100 ± 192%	0	4.0 ± 272%
Montana	200 ± 99%	<50 ± 163%	<50 ± 77%	<50 ± 163%	100 ± 133%	<50 ± 163%	6.0 ± 126%	1.0 ± 231%
Nevada	1,200 ± 139%	1,200 ± 156%	500 ± 176%	200 ± 131%	1,500 ± 163%	1,000 ± 150%	2.6 ± 224%	6.2 ± 204%
Oregon	0	0	800 ± 196%	0	1,700 ± 196%	0	0	0
Utah	3,000 ± 99%	300 ± 96%	1,500 ± 96%	600 ± 142%	4,500 ± 87%	900 ± 96%	1.9 ± 138%	0.5 ± 171%
Washington	20,800 ± 59%	1,400 ± 196%	2,100 ± 23%	1,400 ± 196%	11,700 ± 37%	4,100 ± 196%	9.7 ± 63%	1.0 ± 277%
Pacific Flyway Total	37,800 ± 44%	54,000 ± 105%	7,600[a]	6,700[a]	26,800 ± 31%	19,200 ± 66%		
U.S. Total	236,000 ± 26%	335,000 ± 45%	40,000[a]	39,200[a]	137,300 ± 32%	153,600 ± 45%		

[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.

Table 22. Estimates of retrieved and unretrieved kill of doves,band-tailed pigeons, and woodcock during the 1999 and 2000 hunting seasons.

	Mourning Doves		White-winged Doves		Band-tailed pigeons		Woodcock	
	1999	2000	1999	2000	1999	2000	1999	2000
Eastern Management Unit								
Retrieved kill	11,194,200 ± 7%	10,773,900 ± 8%	1,200 ± 98%	15,000 ± 139%				
Unretrieved kill	1,673,600 ± 6%	1,635,800 ± 8%	0	1,100 ± 222%				
Central Management Unit								
Retrieved kill	11,401,200 ± 5%	13,258,300 ± 6%	782,900 ± 20%	1,222,600 ± 17%				
Unretrieved kill	1,422,500 ± 5%	1,521,200 ± 5%	102,700 ± 12%	158,500 ± 15%				
Western Management Unit								
Retrieved kill	2,092,300 ± 7%	2,263,100 ± 9%	154,300 ± 18%	118,400 ± 21%				
Unretrieved kill	245,400 ± 9%	228,400 ± 8%	19,700 ± 22%	9,800 ± 24%				
Four Corners States								
Retrieved kill					1,300 ± 94%	4,600 ± 78%		
Unretrieved kill					<50 ± 48%	200		
Pacific Northwest								
Retrieved kill					23,100 ± 85%	16,300 ± 54%		
Unretrieved kill					4,300 ± 60%	3,100 ± 41%		
Eastern Region								
Retrieved kill							129,400 ± 26%	97,900 ± 25%
Unretrieved kill							12,100 ± 31%	9,200 ± 39%
Central Region								
Retrieved kill							316,000 ± 27%	293,000 ± 25%
Unretrieved kill							60,200 ± 31%	41,800 ± 20%
United States								
Retrieved kill	24,687,600 ± 4%	26,295,300 ± 4%	938,500 ± 17%	1,355,900 ± 16%	24,400 ± 81%	20,900 ± 45%	445,400 ± 20%	390,900 ± 20%
Unretrieved kill	3,341,500 ± 4%	3,385,400 ± 5%	122,400 ± 11%	169,400 ± 14%	4,300 ± 59%	3,300 ± 39%	72,400 ± 27%	51,000 ± 18%

Table 23. Estimates of retrieved and unretrieved kill of snipe, rails, gallinules, and coots during the 1999 and 2000 hunting seasons.

	Snipe		Rails		Gallinules		Coots	
Flyway	1999	2000	1999	2000	1999	2000	1999	2000
Atlantic Flyway								
Retrieved kill	35,100 ± 92%	5,400 ± 83%	9,700 ± 47%	4,600 ± 64%	1,400 ± 69%	100 ± 130%	21,900 ± 53%	13,700 ± 52%
Unretrieved kill	4,000 ± 56%	400[a]	1,200[a]	400[a]	1,100[a]	<50[a]	4,800[a]	2,700[a]
Mississippi Flyway								
Retrieved kill	160,800 ± 68%	49,800 ± 77%	17,700 ± 67%	9,600 ± 84%	29,300 ± 81%	18,200 ± 78%	145,100 ± 38%	230,000 ± 58%
Unretrieved kill	20,300 ± 68%	12,100[a]	2,000 ± 46%	300 ± 67%	2,900 ± 56%	5,200[a]	30,900[a]	41,300[a]
Central Flyway								
Retrieved kill	47,300 ± 99%	12,600 ± 106%	4,300 ± 79%	1,100 ± 83%	700 ± 157%	0	28,900 ± 71%	37,400 ± 98%
Unretrieved kill	3,400 ± 31%	700 ± 30%	200 ± 92%	0	100[a]	0	4,500[a]	4,900[a]
Pacific Flyway								
Retrieved kill	30,500 ± 99%	16,900 ± 114%			1,100 ± 113%	2,500 ± 134%	37,800 ± 44%	54,000 ± 105%
Unretrieved kill	4,800 ± 97%	4,500 ± 112%			0	200 ± 136%	11,600 ± 105%	2,900[a]
United States								
Retrieved kill	273,900 ± 62%	86,400 ± 52%	31,600 ± 41%	15,300 ± 56%	32,600 ± 74%	20,900 ± 70%	233,700[a]	335,000 ± 45%
Unretrieved kill	29,600 ± 50%	17,800[a]	3,300[a]	800[a]	4,100[a]	5,400[a]	51,800[a]	51,800[a]

[a] Variance inestimable.

Table 24. Estimates of rail harvest during the 1999 and 2000 hunting seasons.

	Sora		Virginia rail		Clapper rail		King rail	
Flyway	1999	2000	1999	2000	1999	2000	1999	2000
Atlantic	2,100	1,000	100	<50	7,500	3,600	0	0
Mississippi	17,000	9,200	100	100	0	0	400	200
Central	3,400	900	300	100	500	100	<50	<50
U.S. Total	22,500	11,100	700	300	8,000	3,700	400	200