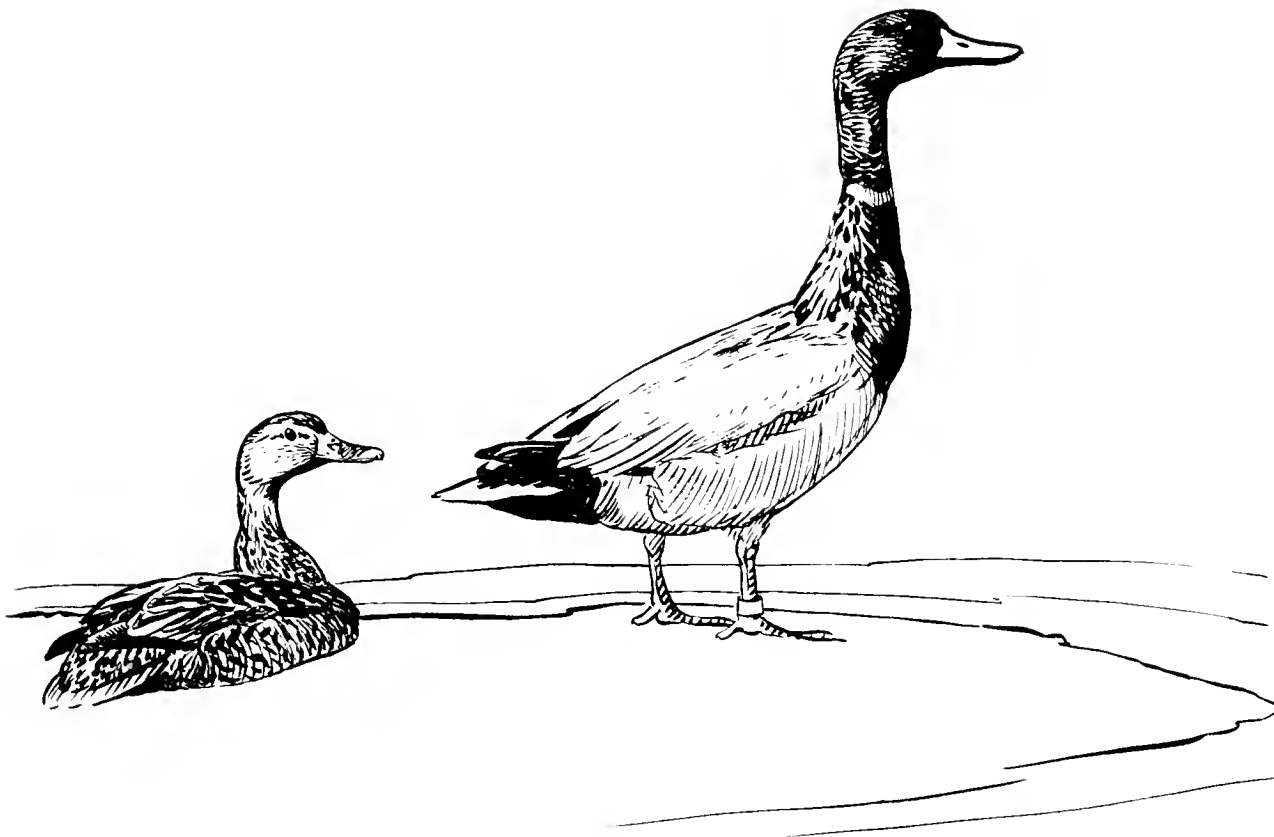




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WATERFOWL STATUS REPORT 1973



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UNITED STATES DEPARTMENT OF INTERIOR
FISH AND WILDLIFE SERVICE
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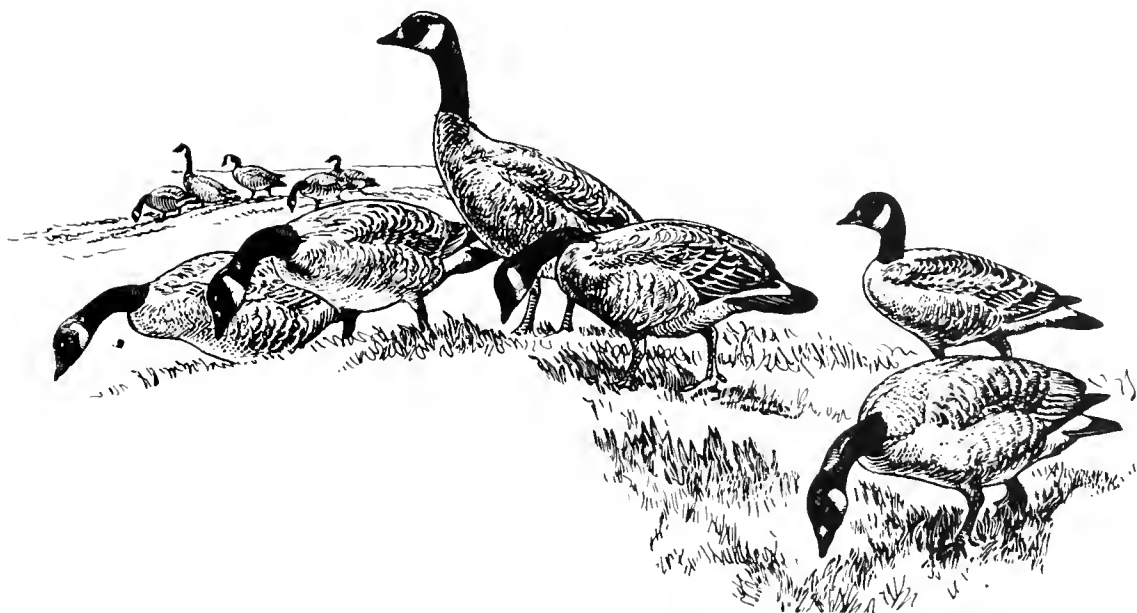
UNITED STATES DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service

WATERFOWL STATUS REPORT, 1973

Compiled and edited by

Douglas S. Benning, Morton M. Smith
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OFFICE OF MIGRATORY BIRD MANAGEMENT



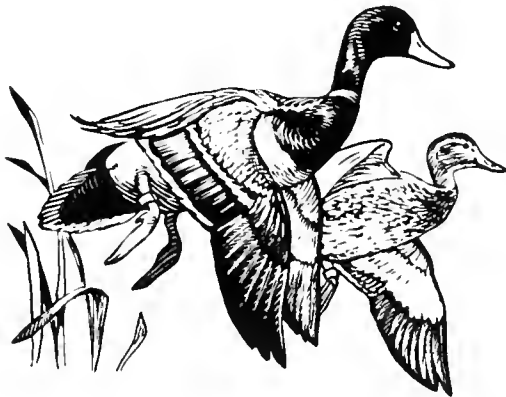
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WATERFOWL STATUS REPORT



1973

Information from surveys of the breeding and wintering grounds of waterfowl coupled with data from mail surveys of hunters play a major role in the development of annual hunting regulations for waterfowl. This report presents tabulations of the 1973 waterfowl population and habitat surveys and the results of mail surveys of waterfowl hunters for the 1972-73 season.

Credit has been given to each individual or organization that submitted a report. Although some of the narrative statements have been briefed, and a few tables deleted or shortened if they contained data submitted previously or in another form, the essential information from each report has been retained to the greatest extent possible. Fig. 1 in the Appendix shows the breeding ground survey strata for the several areas surveyed by Bureau of Sport Fisheries and Wildlife¹ crews.

WINTER SURVEY

During the first half of January, a survey of waterfowl on their wintering grounds was completed by the Bureau of Sport Fisheries and Wildlife with assistance from State conservation departments, other Federal agencies, and private individuals. All important waterfowl areas in the United States were surveyed. In Mexico, the survey was limited to the west coast wintering grounds of the black brant. Data from these surveys appear in Tables A-1, A-2, and A-3.

¹This report was compiled before 1 July 1974 when the name of the Bureau was changed to the U.S. Fish and Wildlife Service; consequently, "Bureau of Sport Fisheries and Wildlife," as used throughout this publication, was the correct name at the time the report was prepared. The Service's Editorial Office was not involved in the preparation of this report.

PACIFIC FLYWAY

Data supplied by John E. Chattin, Bureau of
Sport Fisheries and Wildlife

The annual winter waterfowl survey began 8 January 1973, and extended in some areas as much as two weeks beyond that date. Inclement weather in Idaho, Utah and California resulted in delays and interrupted coverage beyond normal expectations.

Participation in manpower and equipment was similar to prior years, and included 57 Bureau personnel and 156 State people. Forty aircraft flew 260 hours and over 25,000 miles. Additional coverage included 7,800 automobile miles and 70 boat miles.

Population data appear in Tables A-1 and A-2. Results of the survey showed a general pattern of decrease from last year. The dabbling duck index was 11 percent below 1972 and 8 percent above the ten-year average. The pintail remained well above the ten-year average while the mallard showed a slight decline. The diving duck index was up about 23 percent from last year, and 8 percent below the average.

Goose populations dropped off 24 percent from 1972 and were down 30 percent from the ten-year average.

CENTRAL FLYWAY

Data supplied by Raymond J. Buller, Bureau of
Sport Fisheries and Wildlife

Except for minor delays due to weather, the Central Flyway survey was completed on schedule. Participation included 62 Bureau personnel and 192 State people. Twenty-six aircraft flew 170 hours and covered a distance of nearly 19,000 miles. Additional coverage included over 17,000 car miles and 30 boat miles.

Despite some poor weather conditions during the survey, all important wintering areas were covered from the air or the ground.

The dabbling duck index was 39 percent below 1972 and 14 percent above the ten-year average. The mallard index was 31 percent below 1972 but 8 percent above the ten-year average. The pintail index was 38 percent below 1972 and 39 percent above the long-term average. The diving duck index was unchanged from 1972 but was 46 percent below the average. The redhead index was 6 percent above 1972 but 60 percent below the ten-year average. The total duck index was 36 percent below 1972 and 94 percent below the ten-year average.

The mid-December goose population in the flyway continued to increase. Blue/snow geese were responsible for the increase with a 30 percent rise over December 1971. The December 1972 white-fronted goose index was down 8 percent from the January 1971 index. The Canada goose index was down 5 percent from the previous year, and the total goose index was up 8 percent.

The coot index was 37 percent below 1972.

MISSISSIPPI FLYWAY

Data supplied by Arthur S. Hawkins and Rossalius C. Hanson,
Bureau of Sport Fisheries and Wildlife

Bad flying conditions prevented survey completion until 18 January 1973. A severe winter storm raced through the flyway at the onset of the survey, icing over protected bodies of water all the way to the Gulf. Subsequent rapid thawing within the survey scattered the waterfowl.

For these reasons, the figures for ducks obtained this year may not be directly comparable with past figures. The figures for geese shown in this report were obtained during the special goose inventory of mid-December.

Forty-six aircraft, 325 automobiles, and 41 boats were operated by 454 individuals for a total distance of 43,091 miles.

Population data appear in Tables A-1 and A-2. Mallard and black duck populations showed no significant change from 1972 and were only slightly below the ten-year average. Gadwalls were at the long-term average; green-winged teals were slightly above, but pintails, shovelers and wigeons were well below the average. Among the divers, both redheads and canvasbacks showed major gains in the table. However, the redhead gain probably is not real due to the fact that in 1973, 24,000 redheads were included for the Chandeleur Islands off the Louisiana coast. No figures were available for that area in 1972. Therefore, a "no change" situation is probably nearer the truth. The canvasback index increased 81 percent from last year. Both populations appeared to be close to their ten-year averages as did the scaup. Ring-necks continued their slump, but goldeneyes made a remarkable increase.

Blue/snow geese had a disastrous nesting season and declined, but Canadas continued their steady increase to a new all-time high. White-front numbers dropped slightly but were well above the long-term average. The coot figure obtained this year was markedly higher than last year's count. In summary, waterfowl numbers in the aggregate appear close to the ten-year average.

ATLANTIC FLYWAY

Data supplied by Douglas S. Benning and Edgar L. Ferguson,
Bureau of Sport Fisheries and Wildlife

The survey was conducted during the period January 8-18. Much of the flyway's inland waters and protected coastal areas were ice covered, making waterfowl counts easier and probably more complete than is normally possible.

Participation in the survey was by 45 Bureau, 66 State and 18 private individuals, using 36 aircraft, 34 cars and 14 boats. Routes covered totaled about 27,500 miles.

Population data appear in Tables A-1 and A-2. The total waterfowl count of nearly 2.9 million represented an 11 percent decrease from the 1971 count, and is the lowest count in the past 11 years.

Total dabblers in 1973 were 23 percent below the 1972 count. Mallard and black duck populations showed no significant change from the 1972 survey but were down from the ten-year average. Gadwalls, wigeons, green-winged teal, blue-winged teal, and pintails were well below their long-term averages, while shovelers were unchanged.

Diving duck numbers declined in 1973. Redheads, scaup, ringnecks, goldeneyes and buffleheads were all close to the 1972 counts and remain below their long-term average. The 1973 canvasback count in the Atlantic Flyway increased over that of last year. Ruddy ducks made a significant comeback from 1972 and were near their ten-year average. The 1973 inventory indicated a decline in Atlantic Flyway sea ducks, and it is believed these birds in fact did decline in numbers.

Snow geese were down from the record 1972 count. These geese had an exceptionally poor breeding season in the far north as did most arctic nesters. Canada geese showed no change from 1972. Brant numbers declined significantly for the second year in a row. The 1973 brant winter count is the lowest population recorded during the past 26 years. Productivity studies of brant along the coast during November and January indicated virtually no production during 1972. Whistling swans and coots showed insignificant changes from last year and the long-term average.

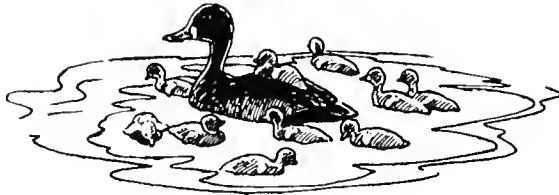
MEXICO

Data supplied by G. Hortin Jensen and James F. Voelzer,
Bureau of Sport Fisheries and Wildlife

The timing of the survey this year was near normal. It was commenced 17 January 1973, and completed 26 January 1973. The area covered was the same as that of recent years--the west coast of Baja California and the west mainland coast as far south as Mariscum

Nacional. Favorable weather was the rule during the survey. An amphibious DeHavilland Beaver was used for the survey with pilot and co-pilot acting as observers. Pintails comprised 75 percent of the estimates and, as always, were the primary component of these winter flocks. Baldpate, green-winged teal, and shovelers were of approximately equal rank and, in total, comprised 19 percent of 1973 estimates. Diving ducks, redheads, and scaup, made up 2 percent of the total estimate. On comparable areas, duck populations increased 13 percent over 1972.

Brant were only recently recorded on the mainland of Mexico and we have tabulated the data so as to monitor this development. After the first sightings in 1958, there was a steady increase for about six years. Since then, the mainland component has been between 20,000 and 40,000 brant. In 1973 there were 30,100. This represents a 7 percent increase from 1971 and a 28 percent increase from the sixteen-year average. However, the 30,100 is approximately equal to average conditions during the past 10 years. Total numbers are somewhat stabilized, and the chief difference between years seems to be a redistribution of brant within the areas surveyed. The total black brant population was 3 percent below 1972 and 9 percent below average.



BREEDING GROUND SURVEYS

The Migratory Bird Population Station recently completed an exhaustive audit of all field data relating to the Bureau's breeding ground surveys of waterfowl. Additionally, all partial segments were eliminated from the historical base and certain strata boundaries were realigned. The resulting data changes were incorporated in the 1972 Waterfowl Status Report.

In this 1973 Waterfowl Status Report, the tables dealing with Bureau-conducted surveys have been reduced in content through deletion of historical data. The breeding pair survey tables have also been changed in format to reflect adjustment for visibility bias. All reports prior to 1973 used unadjusted figures. Comparable data for earlier years (1955-1973) on the breeding pair surveys will be available soon in published form in a special scientific report. The historical production survey data (1955-1971) is available in Special Scientific Report - Wildlife No. 160. Data for the 1972 production survey is presented in last year's status report.

The procedures followed in conducting breeding ground surveys are established in the Bureau's Standard Procedures for Waterfowl Population and Habitat Surveys for prairie and bush areas.

ALASKA AND YUKON TERRITORY

Data supplied by James G. King and Palmer C. Sekora,
Bureau of Sport Fisheries and Wildlife

Spring weather and habitat conditions

After two late seasons, Alaska enjoyed an average-to-early spring. Weather and habitat conditions for waterfowl were uniformly good. Breakup was early and there was plenty of water in all areas, yet river flooding, which can cause a shortage of nesting sites in bottom lands, was minimal. Only the Koyukuk and Porcupine rivers were over their banks at the time of survey and these only in the lowest portions of their valleys. All species, including brant, dusky Canada geese, white-fronts and swans, were able to initiate nesting unimpeded by poor weather or shortages of nest sites.

The survey was begun on 19 May 1973 to coincide with the onset of optimum conditions on the Yukon Flats and Yukon Delta as the last remnants of winter ice were disappearing. The survey was completed on 9 June 1973.

Breeding populations (tables B-1 and B-1a)

The 1973 breeding population indexes were up 11 percent overall from the 1964-73 average but with little change from 1972. The dabbling duck index increased 16 percent over that of last year and remained well above the long-term average. The important pintail index was up 24 percent from 1972 and 38 percent from the average. Diving duck numbers showed a modest increase over 1972 and the long-term average. Scaup and canvasbacks were up significantly from last year. Oldsquaw and scoters were down considerably from 1972 levels.

Summer weather and habitat conditions

After a spring breakup slightly on the early side, cool weather with above average precipitation continued into mid-July in all parts of Alaska. This resulted in somewhat retarded growth of most herbaceous plants and insect populations. Grasses and sedges in the Interior appeared to be favored by such weather, producing particularly lush growth around pond margins. Overall weather conditions were mediocre and habitat conditions favorable for good waterfowl production.

Production (table B-1b)

As no brood counts were made in 1972, it is not possible to discuss duck production specifically in terms of change from last year. However, 1972 was a late spring and we may assume that brood numbers would have been fairly similar to the 1971 level. Thus we appeared to have had a

good increase in production in 1973 but were still below the ten-year average for most species. Production in the Tetlin area was not as good as the Fort Yukon area substantiating an impression that production was better some places than others. It was nice to see canvasbacks holding their own. The increase in scaup was partially due to the fact that the hatch was essentially complete by the time of the brood counts. In fact, some teal and pintail broods may have already fledged.

Cal Lensink reported production of all species on the Yukon Delta better than the previous 3 years. Word from the Arctic Slope suggested production had been poor there.

After a 3 year production slump, waterfowl populations in Alaska appear to have started an upswing.

NORTHERN ALBERTA,
NORTHEASTERN BRITISH COLUMBIA,
AND NORTHWEST TERRITORIES

Data supplied by James F. Voelzer and G. Hortin Jensen,
Bureau of Sport Fisheries and Wildlife

Spring weather and habitat conditions

With the exception of the month of February, winter in the survey area was generally characterized by above average temperatures and below average precipitation. Because of these factors, spring thaw and break-up were advanced by two weeks over an average year. Compared with the same time period in 1972, weather and habitat conditions were as much as three weeks to one month early. This seasonal advancement in 1973 provided arriving waterfowl optimum nesting habitat throughout the survey area. Even the Eskimo Lakes area was practically snow free and water was available in all of the lakes with the smaller water areas completely ice free.

Higher elevations in the southern portion of the survey area, such as the Caribou Hills and Horn Mountains, were open for arriving birds.

Water levels in the Athabasca Delta continued to show significant improvement over the immediate post-W.A.C. Bennett Dam period, and breeding pairs appear to have recovered to their traditional levels.

Breeding populations (table B-2)

Survey dates in 1973 corresponded almost exactly with those of 1972. The adjusted breeding population estimates for 1973 decreased for all

dabblers except wigeon. Overall dabbler decreases amounted to 17 percent. Total divers decreased 29 percent in relation to 1972, but canvasbacks showed an increase of 116 percent. Total ducks decreased 21 percent in relation to 1972 and increased 4 percent in relation to the long-term average. Coots increased 270 percent in relation to 1972 and increased 279 percent in relation to the average.

Summer weather and habitat conditions

Although spring arrived early in all areas, weather conditions in the Mackenzie Delta deteriorated thereafter to generally cold, damp, foggy, and overcast conditions for the remainder of June after the breeding pair surveys and on into July and August. This resulted in poor conditions for waterfowl production and a low brood index in the Delta area. The remainder of the survey area south of Strata 13 and 14 conformed to expected conditions resulting from an early spring and waterfowl production was good to excellent.

Numerous forest fires occurred in the survey area throughout the summer, and their resulting effect upon young ducklings could have been great in localized areas. However, it is not felt that the overall effect of these fires on waterfowl breeding and production was significant.

Production (table B-2)

The unadjusted duck brood index increased 33 percent in relation to 1972 and increased 14 percent in relation to the average. The mean brood size was 5.6 which is about average for the survey area.

NORTHERN SASKATCHEWAN, NORTHERN MANITOBA, AND SASKATCHEWAN RIVER DELTA

Data supplied by Arthur R. Brazda and Richard A. Gimby,
Bureau of Sport Fisheries and Wildlife

Fall, winter, spring weather and habitat conditions

September, 1972 was very wet in the northern portion of the Provinces. However, a mild and "snowless" winter left much of the waterfowl breeding grounds of Canada and the northern Great Plains short of water for the 1973 production effort. Initially, the boreal forest region of Saskatchewan and Manitoba were also short of water and habitat conditions were poor there. Most forest-type grassy marshes and shallow depressions were dry or nearly so, and water levels in many of the larger lakes were down two to four feet. During the latter part of May, the forest fire hazard went from high to extremely high.

Fortunately, the above-mentioned areas do not necessarily represent the quality production habitat for these strata.

In very late May and continuing through June, moisture in the form of rain saturated the northern regions of Manitoba, Saskatchewan and northeastern Alberta, reducing the fire hazard considerably. Generally, habitat conditions were improved into the northern reaches of the parklands. However, as June rains continued unabated, extensive flooding occurred and we suspect there was heavy nest destruction.

Chronologically, spring developed normally in the North with above-normal temperatures in April and the first three weeks in May. More normal temperatures were prevalent the last part of May and in June. From this standpoint, nesting conditions were good throughout the period.

Breeding populations (table B-3)

Total ducks adjusted for visibility bias declined 6 percent from 1972 and 8 percent from the ten-year average. Dabblers indicated a 4 percent increase from last year and a 17 percent decrease for the long-term average. Mallards and pintails showed increases of 13 percent and 49 percent respectively over 1972, but were down 12 percent and 30 percent from the average. Gadwall and American wigeon also increased over the previous year. Data for green-winged teal, blue-winged teal and shovelers suggested decreases for these three species from 1972. Of the dabblers, only the green-winged teal was above the ten-year average (18 percent).

The diving ducks were down 15 percent from 1972 and up 3 percent from the average. Canvasbacks, while not numerically strong in these strata, indicated a substantial increase over the previous year, but remained below the average. Goldeneye were up 71 percent in relation to 1972 and 89 percent above the average, while redheads were 24 percent above 1972 and 44 percent below the ten-year average. Scaup, ringnecks and bufflehead were down from the previous year; however, both scaup and bufflehead were above the average.

Coot showed a substantial increase of 272 percent over 1972 but 15 percent less than the average.

Summer weather and habitat conditions

Other than the extremely high rainfall, summer weather conditions were normal. No very low or very high temperatures were experienced and though considerable thunderstorm activity prevailed throughout the period, it, too, was considered normal. High winds and rain caused some curtailment of survey activities in the Prince Albert area. It can be noted that rainfall was officially recorded 24 out of 30 days in June at the Prince Albert, Saskatchewan weather facility.

Habitat conditions were varied as they generally are; the more luxuriant vegetative development was in the west, decreasing just slightly in northeastern Manitoba. Considerable flooding was evident, primarily in Saskatchewan, in all forms of habitat ranging from string-bogs, forest potholes and marshes, and slow-meandering streams to fast-flowing streams and large lakes. Lakes that were two feet below normal in May, were now considerably above normal. Quality nesting habitat appeared to be at a premium throughout Saskatchewan but improved north and east of Thompson, Manitoba.

Production (table B-3)

The unadjusted duck brood index of 87,700 represented a decrease of 44 percent from 1972 and 47 percent from the long-term average. The average brood size was 5.7, 7 percent above 1972 and 5 percent above the ten-year average. The late-nesting index (a measure of "broods to come") for all species of ducks was 39 percent below 1972 and 51 percent less than the ten-year average. However, it should again be pointed out that in the more northern latitudes, the application of the LNI is questionable.

WESTERN ONTARIO

Data supplied by Morton M. Smith and Everett B. Chamberlain,
Bureau of Sport Fisheries and Wildlife

Spring weather and habitat conditions

Spring seemed variable in western Ontario. In southern areas the phenology may have been similar in 1973 to that of 1972, but in northern portions of the survey unit, spring was later than it was in 1972. Big Trout Lake was about 90 percent ice-covered on 30 May 1973 and Sachigo and Wunnumin Lakes also had substantial amounts of ice remaining. Vegetative growth was well along in the south, but was just appearing in the more northerly portions of the survey area. Between 52° and 53° North latitude the buds of balsam poplar, paper birch and large-tooth aspen were just beginning to open at the end of May. Precipitation was about average, while daytime temperatures were slightly below normal during the survey period. However, flying weather was unusually good and the survey was completed in record time. The survey began 27 May 1973 and was completed 1 June 1973.

Breeding populations (table B-4)

Total waterfowl numbers in 1973 were 6 percent below the 1972 counts but were 17 percent above the average figure. Dabbling ducks were 41 percent above the average and 12 percent above the 1972 indexes. Mallards and black ducks were both above the ten-year average. Mallards were up over 1972 while black ducks were slightly down.

Diving duck numbers were down 5 percent from 1972 but remained 16 percent above the long-term average. Among those species listed in the miscellaneous category, there was a decrease of about 14 percent below the ten-year average and a 31 percent decrease from 1972 counts.

SOUTHERN ALBERTA

Data supplied by K. Duane Norman and Robert J. Fischer,
Bureau of Sport Fisheries and Wildlife

Spring weather and habitat conditions

March was warm and dry. Temperatures averaged almost 10 degrees above normal and the precipitation amounted to only one-third of normal. April was cool, dry and windy in Calgary, but in Edmonton through April 12th it was warm and dry. A heavy snowfall of eight inches accompanied by high winds was recorded on the 13th. Unstable weather conditions prevailed during the remainder of the month.

May was cloudy and cool during the first half of the month but became sunny and warm. By the 20th, 0.5 inches of rain had been recorded in Calgary but only 0.14 inches were recorded in Edmonton by the 13th. Strong winds in excess of 20 mph seemed to be the rule rather than the exception.

At the beginning of the survey period, snow could still be found near Calgary along the foothills, in the Milk River Ridge, in portions of the Cypress Hills and in protected areas along stream and river drainages. On 12 May 1973, Gull Lake was still frozen over, but by the 14th all traces of ice were gone. Cold Lake, except for a small rim near the town of Cold Lake, was frozen solidly on the 16th but little ice remained on the 17th. Large blocks of ice were present along the banks of the Athabasca River. Water levels in most of the major rivers appeared to be about normal and there was little evidence of flooding.

Waterfowl nesting habitat for the third consecutive year was quite poor in the grasslands, but the parklands in general were better quality than last year. The natural water areas in stratum 29 suffered from inadequate winter replenishment and many went dry before mid-summer. Temporary wetlands were almost completely lacking. Stockdams and dugouts, although not full, became the principal source of water for ducks. The only good waterfowl habitat in stratum 29 was found between Warner and Pincher Creek. The wetlands of the Cypress Hills were quite poor and the streams were nearly dry. In stratum 28, abundant temporary and overflowing permanent wetlands were found only in the immediate vicinity of Calgary but elsewhere only that portion north of a line between Carstairs and Alsask was considered good waterfowl habitat. Late spring snows left most of the more permanent wetlands

in the parklands of stratum 26 overflowing with water. Temporary wetlands were generally abundant throughout the stratum except north of a Sangudo-Redwater-Lloydminster line.

Phenologically, stratum 26 was at least one week ahead of the grasslands to the south. The aspens were nearly fully leafed in 26 while aspens in the grasslands were just starting to leaf.

Breeding populations (table B-5)

The data revealed that total ducks adjusted for visibility bias decreased 7 percent from last year and increased 17 percent from the long-term average. The dabblers decreased 9 percent from last year but the divers increased 24 percent. The dabblers were up about 16 percent from the average while divers were up by 38 percent. Greatest dabbler decreases from last year were indicated for pintail (-40 percent), gadwall (-37 percent) and wigeon (-12 percent). Mallards were up 6 percent from the long-term average and blue-winged teals were up 38 percent.

Of the divers, ringnecks decreased (-93 percent) from last year as did buffleheads (-42 percent) and redheads (-13 percent). Scaup increased 38 percent, and so did goldeneye (26 percent) and canvasback (66 percent). Goldeneye, scaup, canvasback, and redheads were above the long-term average. Decreases were indicated for ringnecks (-61 percent), and bufflehead (-18 percent). Coots were up 19 percent from last year and were 42 percent above the average.

Summer weather and habitat conditions

June was warm, wet and windy. Precipitation in Edmonton was 5.81 inches, which is almost twice the normal rainfall. Rainfall in Calgary was nearly normal. Winds were quite brisk and averaged 12.1 mph for the month. July thru the 15th was generally partly cloudy, cool and dry. Winds again were quite strong by mid-morning and averaged about 12 mph for the month. Winds with gusts up to 50 mph were recorded in Edmonton on the 11th and 12th.

Only the western edge of the Milk River Ridge had good quality waterfowl habitat. The remainder of stratum 29 had but a few permanent wetlands. Verdigris Lake was dry for the first time in nine years. The deep-water lakes along the Saskatchewan border had water levels about five feet lower than last year. July rains greatly improved the condition of the rangelands in the Cypress Hills and created fair quality wetlands but there were no ducks in the area to take advantage of the situation.

In stratum 28, the water levels of the potholes near the foothills remained very good but quality habitat was lacking throughout most of

the grasslands to the east. The Brooks-Tilley irrigation projects and associated marshes remained good quality areas throughout the breeding and production periods. Good permanent wetlands existed in the Sandhills but again ducks were lacking. The stratum 26 parklands contained good to excellent waterfowl habitat throughout the breeding season. July rains may have even improved the habitat especially northwest and north of Vermilion. Just above the North Saskatchewan River the quality of habitat dropped off quite rapidly but by no means became poor.

Aquatic vegetation presented few visibility problems in the grasslands and croplands but reduced our ability to see ducks and water in some wetlands in stratum 26.

Production (table B-5)

The unadjusted brood index was 33 percent lower than last year and 75 percent below the ten-year average. The average brood size was near normal.

The late-nesting index for dabblers showed a 14 percent increase from last year but the diver LNI decreased 40 percent.

SOUTHERN SASKATCHEWAN

Data supplied by Rossalius C. Hanson, and Douglas S. Benning,
Bureau of Sport Fisheries and Wildlife

Spring weather and habitat conditions

A mild winter across the prairies of Saskatchewan was climaxed by a near record high temperature in March. Precipitation from October through March over the southern prairies was as low as 40 percent of normal.

In contrast to the well below normal precipitation of the winter season, record April moisture totals were reported in the grain-growing areas of western Canada. Regina reported the heaviest April precipitation in its history (since 1884) with a total of 2.29 inches.

Despite the April rains, the earlier fall and winter conditions laid waste to the ponds and potholes over most of the prairies and parklands of southern Saskatchewan. This was evident when the tally was made at the end of the survey. Ponds for 1973 were down 48 percent from 1972 and down 37 percent from the average. The number of ponds were among the four lowest figures recorded since 1960. Only 1961, 1963 and 1968 were worse.

The driest areas were the prairie grasslands and the mideast and southeast parklands. The parklands were much better than the grassland prairie but still were poor.

May was a good month, weather-wise, for nesting and incubating ducks. Temperatures were never below the low thirties at night and few, if any, frosts were encountered. No unusual storms, snow, or hail were recorded. Scattered rain showers brought most of the moisture that did occur. The survey got underway on 7 May 1973.

Spring was quite normal chronologically and its development was orderly with setbacks due to weather.

Intensified burning of stubble and dry marshes was not particularly in evidence. Some took place but not on a large scale.

Breeding populations (table B-6)

Total ducks adjusted for visibility bias declined 15 percent in relation to 1972 and 18 percent from the long-term average. These figures indicate a modest decline in the breeding population.

Mallards, gadwall, shovelers, and pintails showed declines from 1972 while wigeon and green-winged teals were up. All combined divers were up 19 percent over 1972. Scaup and bufflehead were down from 1972 while all other divers were up.

Comparing this year's figures to the 1956-62 average, it should be noted that most of the major species were still down. All combined puddle ducks were down as were all combined diving ducks.

Coots showed a substantial increase over last year and a 21 percent gain over the average.

Summer weather and habitat conditions

The production period from early June to mid-July was characterized by ample rainfall generally throughout the area with exceptionally heavy amounts of precipitation in several areas. The areas hit with heavy rains were the northeast parklands, and a section in the far west near Kindersley and Leader. A section north of Saskatoon also was subjected to above normal thunderstorms and more than adequate moisture. The areas thus affected had flooded crops and water standing in the fields.

In contrast to the above, the great bulk of the grasslands in Strata 32, 33, 34 and 35 were still in the throes of the drouth. These croplands were able to produce hay and grain crops because of the frequent rains, but little or no runoff moisture was added to the larger

sloughs. Most of the small wetlands had disappeared by the end of May and no help came to them during this period.

Strata 32, 33, 34 and 35 were down in pond numbers from last year while the other strata showed increases. The result was an overall increase in ponds over the total survey area. It amounted to an increase of 33 percent over last year and a significant 63 percent above the long-term average. The pond index stood at 951,200. The increase was due to heavy precipitation in the parklands during the period.

Temperature-wise, the period was somewhat on the cool side. Due to intermittent rains and lowered temperatures, the climate was more like spring.

Nesting habitat was adversely affected by both flooding and drouth. Many of the larger and deeper ponds in the drouth area had open mud flats where vegetation was beyond the reach of the ducks or broods. Shallower ponds were completely dry and choked with vegetation. Receding water levels in the more permanent ponds gave adequate opportunity to observe adults and broods in those situations. In the flooded areas, emergent vegetation was heavy and may have obscured a small number of ducklings.

Crop production has been adversely affected in the flooded areas. Crop forecasts indicate a somewhat smaller harvest than normal.

Production (table B-6)

This year by July 18 the grasslands and parklands looked dismal insofar as brood production was concerned. Everything seemed to be working against the birds, i.e., too few ponds in drouth areas and too much water and flooding in the other situations. Total duck broods were off 44 percent from last year and down 57 percent from the long-term average. The average brood size was also reduced by 9 percent from last year and 6 percent from the average. The index was 4.7 young per brood. The total brood index stood at 97,800

Early overwater nesters had problems both from lack of vegetation for nesting in the drouth areas and too much water and flooding of nests in the good water areas. Late nesting species were in better shape in the good water areas because they were late enough to escape the rising waters. Some of the late nesting upland species were better off, also, when they nested in field crops with adequate cover.

The late nesting index this year was up 28 percent over last year and a whopping 37 percent over the long-term average. But only on one or two occasions in the past 20 years have we gotten a real good brood production out of a strong LNI.

SOUTHERN MANITOBA

Data supplied by Morton M. Smith and Richard C. Droll,
Bureau of Sport Fisheries and Wildlife

Spring weather and habitat conditions

The fall of 1972 was dry in southern Manitoba, and the 1972-73 winter was mild and open with below-normal moisture. Weather during the May survey was generally cool, with occasional rain and light winds. As of 28 May 1973, growing season precipitation (that since 1 April 1973) from ten selected stations in southern Manitoba averaged 38 percent above normal. It was cool and wet when we arrived on 6 May 1973, and night-time lows during the following week were in the twenties and thirties. Temperatures were below normal during the May survey period. Mean temperatures at 10 selected stations in Manitoba averaged 1.6 degrees below normal for the April 1 - May 28 period. Water conditions this spring were definitely poor and pond quality was not good. In many areas, water levels had receded leaving bordering cattails and bulrushes stranded. Overwater nesting cover, therefore, was often unavailable to diving ducks. Upland nesting cover was reduced due to the extensive plowing and burning during last fall and this spring. Habitat conditions were poor this May for breeding waterfowl in southern Manitoba. It was believed that without normal rainfall in June and July, conditions would deteriorate markedly in this survey area.

Breeding populations (table B-7)

Breeding duck numbers (adjusted for visibility bias) in southern Manitoba in May 1973 were 44 percent below the 1972 counts and 45 percent below the 1956-62 average (a period of high duck populations in southern Manitoba). Aerial indexes were down for the mallard, gadwall, blue-winged teal, shoveler, pintail, redhead, scaup, goldeneye, and bufflehead from 1972. Counts were up for green-winged teal, ringneck, ruddy duck and merganser. Coots were 57 percent below the 1972 counts and 59 percent below the average.

The lone drake index is considered an indicator of the progress and intensity of the nesting effort. The 1973 lone drake index was slightly lower than that of 1972 and lower than that of most recent years. Observations indicate mallard and pintail nesting efforts probably started near normal in 1973, but canvasback were definitely delayed. The continued appearance of paired birds and flocks through the May survey period indicate substantial loss and/or abandonment of early nesting attempts.

The adjusted duck index for southern Manitoba for May 1973 was reduced to nearly half that of 1972. The number of ponds declined

markedly in 1973 and pond quality was often poor. Burning was widespread both last fall and this spring, and this burning reduced nesting cover and destroyed nests. We interpret the early flocking of ducks and the continued presence of paired birds in May to indicate a less-than-normal nesting success. In fact, it appeared that some waterfowl never made any serious effort to nest.

Summer weather and habitat conditions

Rainfall continued above normal during June and July, and mean temperatures were below normal for the early summer period. Better-than-average rainfall during the summer helped maintain pond numbers, but pond quality continued poor despite the rains. July 1973 pond counts were down 19 percent from 1972 and are 31 percent below the 1956-62 average. In the last 12 years only 1962 and 1968 had lower July pond counts than those of 1973. Brood water was scarce or of poor quality over wide areas of southern Manitoba.

Crops were generally late in 1973. Soil moisture conditions improved from spring levels, and with favorable weather another good grain crop is expected.

Production (table B-7)

The duck brood index for southern Manitoba is a third lower than that of 1972 and less than half the size of the average brood index for the 1956-62 period. The average brood size was 5.4 and is below the norm of 5.6. Coot broods were scarce this July and production of coots was very poor. The survey this July was completed a day later than in 1972 but somewhat earlier than surveys in those years prior to 1972.

The late nesting index is a measure of broods to come and in a rough way compensates for variations in brood counts due to timing of the production survey. The 1973 late nesting index was 20 percent higher than that reported in 1972. Adult ducks were common on the prairies in southern Manitoba this July and were often found in flocks on those water areas resulting from recent rains. We do not believe that these groups of adults represented any great potential for later production. Single and paired birds were scarce or at least not obvious among such flocks, and the ponds used seemed to be feeding or nesting situations; no doubt, some late nesters were associated with the non-breeding flocks but we believe bonafide late nesters were relatively scarce.

Despite the above-average precipitation from May to July, we saw little evidence of any substantial late duck production in southern Manitoba. Some renesting was expected and some broods survived because ponds were maintained by rains. We expect duck production in southern Manitoba in 1973 to be poorer than that of 1972 and lowest since 1968.

MONTANA

Data supplied by Alva E. Weinrich and James S. Cromwell,
Bureau of Sport Fisheries and Wildlife

Spring weather and habitat conditions

May was a fairly dry month. Agricultural activities were well underway with spring wheat planting about 70 percent complete. Montana's winter wheat crop was in fair to good condition. Topsoil and subsoil moisture was in short supply in most areas except for the eastern third and the southcentral parts of the State. For the survey area, water was 18 percent less than 1972 and 5 percent above the eight-year average.

In the 9 May 1973 issue of the Billings Gazette, an article was noted regarding cloud seeding. It was stated that the most comprehensive weather modification program yet undertaken in the United States will be launched by the Bureau of Reclamation a year from now in a tier of States from border to border along the eastern slopes of the Rocky Mountains. This will be a \$20 million summer cloud seeding program. The project is expected to take from five to seven years and will be conducted from three sites in the 11-State area. One of the sites would be in the Montana-Dakota region. The project is designed to put water down when and where needed. Materials used would be such as common salt or a mixture of ammonium nitrate-urea released into cumulus clouds. The objective is to increase agricultural output, however, habitat would probably benefit as would waterfowl from this clean water.

Breeding populations (table B-8)

The mallard index, adjusted for visibility, was down 30 percent from 1972 and 20 percent from the 1965-72 average. The pintail index was 25 percent less than 1972 and 17 percent less than average. Total ducks were down 21 percent from 1972 and 18 percent from the average. Total diving ducks were up 22 percent and 30 percent from last year and the average, respectively. Canada geese and coots were also up.

The lone drake index for mallard and pintail for 1973 was the lowest of any year on record. Some migrant birds were observed at the start of the survey on 2 May 1973, but generally the birds were well paired and flocked drakes were observed. A storm in mid-to-late April may have delayed the breeding season some, but phenologically, the season appeared advanced from last year. The dry conditions in northern Montana certainly had some effect on early nesting.

Habitat conditions in northern Montana in early July generally were dry with water levels in stockdams and dugouts low. Southern

Montana had better moisture. Crop and hay production were expected to be good to excellent. No storms of any significance occurred during the survey. On only two days were there any strong winds. Temperatures were quite warm and above normal during the period. Pond vegetation hindered visibility some. The nesting season was advanced as indicated by the numbers of broods observed in each age class.

Production (table B-8)

The May 1973 breeding pair index, adjusted for visibility bias, was 17 percent and 15 percent less than 1972 and the average respectively. The July 1973 duck brood index, unadjusted, was 35 percent and 20 percent less than 1972 and the average respectively.

Brood sizes were only 6 percent less than 1972 and no change from the average. The coot brood index was below last year and the average, but coot production is not very significant in this area. The class composition of the broods observed were Class I - 18 percent, Class II - 38 percent, Class III - 44 percent. A number of broods were observed flying.

The total late nesting index was down 33 percent from 1972 but was 44 percent above the average. Diving ducks as a group are normally rather small in the overall picture and reflected a large percentage decrease from last year and the average. The good water in southern Montana is indicated by the slight decrease in the total late nesting index over last year, while in northern Montana, the late nesting index decreased to less than half that of last year.

NORTH AND SOUTH DAKOTA

Data supplied by Gerald Pospichal, Edgar L. Ferguson,
Alva E. Weinrich, James S. Cromwell,
Bureau of Sport Fisheries and Wildlife

Spring weather and habitat conditions

In North Dakota, temperatures ranged below normal from September through December with December setting near-record lows. Above-normal temperatures in January melted all snow with very little runoff. The warm trend lasted through May. Precipitation was below normal throughout most of the State from September through April. Some moisture was received in the central and northwest parts of the State in March and April but pond levels did not benefit except for parts of the Coteau and the northwest. Light May rains and thunderstorms did nothing to improve the water picture. The May water index for North Dakota was 51 percent below 1972 and down 15 percent

as compared to the 1960-69 average. Water quality was generally poor. Spring burning was much more common than in wetter years.

South Dakota also experienced the cold early-winter and above-normal January through April temperatures. Winter precipitation was below normal, except for the south-central part of the State, but not as critical as in North Dakota. During March, April and May moisture was received along the southern edge of the State but pothole levels and quality remained at best fair. The Leola and Sisseton Hills and a small area in the south-central held fair to good water levels. As compared to 1972 and the 1960-69 average, the South Dakota water index was down 37 percent and up 27 percent, respectively. Ponds in stratum 48, the major production area, showed a decline of 40 percent from the average.

May 1973 was one of the windiest on record, which hastened the drop in pond numbers in both States. In general, May habitat and water conditions in North Dakota and stratum 48 in South Dakota were the poorest since 1968. Visibility factors were comparable to other years.

Breeding populations (tables B-9 and B-10)

Total breeding ducks in North Dakota (adjusted for visibility bias) were down 33 percent as compared to 1972 and down 16 percent from the 1960-69 average. Mallards showed a decline of 19 percent from 1972 and an increase of 32 percent from the average. Gadwall showed a 37 percent and 21 percent decline. Blue-winged teal were down 13 percent and 29 percent respectively from 1972 and the long-term average.

Pintail were down 65 percent from 1972 and 40 percent from the average. Redheads were up 290 percent from 1972 and 129 percent from the average. Canvasbacks increased 41 percent from 1972 and 51 percent from the average. Coot numbers, an indicator of water quality, were down 33 percent from 1972 and 16 percent from the average. The lone drake index for North Dakota indicates the latest nesting effort since 1968 for mallards, pintails and canvasbacks.

In South Dakota, the adjusted duck breeding population was down 31 percent as compared to 1972 and up 19 percent from the average. Compared to 1972, mallard counts were down 17 percent, blue-winged teal down 30 percent, pintails down 31 percent, redheads up 271 percent, canvasback up 24 percent, and coot up 14 percent. Compared to the 1960-69 average mallard numbers were up 25 percent, blue-winged teal up 7 percent, pintail up 14 percent, redhead up 97 percent, canvasback up 244 percent and coot up 92 percent.

Summer weather and habitat conditions

Above-normal July temperatures were common throughout North Dakota. Precipitation was below normal except for the southwest. Statewide, pothole numbers were down 25 percent from 1972 but were only 1 percent from the average. Thunderstorms with high winds and hail caused crop and property damage in the east and south-central parts of the State as well as in South Dakota.

July temperatures in South Dakota were above normal and precipitation was below except for a part of stratum 44 (northwest). The statewide pond index declined 25 percent from 1972 but remained 14 percent above the average.

Dry conditions in both States allowed for heavy spring burning. Subsequent haying in the dried potholes reduced the amount of nesting cover and undoubtedly caused some nest losses. Haying operations were well along by late June. The grain harvest in South Dakota was early and underway by the second week in July. By July 20th, many barley fields in North Dakota were harvested or in swath. Ponds remaining in both States were generally of poor quality by mid-July.

Production (tables B-9 and B-10)

The July duck brood index for North Dakota was down 32 percent from 1972 and down 1 percent from the average. Average brood size 5.3 was down from 1972 and the average (5.4). The late-nesting index dropped 54 percent from 1972 and 42 percent from the average.

The 1973 July duck brood index for South Dakota declined 25 percent from 1972 but remained 14 percent above the average. Brood size 4.5 was down from 1972 and the 5.4 average. The late-nesting index in South Dakota declined 33 percent as compared to 1972 but was 10 percent above the average. Because of the dry conditions and poor water quality it is doubtful that the late-nesting and re-nesting efforts contributed much to the overall production in the Dakotas.

By July 20th, flocks of mixed species and sexes of ducks were present on the larger lakes apparently ready to moult. The contribution of the Dakotas to the 1973 fall duck flight was far below average years.

MINNESOTA

Data supplied by Robert L. Jessen,
Minnesota Department of Natural Resources

Weather and habitat conditions

Weather conditions were generally good for flying with the exception of extreme southern transects where winds were marginally high.

Habitat conditions, as evidenced by ponds, were variable. Northwestern Minnesota was extremely dry and this dry zone extended down the western prairie edge of the State (e.g. Hitterdahl air-ground transect had but a few ponds remaining). The remainder of the State had good water conditions, especially in the central region. The total pond estimate was 152,000, a decline of 24 percent from 1972 and a level about equal to that of 1971.

Breeding population (tables B-11 through B-16)

The breeding population index, before visibility corrections, was 280,000 birds. Of these, 38,000 were coots and the remainder ducks. The more numerous ducks were mallards (85,000) and blue-winged teal (66,000). An index of 31,000 scaup is somewhat misleading. These birds breed late and in an area primarily north of Minnesota but are still migrating at the time of our survey.

Comparisons of aerial and ground tallies indicate that three-fourths of the mallards present were seen by the aerial crew, nearly half the blue-winged teal and on the average, just over half of all ducks present. These are high visibility rates and may contain some errors, but are comparable to 1972 visibility rates.

Application of visibility rates to the breeding index indicates an adjusted population index of 111,000 mallards, 144,000 blue-winged teal and 9,500 ring-necked ducks. The total number of breeding ducks is estimated at 423,000 birds, for an increase of 64 percent over 1972. It should be noted that this is the third year in which calculations indicate the aerial crew saw all ringed ducks present - a highly unlikely situation that minimizes the estimate for these birds.

The present aerial survey was first adopted in 1968 and, as of last year, recorded declines in breeding ducks. This year the estimated number of breeding birds was roughly comparable to the earlier years, with about 400,000 breeding ducks estimated for the survey strata.

The variability of breeding ducks tallied within each stratum indicates an 80 percent confidence limit of 6 percent for all ducks in all strata.

The June tally of drake mallards recorded the smallest proportion of drakes still with a hen since this survey was first made in 1969. This indicates that mallards in western Minnesota were having a good nesting season as of early June.

In summary, the aerial census of breeding waterfowl in Minnesota progressed nicely in the spring of 1973. A substantial increase in breeding birds was recorded, reversing a downward trend of the previous several years. The number of breeding mallards rose to 111,000, the number of breeding blue-winged teal to 144,000 and all ducks to 423,000. Portions of the State declined in both water and breeding ducks. The northwestern portion of the State and extreme western Minnesota were dry, reflecting a similar situation to that of the Dakotas and Manitoba. Mallards appeared to be having a good nesting season as evidenced by few paired birds remaining in early June.

WASHINGTON

Data supplied by Robert Jeffrey, Ellis Bowhay, and Steven Zender,
Washington Department of Game

Weather and habitat conditions

The winter of 1972-73 in Washington was seriously deficient in snowfall, and the drying trend has continued through spring and summer. The far-eastern potholes were most seriously affected, while central Washington potholes were somewhat reduced from the excellent water levels of 1972. Duck brood habitat and goose nesting areas associated with rivers and streams also suffered from the poor run-off during the spring of 1973.

Breeding populations (table B-17)

The duck breeding potential was off 3 percent from the 1963-72 average and off 11 percent from 1972. Both mallard and wood duck adults were down substantially, but blue-winged and cinnamon teal and several of the diving duck species remained well above average levels.

Production (table B-18)

The State production index for all ducks was 350,000. This was 11 percent lower than the 1963-72 average and was down 17 percent from last year's index. Young ducks made up 57 percent of the index, as compared with 60 percent in 1972.

The decline involved the mallard (a minus 23 percent from last year) and most other species of dabblers. Wood ducks broke a long-term downward trend in the index, although the estimate remained 45 percent

below the 1963-72 average for this species. Diving ducks were not as seriously affected by poor water conditions. Poorer production was general across the State, but both the far-eastern potholes and western Washington seemed particularly affected by the poorer water conditions.

The production index for Canada geese has not been calculated, but breeding pairs have shown a moderate increase in those areas for which reports have been received. Nesting on islands in the pool behind the John Day Dam has increased, and this is thought to be due to the appearance of wild pasturage (alfalfa and sweet clover) along the shoreline. Lower river levels permitted predators to reach many of the nesting islands, but, overall, the production index for the Basin Canada goose is expected to be slightly higher than in 1972.

OREGON

Data supplied by Chester E. Kebbe,
Oregon State Game Commission

Weather and habitat conditions

The winter of 1972-73 was one of the driest on record for southeastern Oregon, the region containing the major waterfowl production marshes in the State. Relatively little precipitation fell, either as rain or snow, during the winter or spring months. As a result, many of the small marshes and potholes went dry before the start of the breeding season and water levels of the large marshes, reservoirs, lakes and streams were drastically reduced. The drouth continued into the summer period further shrinking the amount of waterfowl production habitat.

Production (tables B-19 through B-21)

Canada goose production surveys were conducted on 18 ground samples, transecting most of the major breeding grounds in Oregon. Results indicate a production decrease of 21 percent from 1972 and a decrease of 12 percent from the average of the previous five years. The decline is due primarily to the loss of habitat.

In spite of the loss of considerable breeding habitat in southeastern Oregon, duck production on a statewide basis is up 51 percent from 1972. The indicated trend may have been due to sampling errors, however, rather than being an actual statewide increase. A major shift of breeding birds occurred from areas of drouth to permanent water areas, with increased production recorded on most transects. Production among dabblers was at approximately the same level as in 1972, but production of divers, primarily redheads, more than doubled.

Despite an indicated increase in duck production on permanent samples, preliminary reports from Malheur Refuge, the major waterfowl production area in the State, indicate a decline in production of all species. A production index of 13,300 ducks was recorded as compared with 33,700 in 1972. The dabbling index was down from 23,700 to 8,800 (63 percent) while divers were down from 10,000 to 4,500 (55 percent).

In summary, light winter precipitation, followed by a hot, dry spring and summer, resulted in the loss of a considerable amount of prime waterfowl production habitat. Many of the displaced breeders relocated elsewhere on permanent bodies of water. A decrease of 60 percent in duck production on the vast Malheur Refuge, partially offsets the increase recorded elsewhere on permanent transects. Statewide duck production was estimated to be up approximately 10 percent from 1972.

COLORADO

Data supplied by Michael R. Szymczak,
Colorado Division of Wildlife

Weather and habitat conditions

Water conditions in Colorado's major waterfowl breeding areas were found to be quite variable during the survey period. In spite of a record snowpack in mountain areas surrounding the San Luis Valley, the Valley proper was generally as dry as in 1972.

A late spring in southern Colorado retarded both the runoff from the surrounding mountains and irrigation activities in the Valley. Therefore, many of the ditches and ponds resulting from irrigation water were dry. Because of the expected late water, prospects were excellent for brood survival. Heavy winter snows produced excellent water conditions for birds breeding in North Park. In the Cache la Poudre and South Platte River Valleys, late spring storms filled most marshes and drainage basins, but retarded the irrigation season. High water on rivers in northwestern Colorado resulted in some flooding loss of Canada goose nests; particularly on the Yampa River.

Breeding population and production (tables B-22 through B-28)

The number of duck breeding pairs in 1973 increased 19 percent above the 1972 level, essentially equalling the long-term average. All areas, with the exception of Brown's Park, recorded increases over the 1972 level. The major increase in terms of numbers was noted in North Park. However, neither North Park nor the other major Colorado

duck breeding area, the San Luis Valley, reached the long-term average level in numbers of breeding pairs.

Increases in numbers of three species--the redhead, gadwall and pintail--were responsible for the majority of the increase in Colorado duck breeding numbers in 1973 over the 1972 level. The redhead, which normally comprises about four percent of the Colorado breeding populations, made up about 11 percent of the 1973 population. The mallard continues to be the major breeding species in the State, making up about 40 percent of the population.

The post-nesting season population of Canada geese along river systems in northwest Colorado was estimated to be approximately 1,500 in 1973. The total number of geese increased about 10 percent above the 1972 level, but estimated gosling production was off about seven percent. High water along the Yampa River created major problems in estimating production.

Canada goose gosling production in north-central Colorado increased to 1,450 birds, about 31 percent above the 1972 level and 28 percent above the average. All five trend areas showed increases in gosling production.

The prospect for excellent late water conditions in the San Luis Valley, along with the good water conditions in the other major breeding areas, were expected to result in excellent duck production and brood survival. The Canada goose flights from both northwest and north-central Colorado were expected to be very similar to 1972.

NEBRASKA

Data supplied by John Sweet and George Schildman,
Nebraska Game and Parks Commission

Weather and habitat conditions

Temperatures were quite warm and mild during early March. The latter part of March, April and May were quite cool, however. Early spring rains in the Sandhills were general with the extreme western and northeastern portions receiving the largest amounts. Only cool temperatures throughout the spring saved some of the smaller pothole types for early duck production. Most small water areas were either dry or very low from mid-June on. General summer rains had not occurred in the Sandhills production area by the third week of July. The July water index was 28.9 percent below that of 1972, which was also 6.0 percent below that of 1971. The eastern half of the

rain-water basin area maintained good water in local areas - but water supplies deteriorated generally. This compares to essentially no production water a year ago.

Breeding populations (table B-29)

Ground route transects were driven in the Sandhills during the period 10 July 1973 through 13 July 1973 in order to establish a production index.

A total of 72 broods with 398 ducklings were observed on transect for an average of 5.53 ducklings/brood, all species combined. The number of broods observed on transect was 10.8 percent above 1972 and the number of ducklings sighted was 9.6 percent above 1972. The number of ducklings/brood decreased slightly from 5.58 in 1972 to 5.53 in 1973. There was no significant production in the rain basin in 1972, to compare 1973 with. Production was the best in the past 4 years. Data on 57 random duck broods showed 6.63 young per brood. Forty of the broods were blue-winged teal.

Results of the ground surveys, made during the second week of July, indicated that duck production in the Nebraska Sandhills should be seven to eight percent better than that of 1972. Although there was a slight decrease in average brood size, more broods were observed. New broods of blue-winged teal were still appearing during the third week of July. Water areas continued to deteriorate, however. Nebraska's production from the two areas was expected to be substantially above 1972 (in excess of 10 percent better).

MISSOURI

Data supplied by Kenneth M. Babcock,
Missouri Conservation Department

Weather and habitat conditions

Spring temperatures alternated between warm spells and below freezing temperatures up into April. Flooding was prevalent state-wide with over 65 percent of the streams reported as still high during the June float survey period.

Production

As in past years, the stream float survey method was used for obtaining an estimate of wood duck production. Missouri has been

utilizing a locally developed Survey Evaluation Index for several years as a means of comparing nesting and productivity of wood ducks from year to year. This index is based on five nesting-production indices compiled from all data acquired on the state-wide stream float surveys. Wood duck broods noted per mile on 460 miles of stream floats was down to 0.14 but average brood size was up to 6.2. The population count was 1.23 and nesting effort 0.32 on a per mile basis. The Survey Evaluation Index (SEI) indicated that population and production of wood ducks was down three percent from last year but six percent above the ten-year average.

A significant increase in nesting mallards, blue-winged teal and shovelers were reported this year throughout the State. This was apparently related to the widespread flooding of suitable habitat during the period of spring migration. No measurement of numbers or production was possible.

Wood duck populations and production appear to be down about three percent from last year's measurements. Production by other species of dabbling ducks increased throughout the State but no measurement was possible.

WATERFOWL KILL SURVEY

Data supplied by Lonnie D. Schroeder, Michael F. Sorensen,
and Samuel M. Carney
United States Fish and Wildlife Service

INTRODUCTION

This report includes estimates of waterfowl hunting activity and success during the 1972 season and compares them with similar estimates for the 1971 season. Estimates for both years were derived from information obtained from three sources: 1) the Postal Service's report of duck stamp sales, 2) the Fish and Wildlife Service's Mail Questionnaire Survey of the United States Waterfowl Hunters, and 3) the Fish and Wildlife Service's Waterfowl Parts Collection Survey.

PROCEDURES

A relatively complete explanation of procedures followed in 1969 may be found in Special Scientific Report--Wildlife No. 138. Similar sample selection and stratification procedures subsequently have been followed. Major adjustments to date include those for activity by hunters less than 16 years old, who are not surveyed (Table C-1) and those used to compensate for memory and prestige biases (Table C-2).

Administrative Reports

Figures in this report are based on final duck stamp sales figures. In Administrative Report "Waterfowl Harvest and Hunter Activity in the United States During the 1972 Hunting Season" (6 July 1973), preliminary estimates based on sales of duck stamps through the third quarter of fiscal year 1973 were made available for the annual waterfowl regulations meetings in early August. Age and sex composition are not included here but were presented in Administrative Reports "Species Composition and Age Ratios of Geese Bagged During the 1971 and 1972 Hunting Seasons" (5 July 1973) and "Species, Age, and Sex Composition of Ducks Bagged in the 1972 Hunting Season in Comparison with Prior Years" (9 July 1973).

RESULTS

For ducks and coots, bias adjusted estimates of bag by species and total retrieved and unretrieved kill estimates are presented in Table C-3. Estimates of retrieved, unretrieved, and total goose kill are in Table C-4. Estimated numbers of potential waterfowl hunters, together with average and total numbers of days hunted and ducks and geese bagged (adjusted for response bias¹), with duck and goose species compositions, are presented at State, flyway, and U.S. levels in Tables C-5 through C-9. Duck stamp sales and their breakdown into non-hunters and active (hunting one or more days) and successful (bagging at least one duck, goose, or coot) waterfowl hunters are also presented for each State in Tables C-5 through C-9. These results include hunter activity and harvest during all special seasons. For States having a September teal season, the proportion of the total duck harvest that occurred after the September season is shown in Table 10.

The following is a resume of 1972 hunter activity and success by flyway, showing degree of change from 1971:

Atlantic Flyway

Duck stamp sales totaled 438,300 (-13%), and 1,660,700 ducks (-4%), 107,200 coots (-34%), and 206,200 geese (-39%) were bagged during 2,657,400 hunter-days (-10%). Those persons buying duck stamps for hunting averaged 5.9 days afield (+3%) and bagged an average of 3.7 ducks (+11%) and 0.5 geese (-30%) each. Estimates for the Atlantic Flyway are recorded in Table C-5.

Mississippi Flyway

Duck stamp sales totaled 908,300 (-9%), and 5,068,200 ducks (-7%), 623,500 coots (+46%), and 286,300 geese (-25%) were bagged during 6,582,500 hunter-days (-8%). Those persons buying duck stamps for hunting averaged 6.8 days afield (+1%) and bagged an average of 5.4 ducks (+3%) and 0.3 geese (-17%) each. Estimates for the Mississippi Flyway are recorded in Table C-6.

¹All data in this report have been adjusted for response bias at State, flyway, and U.S. levels. Data previously presented in MBPS waterfowl harvest reports were unadjusted for response bias at State levels; however, 1971 data presented herein have been adjusted at State levels to maintain comparability with 1972 data.

Central Flyway

Duck stamp sales totaled 425,000 (-7%), and 2,952,200 ducks (+8%), 104,900 coots (+33%), and 308,600 geese (-24%) were bagged during 3,052,700 hunter-days (-9%). Those persons buying duck stamps for hunting averaged 6.7 days afield (-3%) and bagged an average of 6.6 ducks (+16%) and 0.7 geese (-19%) each. Estimates for the Central Flyway are recorded in Table C-7.

Pacific Flyway

Duck stamp sales totaled 389,600 (-11%), and 3,871,700 ducks (-2%), 128,800 coots (-15%), and 364,200 geese (+10%) were bagged during 2,871,500 hunter-days (-7%). Those persons buying duck stamps for hunting averaged 6.9 days afield (+5%) and bagged an average of 9.6 ducks (+10%) and 0.9 geese (+24%) each. Estimates for the Pacific Flyway are recorded in Table C-8.

Alaska

Duck stamp sales totaled 14,900 (+3%), and 89,000 ducks (+22%), 500 coots (-48%), and 9,000 geese (-46%) were bagged during 70,200 hunter-days (-1%). Those persons buying duck stamps for hunting averaged 4.4 days afield (-4%) and bagged an average of 5.8 ducks (+18%) and 0.6 geese (-48%) each. Estimates for Alaska are recorded in Table C-9.

United States

Duck stamp sales totaled 2,176,100 (-10%), and 13,641,800 ducks (-2%), 964,900 coots (+17%), and 1,174,300 geese (-20%) were bagged during 15,234,400 hunter-days (-8%). Those persons buying duck stamps for hunting averaged 6.6 days afield (+2%) and bagged an average of 6.1 ducks (+8%) and 0.5 geese (-12%) each. Estimates for the United States are recorded in Table C-9.

APPENDIX

A. WATERFOWL WINTER SURVEY TABLES

TABLE A-1.--Winter survey, January 1973--waterfowl by species and flyway

(nearest hundreds)

Species	Pacific Flyway	Central Flyway	Mississippi Flyway	Atlantic Flyway	Total
Ducks:					
Dabblers:					
Mallard	1,782,000	2,350,300	2,911,600	175,700	7,219,600
Black duck	---	300	154,000	275,600	429,900
Mottled duck	---	38,500	63,000	200 ⁴ /	101,700
Gadwall	12,500	210,400	901,100	10,000	1,134,000
American wigeon	753,800	172,700	344,600	53,900	1,325,000
Green-winged teal	163,700	198,700	933,200	51,200	1,346,800
Blue-winged teal ¹ /	1,800	400	134,300	5,900	142,400
Northern shoveler	651,200	41,200	165,300	16,800	874,500
Pintail	2,868,000	875,400	540,500	78,000	4,361,900
Subtotal	6,233,000	3,887,900	6,147,600	667,300	16,935,800
Divers:					
Redhead	6,400	121,500	30,200	127,200	285,300
Canvasback	54,500	12,500	38,900	109,500	215,400
Scaup	139,000	59,100	963,600	388,900	1,550,600
Ring-necked duck	6,300	7,500	71,100	65,900	150,800
Goldeneye	43,000	7,400	44,800	49,300	144,500
Bufflehead	38,900	8,200	3,500	43,000	93,600
Ruddy duck	98,900	3,700	27,400	55,800	185,800
Subtotal	387,000	219,900	1,179,500	839,600	2,626,000
Miscellaneous:					
Eider	200	---	---	55,800	56,000
Scoter	113,200	---	---	52,400	165,600
Oldsquaw	800	---	---	10,200	11,000
Merganser	21,200	99,900	---	28,400	149,500
Subtotal	135,400	99,900	---	146,800	382,100
Unidentified & others:	28,300	75,600	66,500	15,400	185,800
Total ducks	6,783,700	4,283,300	7,393,600	1,669,100	20,129,700

TABLE A-1.--Winter survey, January 1973-waterfowl by species and flyway
(continued)

(nearest hundreds)

Species	Pacific Flyway	Central Flyway	Mississippi Flyway	Atlantic Flyway	Total
Geese:					
Blue/Snow goose	324,400	504,600	532,300	59,800	1,421,100
Ross' goose	18,800	Tr. ^{3/}	---	---	18,800
White-fronted goose	51,600	29,700	43,000	---	124,300
Greater Canada goose	101,000	412,200	608,700	712,000	1,833,900
Lesser Canada goose	101,100	---	---	---	101,100
Cackling goose	54,500	---	---	---	54,500
Total geese ^{2/}	651,400	946,500	1,184,000	771,800	3,553,700
Brant:					
Black brant	9,400	---	---	---	9,400
American brant	---	---	---	41,900	41,900
Total brant	9,400	---	---	41,900	51,300
Swans:					
Mute swan	---	---	---	1,700	1,700
Whistling swan	33,900	Tr.	100	57,100	91,100
Trumpeter swan	900	100	---	---	1,000
Total swans	34,800	100	100	58,800	93,800
Coots:					
American coot	528,600	164,700	1,834,200	346,300	2,873,800
Grand total	8,007,900	5,394,600	10,411,900	2,887,900	26,702,300

^{1/}Includes cinnamon teal

^{2/}Does not include brant

^{3/}Less than 50

^{4/}Florida duck

TABLE A-2.--Winter survey, January 1973--waterfowl by state and flyway

(nearest hundreds)

State	Ducks	Geese ^{2/}	Brant	Swans	Coots	Total
Pacific Flyway:						
Washington	847,100	59,200	5,900	800	14,100	927,100
Oregon	403,500	86,400	2,500	5,300	26,200	523,900
Idaho	599,700	10,500	---	500	7,400	618,100
Nevada	17,800	4,200	---	100	6,200	28,300
California	4,773,100	480,600	1,000	27,600	459,800	5,742,100
Utah	35,800	1,100	---	200	1,900	39,000
Arizona	24,500	5,200	---	---	12,900	42,600
Montana	53,300	2,100	---	300	100	55,800
Wyoming	3,200	400	---	Tr.	---	3,600
Colorado	10,900	1,700	---	---	---	12,600
New Mexico	14,800	Tr.	---	---	Tr.	14,800
Mexico ^{1/}
Flyway total	6,783,700	651,400	9,400	34,800	528,600	8,007,900
Central Flyway:						
Montana	37,200	900	---	---	---	38,100
Wyoming	100,800	2,000	---	---	---	102,800
North Dakota	1,600	---	---	---	---	1,600
South Dakota	147,100	19,800	---	100	Tr.	167,000
Nebraska	199,200	12,300	---	---	---	211,500
Colorado	233,000	71,200	---	---	---	304,200
Kansas	827,700	147,500	---	---	---	975,200
Oklahoma	371,100	90,000	---	---	3,900	465,000
New Mexico	210,900	30,100	---	Tr.	7,300	248,300
Texas	2,154,700	572,700	---	Tr.	153,500	2,880,900
Flyway total	4,283,300	946,500	---	100	164,700	5,394,600

TABLE A-2.--Winter survey, January 1973--waterfowl by state and flyway
(continued)

(nearest hundreds)

State	Ducks	Geese	Brant	Swans	Coots	Total
Mississippi Flyway:						
Minnesota	19,900	23,800	---	---	---	43,700
Wisconsin	15,400	10,200	---	---	---	25,600
Michigan	49,500	20,200	---	100	---	69,800
Iowa	40,100	4,400	---	---	---	44,500
Missouri	229,300	307,300	---	---	1,700	538,300
Illinois	459,700	249,400	---	---	---	709,100
Indiana	17,700	8,900	---	---	100	26,700
Ohio	40,200	19,400	---	---	---	59,600
Arkansas	784,500	3,600	---	---	25,900	814,000
Mississippi	658,000	3,000	---	---	42,600	703,600
Louisiana	4,414,200	450,400	---	---	1,740,100	6,604,700
Alabama	111,300	18,800	---	---	16,100	146,200
Kentucky	67,800	22,200	---	---	300	90,300
Tennessee	486,000	42,400	---	---	7,400	535,800
Flyway total	7,393,600	1,184,000	---	100	1,834,200	10,411,900
Atlantic Flyway:						
Maine	72,300	400	---	---	---	72,700
New Hampshire	4,000	2,500	---	---	---	6,500
Vermont	1,100	100	---	---	---	1,200
Massachusetts	72,800	6,000	300	400	---	79,500
Connecticut	25,800	1,700	---	400	Tr. ^{3/}	27,900
Rhode Island	27,900	1,900	---	200	---	30,000
New York	144,500	11,100	11,600	400	600	168,200
New Jersey	188,900	21,500	22,600	500	Tr.	233,500
Pennsylvania	29,900	27,900	---	300	600	58,700
Delaware	46,600	90,400	300	100	200	137,600
Maryland	230,700	463,500	400	34,400	1,500	730,500
Virginia	83,600	43,900	6,500	3,000	1,300	138,300
West Virginia	3,600	200	---	---	100	3,900
North Carolina	126,500	91,200	200	19,100	34,000	271,000
South Carolina	232,300	7,500	---	Tr.	88,200	328,000
Georgia	37,500	500	---	---	10,700	48,700
Florida	341,100	1,500	---	---	209,100	551,700
Flyway total	1,669,100	771,800	41,900	58,800	346,300	2,887,900

^{1/}See table A-3.

^{2/}Excludes brant

^{3/}Less than 50

TABLE A-3.--Winter waterfowl survey, west coast of Mexico, 1973

Species	1972	1973	Percent change 1972-73
Ducks:			
Dabblers:			
Mallard	---	---	----
Gadwall	7,900	1,800	- 77.2
American wigeon	64,700	63,900	- 1.2
Green-winged teal	87,400	64,400	- 26.3
Blue-winged teal	89,100	32,200	- 63.9
Northern shoveler	127,300	44,800	- 64.8
Pintail	614,600	724,700	+ 17.9
Subtotal	991,000	931,800	- 6.0
Divers:			
Redhead	21,800	9,200	- 57.8
Canvasback	3,000	100	- 96.7
Scaup	41,300	9,000	- 78.2
Goldeneye	100	Tr. ^{1/}	----
Bufflehead	1,400	1,000	- 28.6
Subtotal	67,600	19,300	- 71.4
Miscellaneous:			
Mergansers	5,700	5,000	- 12.3
Ruddy duck	11,500	1,400	- 87.3
Scoters	3,500	2,000	- 42.8
Black-bellied tree duck	6,100	5,600	- 8.2
Fulvous tree duck	2,800	1,200	- 57.1
Subtotal	29,600	15,200	- 48.6
Total ducks	1,088,200	966,300	- 11.2
Geese:			
Snow goose	500	300	- 40.0
White-fronted goose	200	3,200	+1500.0
Canada goose	---	Tr.	----
Subtotal	700	3,500	+ 400.0
Brant:			
Black brant	119,400	115,500	- 3.3
Coots:			
American coot	51,500	34,700	- 32.6

^{1/}Less than 50.

Table B-la.--Alaska-whistling swan breeding population indexes, 1964-1973.
(index numbers in thousands)

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	10 Year Average
Square miles sampled	414	208	212	210	212	212	212	212	212	212	212
Number counted	481	298	256	208	213	367	227	220	286	257	
Population index	50	62	52	43	43	75	46	45	59	53	53

Table B-lb.--Alaska-comparative brood counts from two study areas.

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1973	Ave. (10 yrs.)	%Change From 71	%Change From Ave.
<u>TETLIN</u>													
Mallard	23	2	3	9	13	13	10	12	2	3	9	+50	-67
Wigeon	23	6	7	36	28	39	47	11	-	7	20	+100	-65
Green-winged teal	27	19	16	66	101	103	85	44	4	8	47	+100	-83
Shoveler	-	-	-	-	1	7	4	6	2	-	2	-100	-400
Pintail	11	4	3	8	21	21	17	12	1	2	10	+100	-80
Canvasback	14	2	3	6	9	16	7	12	6	8	8	+33	same
Lesser scaup ^{2/}	11	2	-	10	14	11	44	2	1	4	10	+400	-60
Subtotal	109	35	32	135	187	210	214	99	16	32	107	+100	-70

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Mallard	8	3	9	6	11	19	35	20	2	6	12	+200	-50
Wigeon	41	14	39	49	62	88	112	41	34	47	53	+38	-11
Green-winged teal	16	7	18	52	47	44	48	28	16	28	30	+75	-7
Northern shoveler	10	3	8	11	13	21	9	6	3	11	10	+266	+10
Pintail	30	0	16	19	44	39	26	13	9	16	22	+78	-27
Canvasback	8	1	13	15	16	18	18	5	12	13	12	+8	+8
Lesser scaup	9	-	12	49	61	65	87	14	22	70	39	+218	+80
Subtotal	122	37	115	201	254	294	335	128	98	191	178	+95	+7
Total	231	72	147	336	441	504	549	227	114	223	284	+96	-21

^{1/}Note, No survey done in 1972.

^{2/}Scaup hatch not normally complete at time of survey.

Table B-5--Southern Alberta--1973 waterfowl breeding ground survey results

	Waterfowl Breeding Pair Survey (population estimate adjusted for visibility - numbers in thousands)			Waterfowl Production Survey (numbers in thousands)				
	1973	% change from 1972	1956-1962 average	% change from average	1973	% change from 1972	1956-1962 average	% change from average
May Ponds	613.4	-6	737.8	-17	July Ponds Duck Brood Index Avg. Brood Size	+82 -33 +1	527.5 315.1 5.786	+26 -75 -11
Breeding Population Estimates								
Ducks:								
Dabblers:								
Mallard	1,729.5	-5	1,628.9	+6	21.5	+42	4.8	+348
Black Duck	0.0	n.c.	0.0	n.c.	0.0	n.c.	0.0	n.c.
Gadwall	281.0	-37	245.3	+15	5.0	+32	2.0	+150
American Wigeon	394.1	-12	479.6	-18	6.3	+103	.9	+600
Green-winged Teal	311.9	+8	163.3	+91	14.0	n.c.	.1	+13900
Blue-winged Teal	918.9	+86	666.1	+38	7.3	-26	1.7	+329
Northern Shoveler	466.1	+7	328.6	+42	5.8	+93	1.0	+480
Pintail	1,025.1	-40	922.8	+11	4.0	-45	1.1	+264
Subtotal	5,126.6	-9	4,434.6	+16	63.9	+14	11.6	+452
Divers:								
Redhead	103.2	-13	97.9	+5	.6	-45	.4	+50
Canvasback	108.6	+66	79.5	+37	.8	+300	.2	+300
Scaup	588.9	+38	383.4	+52	9.2	+51	8.6	+7
Ring-necked	.6	-93	1.8	-67	0.0	-100	.1	-100
American Goldeneye	22.2	+26	13.7	+62	.2	.1	.1	+100
Bufflehead	28.7	-42	35.2	-18	.2	.2	.2	n.c.
Subtotal	852.2	+24	616.5	+38	11.0	-40	9.6	+15
Miscellaneous:								
Oldsquaw	0.0	n.c.	0.0	n.c.	0.0	n.c.	0.0	n.c.
Eider	0.0	n.c.	0.0	n.c.	0.0	n.c.	0.0	n.c.
Scoter	19.2	+21	28.6	-33	1.1	.1	.1	+1000
Ruddy Duck	37.4	-62	59.0	+37	5.5	-34	3.7	+49
Merganser	1.3	-50	1.0	+33	0.0	n.c.	0.0	n.c.
Subtotal	57.9	-51	88.6	-35	6.6	-20	3.8	+74
TOTAL DUCKS	6,036.7	-7	5,139.7	+17	81.5	-1	25.0	+226
Coots:								
American Coot	581.7	+19	410.3	+42	0.0	n.c.	0.0	n.c.
GRANDTOTAL	6,618.4	-5	5,550.0	+19	81.5	-1	25.0	+226

Table B-6--Southern Saskatchewan--1973 waterfowl breeding ground survey results

Waterfowl Breeding Pair Survey (population estimate adjusted for visibility - numbers in thousands)				Waterfowl Production Survey (numbers in thousands)					
	1973	% change from 1972	1956-1962 average	% change from average	July Ponds Duck Brood Index Avg. Brood Size	1973	% change from 1972	1956-1961 average	% change from average
May Ponds	1,015.6	-48	1,601.5	-37		951.2	+33	581.8	+63
						97.8	-44	227.3	-57
						4.709	-9	5.028	-6
Breeding Population Estimates									
Ducks:									
Dabblers:									
Mallard	2,353.0	-10	3,238.8	-27		71.2	+51	60.2	+18
Black Duck	0.0	n.c.	.2	-100		0.0	-100	0.0	n.c.
Gadwall	334.0	-42	392.1	-15		18.6	+55	7.7	+142
American Wigeon	1,050.6	+56	831.0	+26		11.6	+6	8.4	+38
Green-winged Teal	313.0	+28	304.0	+3		10.8	+3	1.2	+800
Blue-winged Teal	1,842.9	+1	1,761.6	+5		16.6	-9	23.4	-29
Northern Shoveler	538.4	-42	589.1	-9		7.9	+139	5.4	+46
Pintail	1,006.3	-56	1,838.6	-45		12.6	-24	7.7	+64
Subtotal	7,438.2	-18	8,955.4	-17		149.4	+25	114.0	+31
Divers:									
Redhead	179.3	+30	196.0	-9		4.9	+17	3.2	+53
Canvasback	228.9	+66	196.8	+16		7.1	+255	2.5	+184
Scaup	223.0	-68	607.7	-63		15.7	+28	14.0	+12
Ring-necked	9.5	-3	14.7	-35		2.2	+340	.4	+450
American Goldeneye	23.3	+348	16.4	+42		.3		.4	-25
Bufflehead	25.3	-47	13.4	+89		1.0	+100	.3	+233
Subtotal	689.3	+19	1,045.0	-34		31.2	+61	20.8	+50
Miscellaneous:									
Oldsquaw	0.0	n.c.	0.0	n.c.		0.0	n.c.	0.0	n.c.
Eider	0.0	n.c.	0.0	n.c.		0.0	n.c.	0.0	n.c.
Scoter	5.7	+90	6.4	-11		.7		.7	n.c.
Ruddy Duck	153.4	+57	158.8	-3		13.3	-1	9.2	+45
Merganser	1.4	+1.3	1.3	+8		0.0	n.c.	0.0	n.c.
Subtotal	160.5	+59	166.5	-4		14.0	+4	9.9	+41
TOTAL DUCKS	8,288.0	-15	10,166.9	-18		194.5	+28	144.7	+34
Coots:									
American Coot	1,863.7	+64	1,540.7	+21		0.0	n.c.	2.8	-100
GRAND TOTAL	10,151.7	-7	11,707.6	-13		194.5	+28	147.5	+32

Table B-8--Montana--1973 waterfowl breeding ground survey results

		Waterfowl Breeding Pair Survey (population estimate adjusted for visibility - numbers in thousands)				Waterfowl Production Survey (numbers in thousands)			
	1973	% change from 1972	1965-1972 average	% change from average	1973	% change from 1972	1966-1972* average	% change from average	
Hay Ponds	233.4	-18	221.4	+5	241.9	-6	155.4	+56	
					Duck Brood Index	-35	56.2	-20	
					Avg. Brood Size	-6	5.098	+1	
Breeding Population Estimates									
Ducks:									
Dabblers:									
Mallard	360.2	-30	452.1	-20	12.3	-4	6.5	+89	
Black Duck	0.0	n.c.	0.0	n.c.	0.0	n.c.	0.0	n.c.	
Gadwall	15.9	-24	115.2	-86	1.2	+20	1.5	-20	
American Wigeon	251.0	-24	183.0	+37	7.8	-2	3.3	+136	
Green-winged Teal	147.0	+62	61.1	+141	.7	-59	.4	+75	
Blue-winged Teal	15.1	-50	169.4	-91	0.0	-100	1.6	-100	
Northern Shoveler	49.7	-23	82.5	-40	.5	+25	.9	-44	
Pintail	244.9	-30	294.2	-17	1.9	-71	2.0	-5	
Subtotal	1,083.8	-23	1,357.5	-20	24.4	-21	16.2	+51	
Divers:									
Redhead	8.0		11.5	-30	0.0	n.c.	0.0	n.c.	
Canvasback:	11.6	+43	4.5	+158	.1	-96	.6	-83	
Scaup	54.0	+24	38.5	+40	.6	-88	1.0	-40	
Ring-necked	0.0	n.c.	2.1	-100	0.0	n.c.	.1	-100	
American Goldeneye	2.7	-73	1.5	+80	.5	+25	.1	+400	
Bufflehead	.6	-62	1.0	-40	0.0	n.c.	0.0	n.c.	
Subtotal	76.9	+22	59.1	+30	1.2	-85	1.8	-33	
Miscellaneous:									
Oldsquaw	0.0	n.c.	0.0	n.c.	0.0	n.c.	0.0	n.c.	
Fider	0.0	n.c.	0.0	n.c.	0.0	n.c.	0.0	n.c.	
Scoter	0.0	n.c.	0.0	n.c.	0.0	n.c.	0.0	n.c.	
Ruddy Duck	11.1	-45	15.9	-30	0.0	n.c.	.3	-100	
Merganser	.5	+25	.8	-37	.4	+33	0.0	+33	
Subtotal	11.6	-44	16.8	-31	.4	+33	.3	+33	
TOTAL DUCKS	1,172.3	-21	1,433.4	-18	26.0	-34	18.3	+42	
Coots:									
American Coot	.7	+116	56.1	+55	.3		0.0		
GRAND TOTAL	1,259.5	-17	1,489.5	-15	26.3	-33	18.3	+44	

*1971 not included in average

Table B-9--North Dakota--1973 waterfowl breeding ground survey results

	Waterfowl Breeding Pair Survey (population estimate adjusted for visibility - numbers in thousands)			Waterfowl Production Survey (numbers in thousands)				
	1973	% change from 1972	1960-1969 average	% change from average	1973	% change from 1972	1960-1969* average	% change from average
May Ponds	321.5	-51	376.3	-15	July Ponds Duck Brood Index Avg. Brood Size	234.5 35.1 5.251	236.3 35.5 5.425	-1 -1 -3
Breeding Population Estimates								
Ducks:								
Dabblers:								
Mallard	576.4	-19	437.5	+32	10.4	-24	16.0	-35
Black Duck	0.0	n.c.	0.0	n.c.	0.0	n.c.	0.0	n.c.
Gadwall	225.2	-37	286.2	-21	3.1	-79	8.2	-62
American Wigeon	101.9	+17	52.6	+94	1.6	+14	.4	+300
Green-winged Teal	76.1	-8	28.6	+166	.1	n.c.	.4	-75
Blue-winged Teal	606.3	-13	858.7	-29	4.4	-62	9.2	-52
Northern Shoveler	131.0	-55	243.5	-46	0.0	-100	.5	-100
Pintail	280.5	-65	470.2	-68	.6	-68	2.4	-75
Subtotal	1,997.4	-34	2,377.3	-16	20.2	-55	37.1	-46
Divers:								
Redhead	232.4	+290	101.3	+129	.7	-50	1.6	-56
Canvasback	43.8	+41	29.0	+51	.3	n.c.	.2	+50
Scaup	43.7	+153	29.8	+47	.2	-50	.3	-33
Ring-necked	0.0	-100	4.6	-100	0.0	n.c.	0.0	n.c.
American Goldeneye	0.0	-100	.2	-100	.5	n.c.	0.0	n.c.
Bufflehead	.5	-79	.1	+400	0.0	n.c.	0.0	n.c.
Subtotal	320.4	+176	165.0	+94	1.7	-19	2.1	-19
Miscellaneous:								
Oldsquaw	0.0	n.c.	0.0	n.c.	0.0	n.c.	0.0	n.c.
Eider	0.0	n.c.	0.0	n.c.	0.0	n.c.	0.0	n.c.
Scoter	0.0	n.c.	0.0	n.c.	0.0	n.c.	0.0	n.c.
Ruddy Duck	97.6	-25	62.7	+56	2.7	-70	4.8	-44
Merganser	.5	-44	.2	+150	0.0	n.c.	0.0	n.c.
Subtotal	98.1	-26	62.9	+56	2.7	-70	4.8	-44
TOTAL DUCKS	2,415.9	-26	2,605.2	-7	24.6	-56	44.0	-44
Coots:								
American Coot	440.4	-33	521.8	-16	.9		0.0	
GRAND TOTAL	2,856.3	-27	3,127.0	-9	25.5	-54	44.0	-42

*1963, 1965 and 1966 not included in average

Table B-11.--Minnesota waterfowl breeding population indices for 1973.

Species	Stratum ^{1/}				State total
	1	2	3	4	
<u>Ducks</u>					
Dabblers:					
Mallard	14,825	17,973	32,156	19,696	84,650
Blackduck	--	--	--	--	--
Gadwall	554	288	1,328	1,185	3,355
American wigeon	69	144	759	4,195	5,167
Green-winged teal	--	--	190	--	190
Blue-winged teal	16,072	14,738	27,793	7,568	66,171
Northern shoveler	139	1,582	2,277	729	4,727
Pintail	831	862	1,707	729	4,129
Wood duck	693	575	2,466	0	3,734
Subtotal	33,183	36,162	68,676	34,102	172,123
Divers:					
Redhead	4,676	1,438	1,328	182	7,624
Canvasback	762	--	1,518	--	2,280
Scaup ^{2/}	2,078	5,823	8,537	14,590	31,028
Ring-necked duck	1,940	1,438	4,174	2,006	9,558
Ruddy duck	1,282	1,725	2,087	--	5,094
American goldeneye ^{3/}	--	144	--	9,757	9,901
Bufflehead	69	--	190	2,006	2,265
Merganser	69	144	--	1,003	1,216
Subtotal	10,876	10,712	17,834	29,544	68,966
Total ducks	44,059	46,874	86,510	63,646	241,089
Coots	10,460	6,614	21,058	91	38,223
TOTAL	54,519	53,488	107,568	63,737	279,312

^{1/}The strata given here represent the following:

- 1 - High density of lake basins
- 2 - Medium density of lake basins
- 3 - Low density of lake basins
- 4 - Roseau and Red Lake bog region in northwestern Minnesota

^{2/}Many scaup are still migrating north and will not breed in Minnesota.

^{3/}American goldeneyes tallied in Strata 4 largely represent nonbreeders on large lakes.

Table B-12.--Indicated waterfowl breeding on selected routes in Minnesota as recorded by both aerial and ground crews in the spring of 1973.

Route	S P E C I E S ^{1/}			
	Mallard A/G	Blue-winged teal A/G	Ring-necked duck A/G	All ducks A/G
Howard Lake	176/140	190/320	0/0	403/492
Herman	34/88	83/212	0/0	139/476
Clinton	18/20	27/90	0/0	65/236
Callaway	22/20	17/44	44/8	138/100
Hitterdahl	16/16	7/16	0/0	23/32
Waubun	20/60	8/24	23/44	71/120
Itasca Park	18/52	6/16	31/44	58/140
Reamer	17/28	0/4	24/8	41/60
All routes	Air 321 Grd. 424	335 726	122 104	938 1656
Aerial visibility	76%	46%	100%	57%

^{1/} The number of each species includes both drakes and hens. In many instances hens are calculated on the basis of a drake being present.

Table B-13.--Estimated number of breeding ducks in Minnesota in the spring of 1973.^{1/}

Species	Unadjusted population index	Visibility	Adjusted population index	Percentage change from 1973
Mallard	84,650	76%	111,000	+ 61%
Blue-winged teal	66,171	46%	144,000	+ 44%
Ring-necked duck ^{2/}	9,558	100%	9,500	- 14%
Other ducks	80,710	51%	158,000	+102%
All ducks	241,089	57%	423,000	+64%

^{1/}This estimate does not include the northeastern portion of the state, the metropolitan area, the Red River Valley, or those portions of southern Minnesota having no lakes of ten acres or more in size within a township.

^{2/}Visibility rates for ring-necked ducks continue to be unrealistically high. The past three years have recorded complete aerial observations for these birds on the selected routes.

Table B-14.--Breeding population estimates for ducks in Minnesota in recent years based on aerial censuses corrected for visibility.

Year	Mallard	Blue-winged teal	All ducks
1968	110,000	160,000	390,000
1969	101,000	162,000	369,000
1970	111,000	153,000	316,000
1971	96,000	153,000	331,000
1972	69,000	100,000	258,000
1973	111,000	144,000	423,000

Table B-15.--Observed number of indicated breeding pairs of ducks per hundred square miles in Minnesota in the spring of 1973.

Stratum	Mallards	Blue-winged teal	All ducks
I	129 \pm 21	115 \pm 20	338 \pm 44
II	107 \pm 23	82 \pm 24	234 \pm 50
III	84 \pm 24	68 \pm 14	199 \pm 43
All	98 \pm 15	79 \pm 11	231 \pm 14

^{1/} Indicated breeding pairs includes all drakes not in flocks.

Table B-16.--Success of mallard nesting in western Minnesota in the spring of 1973, as indicated by status of drakes in early June with comparisons to previous years.

Year	Total drakes tallied	Percentage of drakes		
		Paired	Single	Flocked
1969	507	3.8	6.9	89.3
1970	253	3.6	6.3	90.1
1971*	318	5.7	11.0	83.3
1972	404	4.0	4.5	91.8
1973	449	1.7	7.2	91.6

*Approximately half of the drakes with hens were observed this year in a localized area of southwestern Otter Tail County having a recent history of heavy thundershower activity.

Table B-17.--Duck and coot breeding population indexes by species and stratum.

Species	Stratum				Total	1963-72 Average	Percentage Change		
	W. Wash.	Potholes	Irrigation	Highlands*			1973	1972	From Average
Dabblers									
Mallard	16,210	14,810	13,720	8,380	53,120	71,210	62,450	- 15%	- 25%
Gadwall		3,610	700	240	4,550	4,160	3,610	+ 26%	+ 9%
Wigeon		5,420		1,640	7,060	9,970	8,960	- 21%	- 29%
Green-w. Teal	310	2,170	220	600	3,300	3,490	3,510	- 6%	- 5%
Bl-w. and Cinn. Teal	3,520	13,040	12,620	3,760	32,940	27,330	23,160	+ 42%	+ 21%
Northern shoveler	110	2,520	220	260	3,110	5,180	4,530	- 31%	- 40%
Pintail	400	1,940	370	650	3,360	5,800	4,720	- 29%	- 42%
Wood duck	10,300	80	460	150	10,990	7,750	14,560	- 25%	+ 42%
Subtotal	30,850	43,590	28,310	15,680	118,430	134,890	125,500	- 6%	- 12%
Divers									
Redhead		6,810	1,550	980	9,340	10,310	7,970	+ 17%	- 9%
Canvasback		100			100	490	230	- 57%	- 80%
Scaup		2,790	70	1,280	4,140	5,220	6,780	- 39%	- 21%
Ring-n. Duck		820		1,150	1,970	3,250	1,470	+ 34%	- 39%
Goldeneye		220		2,300	2,520	2,150	2,350	+ 7%	+ 17%
Bufflehead				320	320	920	340	- 6%	- 65%
Ruddy Duck		5,890	1,280	1,280	8,450	7,690	6,640	+ 27%	+ 10%
Subtotal		16,630	2,900	7,310	26,840	30,030	25,780	+ 4%	- 11%
Mergansers									
American Merganser				130	130	240	280	- 54%	- 46%
Hooded Merganser	2,980	60	50	40	3,130	1,540	2,610	+ 20%	+103%
Subtotal	2,980	60	50	170	3,260	1,780	2,890	+ 13%	+ 83%
Unidentified									
			50	530	580	310	30		+ 87%
TOTAL DUCKS									
	33,830	60,280	31,310	23,690	149,110	167,010	154,200	- 3%	- 11%
Coot									
	3,190	18,560	9,720	5,780	37,250	28,410	17,600	+112%	+ 31%
GRAND TOTAL	37,020	78,840	41,030	29,470	186,360	195,420	171,800	+ 8%	- 5%

*The indexes for Palouse-type streams are included with those of the northeastern highlands.

Table B-18.--Waterfowl production indexes.

Species	1963-72		Percent Change	
	1973	1972	From Average	From 1972
<u>Dabblers</u>				
Mallard	142,800	185,700	- 17%	- 23%
Gadwall	11,000	13,500	+ 10%	- 19%
Wigeon	17,100	30,200	- 32%	- 43%
Green-w. Teal	16,800	11,200	+ 68%	+ 50%
Blue-w. and Cinn. Teal	73,600	77,100	+ 20%	- 5%
Northern shoveler	6,500	15,300	- 46%	- 58%
Pintail	7,600	16,800	- 41%	- 55%
Wood Duck	21,200	19,100	- 45%	+ 11%
Subtotal	296,600	368,900	- 13%	- 20%
<u>Divers</u>				
Redhead	16,000	17,500	- 1%	- 9%
Canvasback	200	500	No change	- 60%
Scaup	7,300	7,000	- 21%	+ 4%
Ring-n. Duck	2,900	4,400	+ 32%	- 34%
Goldeneye	7,900	7,700	+ 16%	+ 3%
Bufflehead	300	900	- 25%	- 67%
Ruddy Duck	12,800	11,100	+ 13%	+ 15%
Subtotal	47,400	49,100	+ 3%	- 3%
<u>Mergansers</u>				
American Merganser	300	500	- 40%	- 40%
Hooded Merganser	4,600	3,400	- 23%	+ 35%
Subtotal	4,900	3,900	- 25%	+ 26%
<u>Unidentified</u>	1,100	400		+175%
TOTAL DUCKS	350,000	422,300	- 11%	- 17%
Canada Geese	Not available	12,400		
Coot	55,400	52,300	+ 68%	+ 6%

Table B-19.--Goose production trends 1968-1973.

Transect	Total Broods					Total Young						
	1973	1972	1971	1970	1969	1968	1973	1972	1971	1970	1969	1968
Klamath River	332	262	237	182	220	188	1,496	1,179	1,068	835	990	848
Sprague River	2	23	0	22	17	18	8	105	0	102	76	80
Nuss Lake	7	18	37	16	18	28	33	83	167	74	82	127
Agency Lake	34	28	40	13	11	85	154	120	181	62	48	384
Wocus Bay	36	32	17	29	35	49	163	144	75	130	159	222
Howard Bay	11	6	0	14	16	59	48	28	0	63	73	266
Summer Lake	34	14	29	57	45	36	152	75	131	288	193	165
N. Lake County	14	11	29	30	28	12	63	50	158	152	116	41
Columbia River	4	7	6	9	8	2	12	36	22	55	33	7
G. I. Ranch	32	31	34	30	29	21	144	151	168	148	139	85
Jefferson County	7	5	6	0	2	4	34	20	26	0	9	13
S. Lake County	17	34	25	37	28	2	52	187	99	183	117	7
Ladd Marsh	25	18	7	13	11	5	138	119	34	90	76	27
Howard Prairie	11	9	7	7	12	-	65	54	44	21	45	-
Hyatt Lake	2	3	3	0	7	-	11	14	16	0	41	-
Hanks Marsh	17	36	7	4	18	22	76	172	33	17	80	100
Malheur Refuge	151	362	533	304	219	222	680	1,630	2,400	1,400	985	1,000
Klamath For. Ref.	52	112	4	39	68	64	231	348	17	181	308	290
TOTALS	788	1,011	1,021	806	792	817	3,560	4,523	4,639	3,801	3,570	3,662

Production in 1973 down 21.3 percent from 1972.

Table B-20.--Duck production trends 1969-1973.

Transect	Square Miles	Total Broods					Total Young				
		1973	1972	1971	1970	1969	1973	1972	1971	1970	1969
Klamath Basin	26	255	144	3	41	64	2,261	1,045	21	271	429
Klamath Mgt. Area	2	61	36	15	41	32	436	232	92	282	182
Klamath For. Ref.	4	34	55	9	41	15	198	392	47	280	85
Summer Lake	1	56	29	51	90	147	295	182	360	612	1,045
Upper Klamath Ref.	2	37	43	5	10	7	216	280	31	69	44
N. Lake County	4	7	4	6	5	12	53	32	44	27	69
Hanks Marsh	1	19	29	6	9	13	111	194	38	56	81
Umatilla County	4	21	17	16	10	19	115	99	78	55	94
Wallowa County	4	4	7	9	4	5	30	38	67	25	32
Jefferson County	1	12	5	5	11	10	87	27	32	88	81
Wasco County	-	-	11	-	32	34	-	43	-	176	187
Malheur County	35	45	86	46	90	83	238	535	294	589	512
Columbia County	3	15	34	24	31	30	63	199	147	155	160
Crook County	1	49	29	41	45	44	367	144	311	352	287
Jackson County	12	37	54	51	25	56	201	318	290	173	323
Douglas County	1	2	5	4	10	13	6	27	18	40	53
TOTALS	101	654	588	291	495	584	4,677	3,087	1,870	3,250	3,664

Production in 1973 up 51.5 percent from 1972.

Table B-21.--Duck production by species 1969-1973. (14 transects)

Species	Number of Broods					Number of Young				
	1973	1972	1971	1970	1969	1973	1972	1971	1970	1969
Dabblers:										
Mallard	168	205	126	144	218	1,008	1,245	831	953	1,333
Pintail	37	30	10	24	24	223	192	61	164	151
Gadwall	57	50	32	73	88	362	341	233	528	651
B.W./Cinn. Teal	81	75	64	84	103	552	509	414	544	642
G. W. Teal	1	0	2	9	8	6	0	13	57	46
Wigeon	4	0	0	6	15	19	0	0	39	74
Northern shoveler	6	7	2	4	2	37	48	10	27	15
Wood Duck	21	28	25	38	28	96	152	138	217	151
Subtotal	375	395	261	382	486	2,303	2,487	1,700	2,529	3,063
Divers:										
Redhead	254	137	13	61	45	1,728	1,001	71	401	290
Canvasback	33	6	3	19	4	231	50	32	116	20
Scaup	5	3	0	1	0	36	21	0	7	0
Bufflehead	0	1	0	0	0	0	5	0	0	0
Ruddy duck	46	13	5	21	10	290	73	31	139	60
Subtotal	338	160	21	102	59	2,285	1,150	134	663	370
Miscellaneous:										
A. Merganser	0	1	1	1	0	0	6	5	3	0
H. Merganser	1	3	0	0	0	6	18	0	0	0
Unid. Ducks	16	17	2	10	4	83	60	11	55	21
Subtotal	17	21	3	11	4	89	84	16	58	21
TOTAL	730	576	368	495	549	4,677	3,721	2,352	3,250	3,454

Table B-22.--Summary of Colorado's duck breeding ground population estimates in selected areas, 1973.

Area	Total Est. Breeding Pairs			Percent Change	
	1973	1972	Long Term Average <u>1/</u>	From 1972	From Long Term Average
San Luis Valley	24,942	23,509	27,335	+6.1	-8.8
North Park <u>2/</u>	14,255	8,922	16,176	+59.8	-11.9
South Platte Valley	7,917	7,019	6,062	+12.8	+30.6
Cache la Poudre Valley	5,852	4,630	3,107	+26.4	+88.3
Yampa Valley	2,571	1,857	2,814	+38.4	-8.6
Brown's Park	632	1,339	1,045	-52.8	-39.5
TOTAL	56,169	47,276	56,539	+18.8	-0.7

1/San Luis Valley and North Park averages are based on results of 1964 through 1972 and 1968 through 1972 surveys, respectively, because of changes in survey methods utilized prior to those dates. Figures for the other areas are 19 year averages.

2/Aerial counts corrected by species from visibility ratios obtained in the San Luis Valley.

Table B-23.--Species composition of Colorado's 1973 duck breeding population.

Species	<u>Number of Breeding Pairs</u>			<u>Percent Species Composition</u>		
	1973	1972	1954-72 Average <u>1/</u>	1973	1972	1954-72 Average
Mallard	22,608	22,504	27,825	40.2	47.6	56.2
Blue-winged and Cinnamon Teal	6,374	6,532	4,852	11.3	13.8	9.8
Gadwall	7,400	4,666	5,129	13.2	9.9	10.4
Pintail	5,794	3,073	3,401	10.3	6.5	6.9
Green-winged Teal	1,161	2,094	2,283	2.1	4.4	4.6
Northern shoveler	4,556	4,152	2,183	8.1	8.8	4.4
Redhead	6,416	1,802	1,812	11.4	3.8	3.7
American Wigeon	789	1,331	878	1.4	2.8	1.8
Other Divers	1,071	1,122	1,141	1.9	2.4	2.3
TOTAL	56,169	47,276	49,504			

1/Species composition computed from data from all areas for the 19 year period regardless of changes in survey methods.

Table B-24.--Number of Canada geese observed and estimated production, Moffat County, Colorado, 1973.

Area	Nesting Pairs	Non-nesting Birds	Total Adults	Estimated No. Goslings 1/	Total Birds
Yampa River					
Craig to Juniper Spgs.	7	257	271	18	299
Juniper to Cross Mtn.	10	88	108	37	145
Lily Park	5	116	126	12	138
Subtotal	22 ^{2/}	461	505	67 ^{2/}	582 ^{2/}
Green River					
Brown's Park	40	206	286	151	437
Dinosaur Nat'l Monum. ^{3/}	29	83	141	105	246
Subtotal	69	289	431	256	683
Little Snake River	28	120	176	99	275
GRAND TOTAL	119	870	1,112	422	1,534

^{1/}Calculated using average brood size and number of successful nests.

^{2/}Figures are minimal; extremely difficult to determine number of nesting pairs and gosling production because of high water during and prior to survey.

^{3/}Area first surveyed in 1970; data supplied by F. Neil Folks, Utah State Division of Wildlife Resources.

Table B-25.--Total Canada geese observed, Moffat County, Colorado, 1973.

Area	No. Geese Counted			Percent Change	
	1973	1972	1956-72 Average	From 1972	From 1956-1972 Average
Yampa River	582	513	415	+ 13.5	+ 40.2
Green River					
Brown's Park	437	264	139	+ 65.5	+214.4
Dinosaur Nat'l Monum. ^{1/}	246	300	363	- 18.0	- 32.2
Little Snake River ^{2/}	275	320	246	- 14.1	+ 11.8
TOTAL	1,534	1,397	1,163	+ 9.8	+ 31.9

^{1/}Area first surveyed in 1970.

^{2/}Not included in survey until 1962.

Table B-26.--Estimated number of Canada goose goslings, Moffat County, Colorado 1972.

Area	No. of Goslings			Percent Change	
	1973	1972	1956-1972 Average	From 1972	From 1956-1972 Average
Yampa River	67	117	141	- 42.7	- 52.5
Green River					
Brown's Park	151	139	54	+ 8.6	+179.6
Dinosaur Nat'l Monum. ^{1/}	105	136	121	- 32.8	- 13.2
Little Snake River ^{2/}	99	61	78	+ 62.3	+ 26.9
TOTAL	422	453	394	- 6.8	+ 7.1

^{1/}Area first surveyed in 1970.

^{2/}Not included in survey until 1962.

Table B-27.--Total number of Canada goose goslings produced in north-central Colorado production trend areas, 1973.

Area	No. of Goslings			Percent Change	
	1973	1972	1969-72 Average	From 1972	From 1969-72 Average
Wellington	347	219	269	+58.4	+28.9
Fort Collins	347	318 ^{1/}	267	+ 9.1	+30.0
Loveland	106	74	75	+43.2	+41.3
Boulder	270	199	238	+35.7	+13.4
Denver	380	294	280	+29.2	+35.7
TOTAL	1,450	1,104	1,129	+31.3	+28.4

^{1/}Includes 23 birds raised at Ft. Collins Wildlife Research Station.

Table B-28.--Total number of Canada geese observed in north-central Colorado production trend areas, 1973.

Area	No. of Geese			Percent Change	
	1973	1972	1969-72 Average	From 1972	From 1969-72 Average
Wellington	828	731	853	+13.3	- 2.9
Fort Collins	843	868	747	- 2.9	+12.8
Loveland	283	149	177	+89.9	+59.9
Boulder	827	679	717	+21.8	+15.3
Denver	1,248	1,530	1,387	-18.4	-10.0
TOTAL	4,029	3,957	3,881	+ 1.8	+ 3.8

Table B-29.--Summary, Nebraska Sandhills ground surveys - 1973.

	Class I		Class II		Class III		Single	
	Broods	Ducklings	B	D	B	D	Adults	Pairs
All species	26	177	26	139	20	82	43	20

C. WATERFOWL HARVEST DATA TABLES

TABLE C-1. Factors used to adjust survey statistics to include the activities of junior hunters.

Estimate	Junior hunter adjustment factors			
	Atlantic Flyway	Mississippi Flyway	Central Flyway	Pacific Flyway & Alaska
Ducks bagged (including sea ducks)	1.03621	1.04655	1.06055	1.04985
Geese bagged	1.02402	1.03369	1.04110	1.04508
Coots bagged	1.08302	1.09034	1.10147	1.09415
Days hunted	1.05174	1.07003	1.08559	1.08708
Ducks lost	1.03641	1.05699	1.07053	1.06152
Geese lost	1.01573	1.03738	1.07067	1.07411
Coots lost	1.08247	1.10282	1.10400	1.10685

TABLE C-2. Factors used to adjust survey statistics for memory and prestige bias.

Estimate	Memory and prestige response bias factors			
	Atlantic Flyway	Mississippi Flyway	Central Flyway	Pacific Flyway & Alaska
Ducks bagged (including sea ducks)	0.86925	0.77656	0.73902	0.78952
Geese bagged	0.80428	0.84800	0.86838	0.85159
Coots bagged	0.60692	0.63668	0.78878	0.59248

TABLE C-3. Total retrieved (by species) and unretrieved duck and coot kill in the United States during the 1971 and 1972 hunting seasons (retrieved kill estimates adjusted for response bias; all estimates include kill by junior hunters)^a.

	Season	Atlantic Flyway	Mississippi Flyway	Central Flyway	Pacific Flyway	Alaska	United States total
Retrieved duck kill:							
Mallard	1971	345,700	2,186,900	1,166,000	1,288,000	22,000	5,008,500
	1972	370,200	1,983,100	1,251,800	1,308,900	23,300	4,937,200
	% change	+ 7	- 9	+ 7	+ 2	+ 6	- 1
Domestic mallard	1971	6,200	6,500	400	1,700	100	14,800
	1972	8,200	6,700	1,400	2,300	0	18,500
	% change	+ 32	+ 3	+250	+ 35	--	+ 25
Black duck	1971	288,600	106,000	200	0	0	394,700
	1972	243,000	117,300	1,400	0	0	361,700
	% change	- 16	+ 11	+600	0	0	- 8
Black X mallard	1971	5,600	3,900	0	0	0	9,400
	1972	10,200	7,300	200	0	0	17,700
	% change	+ 82	+ 87	++	0	0	+ 88
Mottled duck	1971	14,600	47,400	52,500	0	0	114,500
	1972	18,700	43,700	85,000	0	0	147,400
	% change	+ 28	- 8	+ 62	0	0	+ 29
Gadwall	1971	16,900	286,600	308,100	134,100	600	746,300
	1972	24,600	304,300	330,700	107,700	500	767,800
	% change	+ 46	+ 6	+ 7	- 20	- 17	+ 3
American wigeon	1971	48,200	191,500	180,300	478,700	13,800	912,600
	1972	66,100	231,100	175,600	412,900	14,800	900,400
	% change	+ 37	+ 21	- 3	- 14	+ 7	- 1

Note: Individual columns rounded separately. Totals do not check exactly as result.

TABLE C-3. Total retrieved (by species) and unretrieved duck and coot kill in the United States during the 1971 and 1972 hunting seasons (retrieved kill estimates adjusted for response bias; all estimates include kill by junior hunters)--continued^a.

	Season	Atlantic Flyway	Mississippi Flyway	Central Flyway	Pacific Flyway	Alaska	United States total
Retrieved duck kill, continued:							
Green-winged teal	1971	147,200	332,500	304,900	483,500	8,500	1,276,500
	1972	117,000	333,100	363,200	550,200	12,000	1,375,500
	% change	- 21	0	+ 19	+ 14	+ 41	+ 8
Blue-winged and cinnamon teal	1971	43,600	578,900	212,900	65,700	0	901,100
	1972	75,300	450,400	205,400	102,400	200	833,600
	% change	+ 73	- 22	- 4	+ 56	++	- 7
Northern shoveler	1971	11,500	90,400	84,500	237,400	2,900	426,800
	1972	12,800	109,700	132,700	215,000	4,700	475,000
	% change	+ 11	+ 21	+ 57	- 9	+ 62	+ 11
Pintail	1971	26,200	124,700	156,700	970,000	17,700	1,295,400
	1972	25,200	144,000	165,000	939,400	24,900	1,298,500
	% change	- 4	+ 15	+ 5	- 3	+ 41	0
Wood duck	1971	281,600	571,200	37,600	33,100	0	923,500
	1972	305,000	538,400	46,600	33,100	0	923,200
	% change	+ 8	- 6	+ 24	0	0	0
Redhead	1971	23,000	86,000	59,100	51,600	0	219,700
	1972	1,800	11,100	13,000	26,800	0	52,600
	% change	- 92	- 87	- 78	- 48	0	- 76
Canvasback	1971	32,800	39,100	14,400	55,000	100	141,300
	1972	200	900	800	2,100	300	4,400
	% change	- 99	- 98	- 94	- 96	+200	- 97

Note: Individual columns rounded separately. Totals do not check exactly as result.

TABLE C-3. Total retrieved (by species) and unretrieved duck and coot kill in the United States during the 1971 and 1972 hunting seasons (retrieved kill estimates adjusted for response bias; all estimates include kill by junior hunters)--continued^a.

	Season	Atlantic Flyway	Mississippi Flyway	Central Flyway	Pacific Flyway	Alaska	United States total
Retrieved duck kill, continued:							
Greater scaup	1971	55,500	26,900	1,800	17,500	800	102,500
	1972	80,000	35,000	3,100	19,500	1,900	139,400
	% change	+ 44	+ 30	+ 72	+ 11	+138	+ 36
Lesser scaup	1971	84,700	320,400	77,500	32,700	1,200	516,400
	1972	29,400	325,400	100,200	21,500	2,600	479,100
	% change	- 65	+ 2	+ 29	- 34	+117	- 7
Ring-necked duck	1971	79,500	300,100	26,700	18,200	100	424,600
	1972	67,300	221,900	37,300	26,600	100	353,100
	% change	- 15	- 26	+ 40	+ 46	0	- 17
Goldeneye	1971	26,300	37,300	5,700	18,900	1,400	89,600
	1972	34,300	48,400	5,200	15,800	1,400	105,200
	% change	+ 30	+ 30	- 9	- 16	0	+ 17
Bufflehead	1971	62,200	49,700	19,500	30,700	800	162,900
	1972	55,900	72,300	10,300	21,900	1,100	161,500
	% change	- 10	+ 45	- 47	- 29	+ 38	- 1
Ruddy duck	1971	12,200	27,800	12,500	41,200	0	93,600
	1972	11,300	36,700	17,400	48,900	0	114,300
	% change	- 7	+ 32	+ 39	+ 19	0	+ 22
Oldsquaw	1971	14,300	1,900	0	200	1,200	17,500
	1972	13,300	1,200	100	300	tr.	15,000
	% change	- 7	- 37	++	+ 50	--	- 14

Note: Individual columns rounded separately. Totals do not check exactly as result.

TABLE C-3. Total retrieved (by species) and unretrieved duck and coot kill in the United States during the 1971 and 1972 hunting seasons (retrieved kill estimates adjusted for response bias; all estimates include kill by junior hunters)--continued^a.

Season	Atlantic Flyway	Mississippi Flyway	Central Flyway	Pacific Flyway	Alaska	United States total
Retrieved duck kill, continued:						
Eiders						
1971	13,900	0	0	0	200	14,100
1972	18,500	0	0	0	0	18,500
% change	+ 33	0	0	0	--	+ 31
Scoters						
1971	48,400	4,500	1,100	2,300	1,200	57,500
1972	40,200	2,900	0	2,000	700	45,900
% change	- 17	- 36	--	- 13	- 42	- 20
Hooded merganser						
1971	21,800	28,200	4,300	2,600	100	56,900
1972	15,600	32,300	2,100	5,900	0	55,900
% change	- 28	+ 15	- 51	+127	--	- 2
Other mergansers						
1971	10,400	4,700	5,100	6,400	300	26,900
1972	11,900	10,200	1,500	7,000	400	31,100
% change	+ 14	+117	- 71	+ 9	+ 33	+ 16
Other ducks						
1971	1,100	1,000	300	300	200	2,900
1972	4,900	600	2,300	1,500	100	9,400
% change	+345	- 40	+667	+400	- 50	+224
Total:						
1971	1,721,800	5,454,000	2,732,300	3,969,600	73,100	13,950,500
1972	1,660,700	5,068,200	2,952,200	3,871,700	89,000	13,641,800
% change	- 4	- 7	+ 8	- 2	+ 22	- 2

Note: Individual columns rounded separately. Totals do not check exactly as result.

TABLE C-3. Total retrieved (by species) and unretrieved duck and coot kill in the United States during the 1971 and 1972 hunting seasons (retrieved kill estimates adjusted for response bias; all estimates include kill by junior hunters)--continued^a.

Season	Atlantic Flyway	Mississippi Flyway	Central Flyway	Pacific Flyway	Alaska	United States total
Unretrieved duck kill:						
1971	412,300	1,303,500	630,200	723,400	11,700	3,081,200
1972	415,500	1,302,700	654,600	661,600	15,000	3,049,400
% change	+ 1	0	+ 4	- 9	+ 28	- 1
Total duck kill:						
1971	2,134,100	6,757,500	3,362,200	4,693,100	84,800	17,031,600
1972	2,076,300	6,370,900	3,606,800	4,533,300	104,000	16,691,200
% change	- 3	- 6	+ 7	- 3	+ 23	- 2
Retrieved coot kill:						
1971	161,900	428,300	78,900	151,200	900	821,300
1972	107,200	623,500	104,900	128,800	500	964,900
% change	- 34	+ 46	+ 33	- 15	- 44	+ 17
Unretrieved coot kill:						
1971	46,700	120,900	40,900	86,400	300	295,200
1972	30,700	163,300	46,300	45,900	100	286,300
% change	- 34	+ 35	+ 13	- 47	- 67	- 3
Total coot kill:						
1971	208,600	549,200	119,800	237,500	1,300	1,116,400
1972	138,000	786,900	151,200	174,700	600	1,251,200
% change	- 34	+ 43	+ 26	- 26	- 54	+ 12

Note: Individual columns rounded separately. Totals do not check exactly as result.

^aIncludes ducks bagged during all special duck seasons.

TABLE C-4. Total retrieved (by species) and unretrieved goose kill in the United States during the 1971 and 1972 hunting seasons (retrieved kill estimates adjusted for response bias; all estimates include kill by junior hunters).

	Season	United States				United States total
		Atlantic Flyway	Mississippi Flyway	Central Flyway	Pacific Flyway	
Retrieved goose kill:						
Canada goose ^a	1971	258,200	194,800	192,200	179,200	836,600
	1972	206,200	167,500	117,400	249,300	747,800
	% change	- 20	- 14	- 39	+ 39	- 11
Snow goose	1971	100	52,100	116,500	112,900 ^b	282,300
	1972	0	49,000	109,500	45,300 ^b	204,100
	% change	--	- 6	- 6	- 60	- 28
Blue goose	1971	0	113,400	59,400	0	172,800
	1972	0	58,700	40,700	0	99,400
	% change	0	- 48	- 31	0	- 42
White-fronted goose	1971	0	20,000	38,300	35,400	96,600
	1972	0	11,200	41,000	54,400	107,200
	% change	0	- 44	+ 7	+ 54	+ 11
Brant	1971	79,100	0	0	2,900	82,400
	1972	0	0	0	15,100	15,400
	% change	--	0	0	+421	- 81

Note: Individual columns rounded separately. Totals do not check exactly as result.

TABLE C-4. Total retrieved (by species) and unretrieved goose kill in the United States during the 1971 and 1972 hunting seasons (retrieved kill estimates adjusted for response bias; all estimates include kill by junior hunters)--continued.

Season	Atlantic Flyway	Mississippi Flyway	Central Flyway	Pacific Flyway	Alaska	United States total
Retrieved goose kill, continued:						
Others and unknown						
1971	0	0	0	0	700 ^c	700
1972	0	0	0	0	300 ^c	300
% change	0	0	0	0	- 57	- 57
Total:						
1971	337,400	380,300	406,500	330,400	16,800	1,471,300
1972	206,200	286,300	308,600	364,200	9,000	1,174,300
% change	- 39	- 25	- 24	+ 10	- 46	- 20
Unretrieved kill:						
1971	44,300	55,300	68,800	56,100	2,600	227,100
1972	30,400	47,400	53,900	48,300	1,600	181,600
% change	- 31	- 14	- 22	- 14	- 38	- 20
Total goose kill:						
1971	381,700	435,600	475,300	386,500	19,400	1,698,500
1972	236,600	333,700	362,600	412,500	10,600	1,355,900
% change	- 38	- 23	- 24	+ 7	- 45	- 20

Note: Individual columns rounded separately. Totals do not check exactly as result.

^aIncludes all subspecies.

^bIncludes Ross' goose.

^cEmperor goose.

TABLE C-5. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN THE ATLANTIC FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS.

DUCK SPECIES COMPOSITION	CONNECTICUT			DELAWARE			FLORIDA			GEORGIA		
	1971	1972		1971	1972		1971	1972		1971	1972	
			%			%			%			%
MALLARD	29.25%	27.46%		22.85%	39.46%		1.06%	1.70%		24.70%	23.50%	
DOMESTIC MALLARD	0.37	1.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	
BLACK DUCK	24.13	26.37	19.90	19.90	22.86	0.53	0.53	0.66	0.53	2.96	2.79	
BLACK X MALLARD	1.28	1.70	0.25	0.25	0.18	0.07	0.07	0.00	0.00	0.00	0.29	
MOTTLED DUCK	0.00	0.00	0.00	0.00	0.00	7.97	7.97	9.43	9.43	0.00	0.00	
GADWALL	0.00	0.61	4.18	4.18	1.61	1.06	1.06	2.10	2.10	0.87	1.47	
AMERICAN WIGEON	0.73	0.73	2.21	2.21	2.68	3.06	3.06	5.63	5.63	1.04	0.59	
GREEN-WINGED TEAL	5.67	4.58	24.82	24.82	21.07	6.91	6.91	6.42	6.42	3.13	3.67	
BLUE-WINGED/CINNAMON TEAL	0.73	0.24	2.21	2.21	0.00	9.44	9.44	17.62	17.62	0.52	1.32	
NORTHERN SHOVELER	0.00	0.00	3.65	3.65	1.25	1.53	1.53	1.31	1.31	1.57	1.32	
PINTAIL	0.00	0.24	2.21	2.21	4.46	3.12	3.12	1.70	1.70	0.70	0.59	
WOOD DUCK	10.05	8.87	1.97	1.97	0.71	13.56	13.56	17.49	17.49	55.30	58.15	
REDHEAD	0.18	0.00	0.25	0.25	0.00	1.60	1.60	0.33	0.33	0.00	0.00	
CANVASBACK	2.01	0.00	0.25	0.25	0.00	0.33	0.33	0.00	0.00	0.17	0.00	
GREATER SCAUP	8.23	12.27	0.98	0.98	1.61	1.86	1.86	0.98	0.98	0.17	0.00	
LESSER SCAUP	0.73	0.97	2.46	2.46	1.07	14.75	14.75	4.65	4.65	1.39	0.00	
RING-NECKED DUCK	0.00	0.24	1.23	1.23	0.36	26.38	26.38	20.83	20.83	3.83	3.23	
GOLDFEYES	0.73	0.73	0.25	0.25	0.71	0.13	0.13	0.07	0.07	0.17	0.00	
BUFFLEHEAD	4.20	2.92	5.65	5.65	0.54	1.00	1.00	0.92	0.92	0.00	0.15	
RUDDY DUCK	0.00	0.00	0.49	0.49	0.00	0.93	0.93	2.69	2.69	0.17	0.59	
OLDSQUAW	0.24	0.52	0.74	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
EIDERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SCOTERS	9.47	9.31	3.19	3.19	1.43	0.07	0.07	0.13	0.13	0.00	0.00	
HOODED Mergansers	0.91	0.24	0.25	0.25	0.00	2.79	2.79	2.36	2.36	2.78	2.20	
OTHER Mergansers	1.10	0.49	0.00	0.00	0.00	1.26	1.26	0.79	0.79	0.52	0.00	
OTHER DUCKS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.23	2.23	0.00	0.00	
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
DUCK HARVEST (RETRIEVED KILL)	40,216	37,643	57,503	57,503	55,465	182,720	182,720	196,211	196,211	66,473	59,717	
PERCENT CHANGE		-6%			-4%			+7%	+7%		-10%	
SEASONAL DUCK HARVEST PER ADULT HUNTER	2.85	2.86	4.33	4.33	4.67	5.33	5.33	6.74	6.74	4.10	4.47	
PERCENT CHANGE		0%			+8%			+26%	+26%		+9%	

GOOSE SPECIES COMPOSITION

CANADA GOOSE	93.33%	100.00%	99.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
SNOW GOOSE	3.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
BLUE GOOSE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
WHITE-FRONTED GOOSE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
BRANT	3.33%	0.00%	1.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
OTHER GESE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
TOTAL	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

GOOSE HARVEST (RETRIEVED KILL)	1,644	1,978	40,696	20,302	613	1,268	241	130
PERCENT CHANGE		+20%		-50%		+107%		-46%

SEASONAL GOOSE HARVEST PER ADULT HUNTER	0.12	0.15	3.10	1.73	0.02	0.04	0.02	0.01
PERCENT CHANGE		+29%		-44%		+144%		-33%

COOT HARVEST (RETRIEVED KILL)	881	615	1,823	1,019	44,266	36,256	4,036	2,872
PERCENT CHANGE		-30%		-44%		-18%		-29%

SEASONAL COOT HARVEST PER ADULT HUNTER	0.06	0.04	0.13	0.08	1.24	1.19	0.24	0.21
PERCENT CHANGE		-25%		-37%		-4%		-13%

TOTAL HUNTER DAYS	75,272	66,244	100,022	91,194	177,340	166,244	85,571	64,015
PERCENT CHANGE		-12%		-9%		-6%		-25%

DAYS PER ADULT HUNTER	5.24	4.95	7.41	7.56	5.10	5.63	5.19	4.72
PERCENT CHANGE		-6%		+2%		+10%		-9%

TOTAL DUCK STAMPS SOLD	14,069	13,165	12,987	11,549	33,576	28,383	15,750	13,059
PERCENT CHANGE		-6%		-11%		-15%		-17%

PERCENT SOLD TO NON-HUNTERS	2.97%	3.27%	1.21%	0.72%	1.50%	1.03%	0.55%	1.23%
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TOTAL ADULT HUNTERS (POTENTIAL)	13,651	12,735	12,830	11,466	33,072	28,091	15,663	12,898
PERCENT CHANGE		-7%		-11%		-15%		-18%

PERCENT ACTIVE ADULT HUNTERS	77.6%	76.9%	83.0%	86.8%	79.5%	81.7%	83.7%	86.5%
PERCENT SUCCESSFUL ADULT HUNTERS	50.9%	53.8%	66.4%	67.4%	62.1%	65.7%	60.3%	63.0%

SAMPLE SIZES								
DUCK WINGS	576	780	407	560	1,505	1,527	575	681
GOOSE TAILS	30	22	300	288	0	0	0	0
QUESTIONNAIRES	1,010	579	626	313	1,499	1,074	585	352

TABLE C-5. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN THE ATLANTIC FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS--CONTINUED.

DUCK SPECIES COMPOSITION	MAINE		MARYLAND ^a		MASSACHUSETTS		NEW HAMPSHIRE	
	1971	1972	1971	1972	1971	1972	1971	1972
MALLARD	2.44%	4.01%	25.00%	34.85%	12.12%	15.50%	10.20%	13.13%
DOMESTIC MALLARD	0.61	0.35	0.63	0.63	0.44	0.38	0.43	0.26
BLACK DUCK	33.44	31.00	17.61	20.41	34.53	36.35	38.27	48.58
BLACK X MALLARD	0.46	0.83	0.31	0.38	0.70	0.76	0.00	0.79
MOTTLED DUCK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GADWALL	0.00	0.00	0.63	0.63	0.00	0.08	0.00	0.00
AMERICAN WIGEON	0.00	0.24	3.77	2.54	0.00	0.84	0.00	0.00
GREEN-WINGED TEAL	22.42	13.03	3.70	3.30	5.84	3.82	9.78	4.99
BLUE-WINGED/CINNAMON TEAL	4.90	7.38	0.79	0.76	0.44	0.15	2.98	4.46
NORTHERN SHOVELER	0.00	0.00	0.31	0.13	0.00	0.15	0.00	0.00
PINTAIL	0.46	0.35	1.81	2.16	2.17	0.23	0.43	0.00
WOOD DUCK	5.96	7.43	2.28	3.42	12.99	9.32	22.96	20.22
REDHEAD	0.00	0.00	4.01	0.00	0.52	0.00	0.00	0.00
CANVASBACK	0.00	0.00	6.84	0.00	0.44	0.00	0.00	0.00
GREATER SCAUP	0.00	0.35	5.82	3.68	3.49	2.06	0.00	0.53
LESSER SCAUP	0.31	0.12	9.83	1.52	0.70	0.38	0.00	0.00
RING-NECKED DUCK	1.83	3.77	0.63	0.38	0.35	0.61	1.70	0.79
GOLDENEYES	2.14	3.54	2.75	5.96	1.74	3.05	0.85	1.05
BUFFLEHEAD	3.67	5.42	5.66	7.61	2.97	3.74	1.70	1.31
RUDDY DUCK	0.00	0.12	0.47	0.51	0.00	0.08	0.00	0.00
OLDSQUAW	0.18	1.78	2.48	2.97	0.34	0.64	0.85	0.18
FIDERS	9.36	9.50	0.00	0.00	6.71	12.15	0.00	0.00
SCOTERS	10.31	8.09	3.64	6.92	14.66	7.41	7.31	2.13
HOODED Mergansers	0.76	1.89	0.55	0.25	0.52	0.23	2.13	1.58
OTHER Mergansers	0.76	0.83	0.47	1.01	0.35	2.06	0.43	0.00
OTHER DUCKS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
DUCK HARVEST (RETRIEVED KILL)	94,658	85,629	137,166	110,721	75,636	85,235	25,206	21,600
PERCENT CHANGE		-10%		-19%		+13%		-14%
SEASONAL DUCK HARVEST PER ADULT HUNTER	5.08	5.32	3.88	3.37	2.90	3.25	2.46	2.35
PERCENT CHANGE		+5%		-13%		+12%		-5%

GCCSE SPECIES COMPOSITION

CANADA GOOSE	100.00%	95.16%	100.00%	97.10%	100.00%	100.00%	100.00%
SNOW GOOSE	0.00	0.00	0.00	1.45	0.00	0.00	0.00
BLUE GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WHITE-FRONTED GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BRANT	0.00	4.84	0.00	1.45	0.00	0.00	0.00
OTHER GEESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>TOTAL</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>

GCCSE HARVEST (RETRIEVED KILL)	2,527	86,779	86,372	5,436	4,104	1,093	746
PERCENT CHANGE	-12%	0%	0%	-25%	-25%	0.11	-32%
SEASONAL GCCSE HARVEST PER ADULT HUNTER	0.14	2.49	2.66	0.21	0.16	0.11	0.08
PERCENT CHANGE	+2%	+7%	+7%	-25%	-25%	0.04	-24%

COOT HARVEST (RETRIEVED KILL)	4,453	1,986	1,183	2,172	1,067	395	138
PERCENT CHANGE	-60%	-40%	-40%	-51%	-51%	0.04	-65%

SEASONAL COOT HARVEST PER ADULT HUNTER	0.23	0.05	0.03	0.08	0.04	0.04	0.01
PERCENT CHANGE	-53%	-37%	-37%	-51%	-51%	0.04	-62%

TOTAL HUNTER DAYS	100,906	263,011	239,455	146,461	166,755	60,230	53,235
PERCENT CHANGE	-9%	-9%	-9%	+14%	+14%	5.78	-12%

DAYS PER ADULT HUNTER	5.30	7.33	7.19	5.48	6.22	5.78	5.70
PERCENT CHANGE	+5%	-2%	-2%	+14%	+14%	0.63%	-1%

TOTAL DUCK STAMPS SOLD	18,534	32,646	30,749	26,106	26,070	9,973	9,094
PERCENT CHANGE	-15%	-6%	-6%	0%	0%	9.910	-9%

PERCENT SOLD TO NON-HUNTERS	2.23%	2.12%	1.92%	2.65%	2.29%	0.63%	2.41%
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TOTAL ADULT HUNTERS (POTENTIAL)	18,121	34,097	31,667	25,404	25,473	9,910	8,875
PERCENT CHANGE	-14%	-7%	-7%	0%	0%	81.5%	-10%

PERCENT ACTIVE ADULT HUNTERS	82.9%	85.2%	84.1%	79.2%	83.7%	81.5%	84.9%
PERCENT SUCCESSFUL ADULT HUNTERS	65.2%	66.0%	62.6%	50.6%	56.3%	53.6%	54.4%

<u>SAMPLE SIZES</u>							
DUCK WINGS	667	1,300	781	1,280	1,233	235	385
GOOSE TAILS	21	1,124	771	69	87	13	10
QUESTIONNAIRES	844	1,661	1,328	1,079	936	415	427

TABLE C-5. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN THE ATLANTIC FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS--CONTINUED.

DUCK SPECIES-COMPOSITION	NEW JERSEY		NEW YORK		NORTH CAROLINA ^a		PENNSYLVANIA	
	1971	1972	1971	1972	1971	1972	1971	1972
MALLARD	19.18%	21.44%	26.64%	28.71%	12.46%	17.93%	43.57%	43.64%
DOMESTIC MALLARD	0.30	0.85	0.45	0.32	0.47	0.52	0.58	1.89
BLACK DUCK	34.25	22.78	16.03	11.41	6.93	8.90	11.80	11.83
BLACK X MALLARD	0.00	1.46	0.58	0.84	0.00	0.26	0.38	0.60
MOTTLED CUCK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GADWALL	0.00	1.34	0.52	0.71	1.65	1.96	0.48	0.70
AMERICAN WIGEON	1.22	1.83	1.88	2.01	8.11	7.85	1.44	1.69
GREEN-WINGED TEAL	13.70	8.65	7.18	5.57	6.11	9.16	5.09	5.37
BLUE-WINGED/CINNAMON TEAL	0.91	1.34	2.52	6.29	1.18	0.26	2.11	3.38
NORTHERN SHOVELER	0.15	0.24	0.13	0.26	0.12	0.52	0.58	0.40
PINTAIL	2.28	0.85	0.58	0.71	3.64	4.58	0.77	0.50
WOOD DUCK	8.22	7.92	15.19	19.12	27.26	30.89	23.32	23.46
RDHEAD	0.61	0.12	0.97	0.13	2.35	0.13	0.67	0.20
CANVASBACK	1.52	0.00	1.49	0.00	2.47	0.13	0.58	0.00
GREATER SCAUP	4.41	11.33	6.47	10.82	1.76	1.31	1.25	2.09
LESSER SCAUP	1.67	2.80	3.62	1.36	7.87	2.62	0.67	0.00
RING-NECKED DUCK	0.15	0.49	1.29	0.32	7.29	6.02	0.58	0.70
GOLDENEYES	0.46	0.61	3.94	3.50	0.47	0.39	0.29	0.60
BUFFLEHEAD	7.46	9.62	4.59	2.72	3.88	3.53	1.44	1.29
RUDDY DUCK	0.91	0.24	0.19	0.07	2.00	0.52	0.86	0.50
OLDSQUAW	1.52	3.53	1.37	0.32	0.12	0.13	1.44	0.20
FIDERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SCOTTERS	0.15	0.37	2.68	3.24	0.59	0.79	1.63	0.70
HOODED Mergansers	0.76	0.85	1.16	0.52	2.00	1.18	0.29	0.10
Other Mergansers	0.15	1.34	0.52	0.97	1.29	0.39	0.19	0.10
OTHER DUCKS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
DUCK HARVEST (RETRIEVED KILL)	160,291	127,993	309,752	307,611	134,036	127,227	164,005	137,523
PERCENT CHANGE		-20%		-1%		-5%		-16%
SEASONAL DUCK HARVEST PER ADULT HUNTER	3.63	3.53	2.62	2.96	4.25	4.87	1.84	1.91
PERCENT CHANGE		-3%		+13%		+15%		+4%

GOOSE SPECIES COMPOSITION

CANADA GOOSE	19.60%	100.00%	74.64%	100.00%	100.00%	98.57%	100.00%
SACW GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BLUE GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WHITE-FRONTED GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BRANT	80.41	0.00	25.36	0.00	0.00	1.43	0.00
OTHER GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>TOTAL</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>

GOOSE HARVEST (RETRIEVED KILL)	61,163	12,856	83,432	42,870	6,268	26,550	14,376
PERCENT CHANGE		-75%		-49%	-39%		-46%
SEASONAL GOOSE HARVEST PFR ADULT HUNTER	1.40	0.36	0.71	0.42	0.24	0.30	0.20
PERCENT CHANGE		-74%		-41%	-26%		-33%

COOT HARVEST (RETRIEVED KILL)	4,225	3,482	9,458	6,038	10,335	11,581	13,093
PERCENT CHANGE		-18%		-36%	-76%		+13%
SEASONAL COOT HARVEST PFR ADULT HUNTER	0.09	0.09	0.08	0.06	0.38	0.12	0.17
PERCENT CHANGE		0%		-26%	-71%		+40%

TOTAL HUNTER DAYS	258,934	210,468	675,298	622,086	166,679	428,472	366,648
PERCENT CHANGE		-15%		-8%	-16%		-14%
DAYS PER ADULT HUNTER	5.78	5.72	5.61	5.89	6.28	4.72	5.03
PERCENT CHANGE		-1%		+5%	+1%		+6%

TOTAL DUCK STAMPS SOLD	43,673	35,980	116,709	103,526	25,233	87,661	70,657
PERCENT CHANGE		-18%		-11%	-18%		-19%
PERCENT SOLD TO NON-HUNTERS	2.52%	2.75%	2.00%	3.03%	0.39%	1.62%	1.81%

TOTAL ADULT HUNTERS (POTENTIAL)	42,572	34,991	114,375	100,389	25,239	86,241	69,378
PERCENT CHANGE		-18%		-12%	-17%		-20%
PERCENT ACTIVE ADULT HUNTERS	84.1%	85.2%	79.6%	80.7%	86.2%	85.6%	85.9%
PERCENT SUCCESSFUL ADULT HUNTERS	57.6%	60.3%	53.4%	55.2%	65.1%	54.3%	53.2%

<u>SAMPLE SIZES</u>							
DUCK WINGS	657	821	1,558	1,642	764	1,040	1,006
GOOSE TAILS	148	52	347	195	39	140	110
QUESTIONNAIRES	1,503	1,299	3,833	2,783	762	2,683	1,456

TABLE C-5. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN THE ATLANTIC FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS--CONTINUED.

DUCK SPECIES COMPOSITION	RHODE ISLAND			SOUTH CAROLINA			VERMONT			VIRGINIA ^a		
	1971	1972		1971	1972		1971	1972		1971	1972	
MALLARD	15.40%	15.11%	20.66%	16.11%	17.90%	15.28%	17.90%	19.37%	26.70%	19.37%	26.70%	
DOMESTIC MALLARD	0.41	0.34	0.30	0.11	0.55	0.00	0.55	0.30	0.43	0.30	0.43	
BLACK DUCK	33.63	18.47	6.18	4.69	25.65	24.72	25.65	15.20	13.51	15.20	13.51	
BLACK X MALLARD	0.41	1.34	0.30	0.46	0.67	0.23	0.67	0.45	0.64	0.45	0.64	
MOTTLED DUCK	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
GADWALL	0.41	0.00	3.77	4.11	0.00	0.00	0.00	2.35	3.94	2.35	3.94	
AMERICAN WIGEON	1.62	2.02	4.22	8.00	0.00	0.00	0.00	8.47	14.04	8.47	14.04	
GREEN-WINGED TEAL	8.51	4.03	9.80	9.60	11.44	16.85	11.44	3.63	4.36	3.63	4.36	
BLUE-WINGED/CINNAMON TEAL	0.81	1.68	1.36	1.49	8.49	4.05	8.49	0.23	0.43	0.23	0.43	
NORTHERN SHOVELER	0.00	0.00	2.56	4.34	0.19	0.00	0.19	0.68	0.43	0.68	0.43	
PINTAIL	0.00	0.34	2.11	2.86	0.74	0.67	0.74	1.44	1.81	1.44	1.81	
WOOD DUCK	4.46	3.65	35.14	38.97	20.66	24.94	20.66	6.96	7.98	6.96	7.98	
REDHEAD	0.41	0.00	0.45	0.00	0.00	0.00	0.00	4.69	0.11	4.69	0.11	
CANVASBACK	1.62	0.00	0.91	0.00	0.00	0.00	0.00	8.02	0.00	8.02	0.00	
GREATER SCAUP	12.97	34.92	0.45	0.00	0.19	1.12	0.19	2.27	6.17	2.27	6.17	
LESSER SCAUP	5.67	5.04	2.87	0.69	0.19	0.45	0.19	9.91	3.40	9.91	3.40	
RING-NECKED DUCK	0.00	0.34	5.58	3.89	4.61	2.02	4.61	2.95	2.45	2.95	2.45	
GOLDFEYES	1.22	2.35	0.30	0.11	6.83	4.72	6.83	1.66	4.26	1.66	4.26	
BUFFLEHEAD	2.03	2.69	0.45	1.71	0.92	1.12	0.92	5.90	4.89	5.90	4.89	
RUDDY DUCK	0.00	0.00	0.00	1.49	0.37	0.90	0.37	2.65	0.85	2.65	0.85	
GLDSQUAW	0.00	0.00	0.00	0.00	0.00	0.45	0.00	0.30	1.38	0.30	1.38	
FIDERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SCOTTERS	10.05	3.63	0.00	0.00	0.19	1.35	0.19	0.38	0.96	0.38	0.96	
HODDED Mergansers	0.41	0.34	2.11	0.91	0.74	0.90	0.74	1.21	1.06	1.21	1.06	
OTHER Mergansers	0.00	3.69	0.45	0.23	0.00	0.23	0.00	0.98	0.21	0.98	0.21	
CIRRE DUCKS	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	160.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
DUCK HARVEST (RETRIEVED KILL)	20,385	17,530	102,581	128,043	31,502	36,578	31,502	110,431	126,523	110,431	126,523	
PERCENT CHANGE		-14%		+25%	-14%		-14%		+15%		+15%	
SEASONAL DUCK HARVEST PER ADULT HUNTER	4.65	4.75	4.80	6.87	3.83	4.06	3.83	5.19	5.85	5.19	5.85	
PERCENT CHANGE		+3%		+43%	-6%		-6%		+13%		+13%	

GOOSE SPECIES COMPOSITION

CANADA GOOSE	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	70.27%	100.00%
SNOW GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BLUE GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WHITE-FRONTED GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.73	0.00
OTHER GESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

GOOSE HARVEST (RETRIEVED KILL)	677	862	809	1,275	3,170	1,152	12,258	9,355
PERCENT CHANGE		+27%		+58%		-64%		-24%

SEASONAL GOOSE HARVEST PER ADULT HUNTER	0.16	0.24	0.04	0.07	0.36	0.14	0.58	0.44
PERCENT CHANGE		+53%		+82%		-60%		-25%

COOT HARVEST (RETRIEVED KILL)	750	414	8,315	5,719	241	38	23,922	23,033
PERCENT CHANGE		-45%		-31%		-84%		-4%

SEASONAL COOT HARVEST PER ADULT HUNTER	0.16	0.11	0.37	0.29	0.03	0.00	1.08	1.02
PERCENT CHANGE		-34%		-21%		-84%		-5%

TOTAL HUNTER DAYS	33,427	30,157	151,895	137,007	56,605	45,651	123,782	131,482
PERCENT CHANGE		-10%		-10%		-19%		+6%

DAYS PER ADULT HUNTER	7.48	8.11	7.00	7.24	6.18	5.46	5.73	5.99
PERCENT CHANGE		+8%		+3%		-12%		+4%

TOTAL DUCK STAMPS SOLD	4,354	3,618	20,731	18,224	8,758	7,982	19,757	20,693
PERCENT CHANGE		-17%		-12%		-9%		+5%

PERCENT SOLD TO NON-HUNTERS	2.39%	2.26%	0.49%	1.32%	0.63%	0.44%	1.48%	2.76%
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TOTAL ADULT HUNTERS (POTENTIAL)	4,250	3,536	20,629	17,983	8,703	7,947	20,538	20,877
PERCENT CHANGE		-17%		-13%		-9%		+2%

PERCENT ACTIVE ADULT HUNTERS	76.4%	79.1%	87.0%	88.2%	88.4%	83.7%	82.2%	82.0%
PERCENT SUCCESSFUL ADULT HUNTERS	59.4%	57.9%	66.1%	71.4%	60.5%	64.8%	63.8%	63.7%

SAMPLE SIZES

DUCK WINGS	267	305	663	875	445	542	1,322	940
GOOSE TAILS	32	20	1	2	42	25	74	32
QUESTIONNAIRES	266	173	742	506	387	434	975	774

TABLE C-5. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN THE ATLANTIC FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS--CONTINUED.

DUCK SPECIES--COMPOSITION	WEST VIRGINIA		ATLANTIC FLYWAY TOTAL	
	1971	1972	1971	1972
MALLARD	32.55%	26.44%	20.08%	22.29%
DOMESTIC MALLARD	0.00	0.38	0.36	0.49
BLACK DUCK	16.04	12.64	16.76	14.63
BLACK X MALLARD	0.00	0.38	0.32	0.62
MOTTLED DUCK	0.00	0.00	0.85	1.12
GAOWALL	0.00	2.30	0.98	1.48
AMERICAN WIGEON	4.72	0.77	2.80	3.98
GREEN-WINGED TEAL	1.89	2.68	8.55	7.04
BLUES-WINGED/CINNAMON TEAL	0.94	2.68	2.53	4.53
NORTHERN SHOVELER	0.00	0.00	0.67	0.77
PINTAIL	0.00	0.77	1.52	1.52
WOOD DUCK	41.98	49.04	16.36	18.37
REDHEAD	0.00	0.00	1.34	0.11
CANVASBACK	0.00	0.00	1.91	0.01
GREATER SCAUP	0.00	0.00	3.23	4.82
LESSER SCAUP	0.47	0.00	4.92	1.77
RING-NECKED DUCK	0.94	0.38	4.62	4.05
GOLDENEYES	0.00	1.15	1.53	2.06
BUFFLEHEAD	0.00	0.00	3.61	3.37
RUDDY DUCK	0.00	0.00	0.71	0.68
OLDSQUAW	0.00	0.00	0.83	0.80
FIDERS	0.00	0.00	0.81	1.11
SCOTERS	0.00	0.38	2.81	2.42
HOODED MERGANSERS	0.00	0.00	1.26	0.94
OTHER MERGANSERS	0.47	0.00	0.60	0.71
OTHER DUCKS	0.00	0.00	0.06	0.29
TOTAL	100.00	100.00	100.00	100.00
DUCK HARVEST (RETRIEVED KILL)	4,098	4,558	1,721,775	1,660,731
PERCENT CHANGE		+11%		-4%
SEASONAL DUCK HARVEST PER ADULT HUNTER	2.20	2.18	3.38	3.74
PERCENT CHANGE		-1%		+11%

GOOSE SPECIES COMPOSITION

CANADA GOOSE	100.00%	100.00%	76.52%	100.00%
SNOW GOOSE	0.00	0.00	0.04	0.00
BLUF GOOSE	0.00	0.00	0.00	0.00
WHITE-FRONTED GOOSE	0.00	0.00	0.00	0.00
BPANT	0.00	0.00	23.44	0.00
OTHER GESE	0.00	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00	100.00

GOOSE HARVEST (RETRIEVED KILL)	135	34	337,430	206,182
PERCENT CHANGE		-75%		-39%

SEASONAL GOOSE HARVEST PER ADULT HUNTER	0.07	0.02	0.67	0.47
PERCENT CHANGE		-77%		-30%

GOOT HARVEST (RETRIEVED KILL)	450	118	161,900	107,223
PERCENT CHANGE		-74%		-34%

SEASONAL CODY HARVEST PER ADULT HUNTER	0.23	0.05	0.30	0.23
PERCENT CHANGE		-77%		-24%

TOTAL HUNTER DAYS	9,770	8,442	2,945,763	2,657,396
PERCENT CHANGE		-14%		-10%

DAYS PER ADULT HUNTER	5.16	3.98	5.69	5.89
PERCENT CHANGE		-23%		+3%

TOTAL DUCK STAMPS SOLD	1,858	2,066	501,287	438,263
PERCENT CHANGE		+11%		-13%

PERCENT SOLD TO NON-HUNTERS	3.04%	2.36%	1.79%	2.06%
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TOTAL ADULT HUNTERS (POTENTIAL)	1,802	2,017	492,330	429,216
PERCENT CHANGE		+12%		-13%

PERCENT ACTIVE ADULT HUNTERS	84.5%	72.6%	82.6%	83.5%
PERCENT SUCCESSFUL ADULT HUNTERS	55.1%	56.7%	58.0%	59.3%

SAMPLE SIZES				
DUCK WINGS	212	261	13,560	13,951
GOOSE TAILS	0	2	2,368	1,662
QUESTIONNAIRES	154	85	19,447	13,869

^aWashington, D. C., hunters and kill allocated to Maryland, North Carolina, and Virginia.

TABLE C-6. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN THE MISSISSIPPI FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS.

DUCK SPECIES COMPOSITION	ALABAMA			ARKANSAS			ILLINOIS			INDIANA		
	1971	1972		1971	1972		1971	1972		1971	1972	
			%			%			%			%
MALLARD	22.08%	24.40%	83.38%	75.35%	55.43%	62.24%	49.88%	38.75%				
DOMESTIC MALLARD	0.00	0.23	0.00	0.00	1.02	0.13	0.00	0.54				
BLACK DUCK	2.66	5.30	0.44	0.10	1.50	2.09	8.15	7.50				
BLACK X MALLARD	0.00	0.46	0.06	0.00	0.11	0.13	0.50	0.71				
MOTTLED DUCK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
GADWALL	4.70	9.90	4.28	6.26	2.79	2.73	1.83	1.25				
AMERICAN WIGEON	8.46	6.22	1.51	1.83	2.52	3.43	1.00	1.61				
GREEN-WINGED TEAL	9.77	6.61	2.30	2.98	6.81	4.88	4.17	6.04				
BLUF-WINGED/CINNAMON TEAL	4.89	3.83	0.64	1.48	7.61	3.97	10.71	7.54				
NORTHERN SHOVELER	0.94	0.46	0.19	0.77	1.29	0.95	0.67	1.43				
PINTAIL	2.51	2.19	1.19	1.25	1.77	1.97	1.00	1.61				
WOOD DUCK	21.14	28.32	4.64	5.55	10.93	10.20	18.29	20.00				
REDHEAD	2.51	0.35	0.06	0.19	0.59	0.19	0.50	0.00				
CANVASBACK	1.57	0.00	0.31	0.00	0.16	0.00	0.17	0.00				
GREATER SCAUP	1.10	0.69	0.06	0.00	0.54	0.32	0.00	1.25				
LESSER SCAUP	9.24	2.07	0.00	2.02	3.75	2.86	1.00	1.07				
RING-NECKED DUCK	3.92	4.03	0.44	0.96	1.98	2.22	1.33	3.21				
GOLDENEYES	1.10	1.38	0.13	0.19	0.21	0.51	0.17	3.21				
BUFFLEHEAD	1.10	0.81	0.25	0.39	0.43	0.13	0.33	2.86				
RUDDY DUCK	0.31	0.23	0.00	0.10	0.11	0.51	0.33	0.54				
CLDSQUAW	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
EIDERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
SCOTERS	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00				
HOODED Mergansers	1.57	1.15	0.00	0.48	0.38	0.13	0.00	0.71				
OTHER Mergansers	0.31	1.38	0.06	0.00	0.11	0.38	0.00	0.18				
OTHER DUCKS	0.00	0.20	2.06	0.10	0.00	0.00	0.00	0.00				
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00				
DUCK HARVEST (RETRIEVED KILL)	54,662	63,356	548,747	356,111	317,588	376,364	119,638	89,167				
PERCENT CHANGE		+16%		-35%		+19%		-25%				
SEASONAL DUCK HARVEST PFR ADULT HUNTER	4.06	4.05	9.43	6.70	3.72	4.49	3.53	3.55				
PERCENT CHANGE		0%		-29%		+21%		0%				

GOOSE SPECIES COMPOSITION

CANADA GOOSE	88.89%	100.00%	0.00%	0.00%	90.86%	93.44%	88.89%	91.67%
SNCW GOOSE	11.11	0.00	0.00	100.00	0.00	0.00	0.00	0.00
BLUE GOOSE	0.00	0.00	100.00	0.00	9.14	6.56	11.11	8.33
WHITE-FRONTED GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BRANT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER GESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

GOOSE HARVLT (RETRIEVED KILL)	1,061	2,491	1,872	3,509	34,665	34,052	5,161	4,089
PERCENT CHANGE		+135%		+87%		-2%		-21%
SEASONAL GOOSE HARVEST PFR ADULT HUNTER	0.08	0.16	0.03	0.07	0.41	0.41	0.15	0.17
PERCENT CHANGE		+101%		+103%		0%		+7%

COOT HARVEST (RETRIEVED KILL)	10,016	6,045	2,687	9,018	13,260	35,286	10,265	21,240
PERCENT CHANGE		-40%		+236%		+166%		+107%
SEASONAL COOT HARVEST PER ADULT HUNTER	0.71	0.37	0.04	0.16	0.15	0.40	0.29	0.81
PERCENT CHANGE		-48%		+270%		+171%		+179%

TOTAL HUNTER DAYS	72,064	88,163	510,011	402,753	578,498	641,821	211,238	173,794
PERCENT CHANGE		+22%		-21%		+11%		-18%
DAYS PER ADULT HUNTER	5.23	5.51	8.57	7.41	6.63	7.49	6.10	6.77
PERCENT CHANGE		+5%		-14%		+13%		+11%

TOTAL DUCK STAMPS SOLD	12,909	14,985	55,656	50,861	82,706	81,062	32,769	24,336
PERCENT CHANGE		+16%		-9%		-2%		-26%
PERCENT SOLO TO NON-HUNTERS	0.22%	0.26%	0.07%	0.11%	1.39%	1.19%	1.22%	1.34%

TOTAL ADULT HUNTERS (POTENTIAL)	12,881	14,946	55,617	50,805	81,556	80,097	32,369	24,010
PERCENT CHANGE		+16%		-9%		-2%		-26%
PERCENT ACTIVE ADULT HUNTERS	78.2%	88.1%	85.7%	82.0%	81.9%	83.9%	82.4%	85.1%
PERCENT SUCCESSFUL ADULT HUNTERS	55.7%	67.5%	69.7%	62.8%	58.8%	61.4%	53.8%	58.9%

SAMPLE SIZES	677	903	1,592	1,047	1,866	1,586	632	607
DUCK WINGS	9	11	3	2	361	122	9	12
GOOSE TAILS	890	491	819	556	2,854	2,643	786	763
QUESTIONNAIRES								

TABLE C-6. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN THE MISSISSIPPI FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS--CONTINUED.

DUCK SPECIES COMPOSITION	IOWA		KENTUCKY		LOUISIANA		MICHIGAN	
	1971	1972	1971	1972	1971	1972	1971	1972
MALLARD	43.33%	50.02%	68.51%	68.04%	23.28%	16.86%	26.61%	32.26%
DOMESTIC MALLARD	0.05	0.15	0.00	0.52	0.04	0.00	0.12	0.28
BLACK DUCK	0.25	0.26	17.47	16.50	0.42	0.27	4.12	5.90
BLACK X MALLARD	0.00	0.04	0.69	0.77	0.04	0.04	0.00	0.48
MOTTLED GUCK	0.00	0.00	0.00	0.00	4.21	3.51	0.00	0.00
GADWALL	3.98	4.92	1.84	0.77	14.91	15.31	0.68	1.37
AMERICAN WIGEON	3.88	4.69	0.46	0.26	5.91	7.68	2.64	1.65
GREEN-WINGED TEAL	7.05	6.94	1.38	0.26	9.24	10.81	7.25	7.14
BLUE WINGED/CINNAMON TEAL	13.35	8.48	0.00	0.00	13.46	17.12	4.73	5.90
NORTHERN SHOVELLER	1.66	1.80	1.38	0.00	4.71	5.55	0.37	0.21
PINTAIL	1.61	2.10	0.23	0.26	5.46	7.19	0.92	1.30
WOOD DUCK	15.57	12.08	3.68	5.16	7.62	8.61	14.01	12.42
REDHEAD	1.01	0.23	0.46	0.26	0.25	0.22	4.24	0.48
CANVASBACK	0.50	0.00	0.92	0.00	0.17	0.04	2.15	0.00
GREATER SCAUP	0.15	0.30	0.00	1.55	0.17	0.09	3.38	4.32
LESSER SCAUP	4.48	4.62	1.38	1.55	5.54	3.06	10.26	9.33
RING-NECKED DUCK	1.46	1.80	0.46	1.80	3.83	2.40	7.01	6.25
GOLDENFELS	0.10	0.08	0.46	1.80	0.08	0.00	4.00	3.23
RUFFLEHEAD	0.20	0.53	0.23	0.00	0.00	0.13	4.73	5.35
RUDDY DUCK	0.66	0.75	0.23	0.52	0.00	0.22	0.80	0.21
GLDSQUAW	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.14
FIDERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SCOTERS	0.00	0.08	0.00	0.00	0.00	0.00	0.74	0.21
HODDED MORGANSEPS	0.30	0.08	0.00	0.00	0.58	0.75	0.55	0.76
OTHER MORGANSEPS	0.00	0.04	0.23	0.00	0.08	0.13	0.37	0.82
OTHER DUCKS	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
DUCK HARVEST (RETRICVED KILL)	388,466	337,170	41,738	47,563	1,127,399	1,219,259	311,503	402,140
PERCENT CHANGE		-13%		+14%		+8%		+29%
SEASONAL DUCK HARVEST PER ADULT HUNTER	5.48	5.66	3.51	4.38	9.03	9.33	2.69	3.84
PERCENT CHANGE		+3%		+25%		+3%		+43%

GOOSE SPECIES COMPOSITION

CANADA GOOSE	18.75%	12.12%	100.00%	97.83%	0.00%	86.77%	93.18%
SNOW GOOSE	27.99	45.46	0.00	2.17	19.57	1.47	0.00
BLUE GOOSE	53.26	42.05	0.00	0.00	58.70	11.77	6.82
WHIT-FRONTED GOOSE	0.00	0.38	0.00	0.00	21.74	0.00	0.00
BRANT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00

GOOSE HARVEST (RETRIEVED KILL)	54,814	35,440	10,307	4,601	43,151	22,487	17,476
PERCENT CHANGE		-35%		-55%	-35%		-22%

SEASONAL GOOSE HARVEST PFR ADULT HUNTER	0.78	0.60	0.88	0.43	0.33	0.20	0.17
PERCENT CHANGE		-23%		-51%	-38%		-14%

COOT HARVEST (RETRIEVED KILL)	12,738	14,970	2,122	2,077	276,256	42,800	27,458
PERCENT CHANGE		+18%		-2%	+174%		-36%

SEASONAL COOT HARVEST PER ADULT HUNTER	0.17	0.24	0.17	0.18	2.03	0.35	0.25
PERCENT CHANGE		+39%		+7%	+161%		-29%

3 TOTAL HUNTER DAYS	574,127	549,764	85,541	72,373	880,868	687,277	665,433
PERCENT CHANGE		-4%		-15%	-5%		-3%

DAYS PFR ADULT HUNTER	7.93	9.03	7.03	6.52	6.59	5.80	6.21
PERCENT CHANGE		+14%		-7%	-9%		+7%

TOTAL DUCK STAMPS SOLD	68,401	57,907	11,390	10,435	125,525	111,785	100,853
PERCENT CHANGE		-15%		-8%	+4%		-10%

PERCENT SOLD TO NCM-HUNTERS	1.05%	1.69%	0.13%	0.51%	0.49%	0.91%	0.66%
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TOTAL ADULT HUNTERS (POTENTIAL)	67,683	56,928	11,375	10,382	124,910	110,768	100,187
PERCENT CHANGE		-18%		-9%	+5%		-10%

PERCENT ACTIVE ADULT HUNTERS	86.7%	89.2%	86.6%	85.4%	82.8%	84.8%	87.1%
PERCENT SUCCESSFUL ADULT HUNTERS	72.1%	72.1%	63.4%	60.3%	72.9%	59.1%	63.6%

SAMPLE SIZES

DUCK WINGS	1,985	2,665	435	388	2,129	1,627	1,457
GOOSE TAILS	368	264	100	46	46	68	44
QUESTIONNAIRES	2,008	1,877	511	395	1,979	2,585	1,801

TABLE C-6. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN THE MISSISSIPPI FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS--CONTINUED.

DUCK SPECIES--COMPOSITION	MINNESOTA			MISSISSIPPI			MISSOURI			OHIO	
	1971	1972	1971	1971	1972	1971	1972	1971	1972	1971	1972
MALLARD	25.90%	37.23%	55.21%	55.75%	60.82%	61.07%	30.98%	28.56%			
DOMESTIC MALLARD	0.08	0.21	0.12	0.00	0.00	0.24	0.19	0.44			
BLACK DUCK	0.51	0.75	1.36	1.49	0.47	0.00	15.15	16.68			
BLACK X MALLARD	0.00	0.08	0.00	0.15	0.00	0.00	0.10	0.53			
MOTTLED DUCK	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00			
GADWALL	2.01	1.78	2.96	3.87	6.23	6.73	0.58	1.33			
AMERICAN WIGEON	3.47	3.73	2.22	1.64	2.21	2.97	3.19	1.86			
GREEN-WINGED TEAL	6.07	5.43	2.17	3.42	4.79	3.75	4.92	7.13			
BLUE-WINGED/CINNAMON TEAL	16.16	7.34	1.24	1.43	7.06	7.41	8.07	6.10			
NORTHERN SHOVELER	1.22	1.66	0.00	0.15	1.47	1.33	0.39	0.53			
PINTAIL	1.54	1.24	0.99	0.74	2.61	2.74	2.12	0.98			
WOOD DUCK	7.17	8.79	24.83	25.72	5.43	6.65	25.54	19.97			
REDHEAD	3.43	0.08	0.00	0.15	1.74	0.08	0.68	0.36			
CANVASBACK	0.95	0.04	0.00	0.00	0.13	0.00	0.48	0.00			
GREATER SCAUP	0.32	0.62	1.11	0.00	0.27	0.24	0.39	1.42			
LESSER SCAUP	11.75	16.79	3.71	0.60	4.15	3.60	3.19	2.66			
RING-NECKED DUCK	15.18	9.62	2.35	2.83	1.41	1.64	0.39	1.15			
GOLDFEYES	1.26	1.37	0.12	0.00	0.07	0.94	0.48	1.24			
BUFFLEHEAD	1.42	1.91	0.25	0.00	0.40	0.16	0.58	1.95			
RUDDY DUCK	0.83	0.62	0.25	0.15	0.20	0.24	0.58	4.08			
OLDSCAW	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.27			
EIDERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
SCOTERS	0.12	0.08	0.12	0.00	0.00	0.00	0.29	0.36			
HOODED Mergansers	0.51	0.62	0.99	1.19	0.47	0.24	1.35	0.80			
OTHER Mergansers	0.04	0.00	0.00	0.00	0.07	0.00	0.39	1.60			
OTHER DUCKS	0.04	0.00	0.00	0.15	0.00	0.00	0.00	0.00			
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
DUCK HARVEST (RETRIEVED KILL)	1,116,180	974,705	170,944	157,213	271,358	209,209	117,685	128,287			
PERCENT CHANGE		-13%		-8%		-23%		+9%			
SEASONAL DUCK HARVEST PER ADULT HUNTER	5.97	6.01	5.71	6.49	4.40	3.40	2.53	3.32			
PERCENT CHANGE		+1%		+14%		-23%		+31%			

GOOSE SPECIES COMPOSITION

CANADA GOOSE	37.82%	50.70%	100.00%	0.00%	58.02%	74.60%	98.63%	100.00%
SNOW GOOSE	25.00	26.06	0.00	30.00	26.34	15.08	0.00	0.00
BLUE GOOSE	36.54	21.83	0.00	70.00	15.65	8.33	1.37	0.00
WHITE-FRONTED GOOSE	0.64	1.41	0.00	0.00	0.00	1.98	0.00	0.00
BRANT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER GESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

GOOSE HARVEST (RETRIEVED KILL)	53,594	39,405	1,855	1,638	57,279	55,058	7,169	5,341
PERCENT CHANGE		-26%		-12%		-4%		-25%
SEASONAL GOOSE HARVEST PLR ADULT HUNTER	0.29	0.25	0.06	0.07	0.94	0.91	0.16	0.14
PERCENT CHANGE		-15%		+10%		-4%		-10%

COOT HARVEST (RETRIEVED KILL)	61,335	78,989	4,773	14,932	5,979	9,466	13,040	11,558
PERCENT CHANGE		+25%		+213%		+58%		-11%
SEASONAL COOT HARVEST PER ADULT HUNTER	0.32	0.47	0.15	0.59	0.09	0.15	0.27	0.29
PERCENT CHANGE		+49%		+287%		+59%		+7%

TOTAL HUNTER DAYS	1,248,787	1,121,647	173,197	144,129	412,657	367,033	276,929	244,378
PERCENT CHANGE		-10%		-17%		-11%		-12%
DAYS PER ADULT HUNTER	6.54	6.77	5.66	5.82	6.54	5.83	5.82	6.18
PERCENT CHANGE		+4%		+3%		-11%		+6%

TOTAL DUCK STAMPS SOLD	179,624	155,928	28,702	23,323	59,435	59,203	45,564	38,481
PERCENT CHANGE		-13%		-19%		0%		-16%
PERCENT SOLD TO NON-HUNTERS	0.59%	0.69%	0.35%	0.82%	0.81%	0.68%	2.45%	3.98%

TOTAL ADULT HUNTERS (POTENTIAL)	178,564	154,852	28,602	23,132	58,954	58,800	44,448	36,949
PERCENT CHANGE		-13%		-19%		0%		-17%
PERCENT ACTIVE ADULT HUNTERS	90.2%	89.2%	82.3%	82.8%	83.8%	84.6%	84.7%	86.6%
PERCENT SUCCESSFUL ADULT HUNTERS	78.6%	75.7%	65.5%	65.7%	66.6%	67.1%	55.8%	59.4%

SAMPLE SIZES								
DUCK WINGS	2,537	2,412	813	712	1,498	1,223	1,064	1,125
GOOSE TAILS	156	142	0	10	262	252	73	65
QUESTIONNAIRES	2,405	2,060	1,256	837	1,374	1,282	1,679	1,289

TABLE C-6. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN THE MISSISSIPPI FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS--CONTINUED.

DUCK SPECIES COMPOSITION	TENNESSEE			WISCONSIN			MISSISSIPPI FLYWAY TOTAL	
	1971	1972	1971	1972	1971	1972	1971	1972
		%		%		%		%
MALLARD	57.47%	56.86%	34.30%	34.20%	40.10%	40.13%	39.13%	
DOMESTIC MALLARD	0.23	0.00	0.05	0.12	0.12	0.13	0.13	
BLACK DUCK	9.06	8.89	2.02	3.27	1.94	2.32	2.32	
BLACK X MALLARD	0.58	0.34	0.05	0.12	0.07	0.14	0.14	
MOTTLED DUCK	0.00	0.00	0.00	0.00	0.87	0.86	0.86	
GADWALL	4.99	4.36	0.94	1.63	5.26	6.01	6.01	
AMERICAN WIGEON	2.79	4.70	3.24	6.42	3.51	4.56	4.56	
GREEN-WINGED TEAL	1.74	4.03	6.20	5.27	6.10	6.57	6.57	
BLUE-WINGED/CINNAMON TEAL	3.05	2.38	15.84	10.84	10.62	8.89	8.89	
NORTHERN SHOVELER	0.12	0.34	0.71	1.27	1.66	2.17	2.17	
PINTAIL	0.81	0.67	1.41	1.45	2.29	2.84	2.84	
WOOD DUCK	11.84	13.08	14.15	10.90	10.47	10.62	10.62	
REDHEAD	0.00	0.00	2.87	0.42	1.58	0.22	0.22	
CANVASSACK	1.16	0.00	1.69	0.00	0.72	0.02	0.02	
GREATER SCAUP	0.70	0.00	0.47	0.67	0.45	0.69	0.69	
LESSER SCAUP	2.09	1.17	5.17	6.72	5.87	6.42	6.42	
RING-NECKED DUCK	1.86	2.52	5.55	6.66	5.50	4.38	4.38	
GOLDENFYES	0.81	0.17	0.66	2.00	0.68	0.96	0.96	
BUFFLEHEAD	0.00	0.00	1.97	3.87	0.91	1.43	1.43	
RUDDY DUCK	0.12	0.17	1.65	2.79	0.51	0.73	0.73	
OLDSQUAW	0.00	0.00	0.09	0.06	0.03	0.02	0.02	
EIDERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SCOTERS	0.00	0.00	0.05	0.06	0.08	0.06	0.06	
HOODED Mergansers	0.58	0.34	0.80	1.15	0.52	0.64	0.64	
OTHER Mergansers	0.00	0.00	0.09	0.12	0.09	0.20	0.20	
OTHER DUCKS	0.00	0.00	0.00	0.00	0.02	0.01	0.01	
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
DUCK HARVEST (RETRIEVED KILL)	243,871	164,052	624,170	543,554	5,453,989	5,068,180	5,068,180	
PERCENT CHANGE		-33%		-13%		-7%	-7%	
SEASONAL DUCK HARVEST PER ADULT HUNTER	6.94	5.77	3.76	3.79	5.24	5.38	5.38	
PERCENT CHANGE		-17%		+1%		+3%	+3%	

GOOSE SPECIES COMPOSITION

CANADA GOOSE	100.00%	100.00%	85.42%	94.23%	51.22%	58.48%
SNOW GOOSE	0.00	C.CC	0.83	4.81	13.71	17.13
BLUF GOOSF	0.00	0.00	13.75	0.96	29.82	20.50
WHITE-FRONTED GOOSE	0.00	0.00	0.00	0.00	5.26	3.90
BPANT	0.00	0.00	0.00	0.00	0.00	0.00
OTHER GESE	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00

GOOSE HARVEST (RETRIEVED KILL)
 PERCENT CHANGE 5,506 2,366 -57% 37,725 -35% 380,302 286,342 -25%

SEASONAL GOOSE HARVEST PFR ADULT HUNTER
 PERCENT CHANGE 0.16 C.08 -47% 0.36 0.27 -25% 0.37 0.31 -17%

COOT HARVEST (RETRIEVED KILL)
 PERCENT CHANGE 17,014 7,749 -54% 108,475 -17% 428,329 623,519 +46%

SEASONAL COOT HARVEST PER ADULT HUNTER
 PERCENT CHANGE 0.47 0.26 -44% 0.76 0.73 -4% 0.40 0.64 +61%

TOTAL HUNTER DAYS
 PERCENT CHANGE 278,339 205,318 -26% 1,139,948 1,025,032 -10% 7,172,705 6,582,506 -8%

DAYS PER ADULT HUNTER
 PERCENT CHANGE 7.74 7.06 -9% 6.71 6.99 +4% 6.74 6.83 +1%

TOTAL DUCK STAMPS SOLO
 PERCENT CHANGE 33,677 27,367 -19% 160,435 138,045 -14% 1,003,218 908,311 -9%

PERCENT SOLO TO NON-HUNTERS 0.25% 0.69% 1.10% 0.68% 0.88% 0.88%

TOTAL ADULT HUNTERS (POTENTIAL)
 PERCENT CHANGE 33,593 27,178 -19% 158,670 137,106 -14% 994,356 900,282 -9%

PERCENT ACTIVE ADULT HUNTERS
 PERCENT SUCCESSFUL ADULT HUNTERS 87.2% 86.9% 67.2% 85.4% 86.8% 85.2% 86.0% 67.1% 67.4%

SAMPLE-SIZES

DUCK WINGS	842	587	2,128	1,652	20,016	18,493
GOOSE TAILS	20	0	240	104	1,723	1,662
QUESTIONNAIRES	767	703	3,889	2,533	23,288	19,209

TABLE C-7. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN THE CENTRAL FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS.

DUCK SPECIES COMPOSITION	COLORADO ^a			KANSAS			MONTANA ^a			NEBRASKA		
	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972	1971	1972
MALLARD	63.77%	64.78%	43.37%	49.55%	92.49%	84.43%	59.83%	59.29%				
DOMESTIC MALLARD	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.11				
BLACK DUCK	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00				
BLACK X MALLARD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
MOTTLED DUCK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
GADWALL	5.92	5.61	8.62	9.22	1.47	4.58	7.84	6.82				
AMERICAN WIGEON	6.62	6.88	5.98	5.12	1.83	1.10	6.09	5.04				
GREEN-WINGED TEAL	9.00	10.05	12.56	13.61	1.65	2.02	11.55	14.27				
BLUE-WINGED/CINNAMON TEAL	6.05	4.95	9.10	7.24	0.37	1.65	2.42	3.88				
NORTHERN SHOVELLEP	1.48	1.06	2.69	3.23	0.37	2.20	2.42	2.31				
PINTAIL	3.74	2.41	7.12	5.01	0.00	1.28	2.68	2.10				
WOOD DUCK	0.08	0.07	0.79	0.31	0.00	0.00	1.14	0.79				
REDHEAD	0.62	0.43	2.78	0.36	0.55	0.55	1.44	0.21				
CANVASBACK	0.16	0.00	0.29	0.00	0.18	0.00	0.16	0.00				
GREATER SCAUP	0.00	0.00	0.07	0.31	0.00	0.00	0.05	0.05				
LESSER SCALP	0.70	2.06	3.39	2.87	0.37	1.10	2.48	2.47				
RING-NECKED DUCK	0.08	0.00	0.97	1.33	0.18	0.18	0.83	0.74				
GOLDENEYES	0.86	0.78	0.32	0.21	0.37	0.18	0.05	0.26				
RUFFLEHEAD	0.78	0.64	0.76	0.51	0.00	0.00	0.36	1.10				
PUDDY DUCK	0.08	0.14	0.76	0.97	0.00	0.00	0.46	0.42				
GLAUCOUS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
EIDERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
SCOTTERS	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00				
HOODED Mergansers	0.00	0.00	0.22	0.10	0.00	0.00	0.05	0.05				
OTHER Mergansers	0.08	0.14	0.11	0.00	0.18	0.18	0.16	0.05				
OTHER DUCKS	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00				
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00				
DUCK HARVEST (RETRIEVED KILL)	221,293	180,016	445,860	420,640	51,916	43,638	309,866	302,307				
PERCENT CHANGE		-15%		-6%		-16%		-2%				
SEASONAL DUCK HARVEST PER ADULT HUNTER	4.87	4.60	6.62	6.50	5.93	5.15	5.80	5.89				
PERCENT CHANGE		-6%		-2%		-13%		+2%				

GOOSE_SPECIES_COMPOSITION

CANADA GOOSE	100.00%	100.00%	78.06%	61.33%	94.79%	95.50%	68.21%	58.33%
SNOW GOOSE	0.00	0.00	2.04	13.26	0.00	0.00	10.41	13.89
BLUE GOOSE	0.00	0.00	9.18	4.42	0.00	0.00	9.25	8.33
WHITE-FRONTED GOOSE	0.00	0.00	10.71	20.99	5.21	4.51	12.14	19.44
BRANT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

GOOSE HARVEST (RETRIEVED KILL)	30,269	14,562	43,493	25,110	4,812	5,221	47,538	30,360
PERCENT CHANGE		-52%		-42%		+8%		-36%
SEASONAL GOOSE HARVEST PER ADULT HUNTER	0.68	0.38	0.66	0.40	0.56	0.63	0.91	0.60
PERCENT CHANGE		-44%		-40%		+12%		-33%

COOT HARVEST (RETRIEVED KILL)	3,598	3,482	7,241	13,169	964	923	8,897	8,422
PERCENT CHANGE		-3%		+82%		-4%		-5%
SEASONAL COOT HARVEST PER ADULT HUNTER	0.08	0.09	0.10	0.20	0.11	0.11	0.16	0.16
PERCENT CHANGE		+13%		+88%		-1%		-1%

TOTAL HUNTER DAYS	370,751	258,122	546,036	503,143	51,213	49,156	426,139	395,202
PERCENT CHANGE		-30%		-8%		-4%		-7%
DAYS PER ADULT HUNTER	7.97	6.44	7.92	7.59	5.71	5.66	7.79	7.52
PERCENT CHANGE		-19%		-4%		-1%		-3%

TOTAL DUCK STAMPS SOLD	43,203	37,331	63,756	61,467	8,345	8,054	50,898	48,677
PERCENT CHANGE		-14%		-4%		-3%		-4%
PERCENT SOLD TO NON-HUNTERS	0.86%	1.04%	0.44%	0.69%	0.99%	0.71%	0.94%	0.58%

TOTAL ADULT HUNTERS (POTENTIAL)	42,831	36,942	63,475	61,043	8,262	7,997	50,420	48,395
PERCENT CHANGE		-14%		-4%		-3%		-4%
PERCENT ACTIVE ADULT HUNTERS	83.8%	82.6%	82.6%	83.2%	81.3%	80.0%	85.7%	84.9%
PERCENT SUCCESSFUL ADULT HUNTERS	65.0%	64.0%	69.6%	71.2%	70.9%	68.0%	70.5%	71.9%

SAMPLE-SIZES								
DUCK WINGS	1,241	1,385	2,687	2,004	546	546	1,939	1,906
GOOSE TAILS	197	117	196	181	96	111	173	72
QUESTIONNAIRES	1,998	1,987	2,265	2,039	583	282	2,101	1,401

TABLE C-7. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN THE CENTRAL FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS--CONTINUED.

DUCK SPECIES-COMPOSITION	NEW MEXICO ^a			NORTH DAKOTA			OKLAHOMA			SOUTH DAKOTA		
	1971	1972		1971	1972		1971	1972		1971	1972	
MALLARD	19.51%	29.57%		52.04%	60.71%		44.80%	44.15%		48.17%	54.85%	
DOMESTIC MALLARD	0.00	0.00		0.05	0.07		0.00	0.00		0.05	0.11	
BLACK DUCK	0.00	0.00		0.00	0.14		0.00	0.06		0.00	0.05	
BLACK X MALLARD	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.05	
MOTTLED DUCK	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
GADWALL	25.82	15.52		10.64	9.53		13.03	16.07		9.85	14.55	
AMERICAN WIGEON	12.03	10.15		5.37	4.66		5.00	4.42		5.12	4.96	
GREEN-WINGED TEAL	12.31	19.77		3.15	3.06		13.96	10.11		8.68	6.51	
BLUE-WINGED/CINNAMON TEAL	6.13	3.78		9.62	6.26		5.65	6.26		13.02	5.68	
NORTHERN SHOVELER	9.24	7.17		2.78	2.99		3.02	3.74		2.39	3.36	
PINTAIL	4.84	9.27		5.87	5.84		2.25	2.87		3.22	2.65	
WOOD DUCK	0.00	0.18		0.09	0.14		3.35	3.43		0.34	0.44	
REDHEAD	2.64	0.18		3.38	0.42		1.76	0.87		2.83	0.99	
CANVASBACK	0.44	0.18		1.25	0.07		0.44	0.06		0.59	0.00	
GREATER SCAUP	0.00	0.18		0.00	0.00		0.17	0.25		0.20	0.00	
LESSEN SCAUP	1.61	0.88		3.65	4.31		2.42	4.61		3.17	4.58	
RING-NECKED DUCK	0.44	0.53		0.51	0.49		2.53	2.12		0.98	0.55	
GOLDFENYES	0.73	0.70		0.05	0.00		0.22	0.31		0.15	0.05	
BUFFLEHEAD	2.35	1.05		0.97	0.42		0.50	0.13		0.68	0.22	
RUDDY DUCK	0.73	0.00		0.19	0.90		0.39	0.19		0.29	0.33	
OLDSQUAW	0.00	0.18		0.00	0.00		0.00	0.00		0.00	0.00	
FIDERS	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00	
SCOTERS	0.00	0.00		0.09	0.00		0.00	0.00		0.05	0.00	
HOODED Mergansers	0.88	0.00		0.03	0.00		0.33	0.25		0.10	0.00	
OTHER Mergansers	0.15	0.18		0.32	0.00		0.17	0.13		0.15	0.00	
OTHER DUCKS	0.15	0.18		0.30	0.00		0.00	0.00		0.00	0.05	
TOTAL	160.00	100.00		100.00	100.00		100.00	100.00		100.00	100.00	
DUCK HARVEST (RETRIEVED KILL)	34,127	32,253		391,019	403,150		211,451	217,863		370,166	322,169	
PERCENT CHANGE		-5%			+3%			+3%			-13%	
SEASONAL DUCK HARVEST PER ADULT HUNTER	5.10	5.50		6.91	7.48		5.60	6.66		7.53	6.71	
PERCENT CHANGE		+8%			+8%			+19%			-11%	

GOOSE SPECIES COMPOSITION

CANADA GOOSE	50.00%	94.74%	39.16%	24.42%	82.81%	63.87%	31.29%	40.30%
SNOW GOOSE	50.00	5.26	41.68	55.58	4.69	15.13	43.76	41.42
BLUE GOOSE	0.00	0.00	14.53	19.48	9.38	13.45	23.41	16.05
WHITE-FRONTED GOOSE	0.00	0.00	4.63	0.52	3.13	7.56	1.53	2.24
BRANT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER GESE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

GOOSE HARVEST (RETRIEVED KILL)	3,297	1,967	110,205	48,757	10,219	11,613	61,788	48,759
PERCENT CHANGE		-40%		-56%		+14%		-21%

SEASONAL GOOSE HARVEST PER ADULT HUNTER	0.50	0.34	1.99	0.92	0.28	0.36	1.28	1.03
PERCENT CHANGE		-32%		-54%		+31%		-19%

COOT HARVEST (RETRIEVED KILL)	1,020	522	12,051	10,872	9,233	14,456	10,857	12,318
PERCENT CHANGE		-46%		-10%		+57%		+13%

SEASONAL COOT HARVEST PER ADULT HUNTER	0.15	0.09	0.21	0.19	0.24	0.43	0.21	0.25
PERCENT CHANGE		-41%		-5%		+81%		+16%

TOTAL HUNTER DAYS	39,581	35,932	424,693	404,335	249,218	216,677	423,726	392,567
PERCENT CHANGE		-5%		-5%		-13%		-7%

DAYS PER ADULT HUNTER	5.78	5.97	7.34	7.33	6.44	6.47	8.42	7.98
PERCENT CHANGE		+3%		0%		0%		-5%

TOTAL DUCK STAMPS SOLD	6,362	5,599	53,600	50,944	36,049	31,172	46,670	45,753
PERCENT CHANGE		-12%		-5%		-14%		-2%

PERCENT SOLD TO NON-HUNTERS	0.83%	1.03%	0.51%	0.27%	1.18%	0.97%	0.65%	1.00%
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TOTAL ADULT HUNTERS (POTENTIAL)	6,309	5,541	53,327	50,806	35,624	30,870	46,367	45,295
PERCENT CHANGE		-12%		-5%		-13%		-2%

PERCENT ACTIVE ADULT HUNTERS	82.2%	84.3%	87.7%	89.8%	79.9%	79.8%	87.7%	85.1%
PERCENT SUCCESSFUL ADULT HUNTERS	68.4%	67.3%	76.7%	82.4%	62.5%	64.0%	78.2%	75.3%

SAMPLE SIZES								
DUCK WINGS	722	561	2,162	1,438	1,851	1,589	2,047	1,814
GOOSE TAILS	18	19	475	385	64	119	455	268
QUESTI ONNAIRES	368	351	1,575	1,602	1,121	789	981	1,065

TABLE C-7. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, AND ADULT HUNTER STATISTICS IN THE CENTRAL FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS--CONTINUED.

DUCK SPECIES COMPOSITION	TEXAS			HYDING ^a			CENTRAL FLYWAY TOTAL	
	1971	1972	1971	1972	1971	1972	1971	1972
MALLARD	12.90%	16.61%	69.63%	69.89%	42.68%	42.40%		
DOMESTIC MALLARD	0.00	0.03	0.00	0.00	0.01	0.05		
BLACK DUCK	0.00	0.03	0.00	0.00	0.01	0.05		
BLACK X MALLARD	0.00	0.00	0.00	0.00	0.00	0.01		
MOTTLED DUCK	8.05	8.54	0.00	0.00	1.92	2.88		
GADWALL	17.52	13.16	6.52	7.83	11.28	11.20		
AMERICAN WIGEON	9.51	7.70	5.78	4.46	6.60	5.95		
GREEN-WINGED TEAL	17.18	18.12	5.04	4.92	11.16	12.30		
BLUE-WINGED/GINNAMON TEAL	7.63	9.47	3.56	2.77	7.79	6.96		
NORTHERN SHOVELER	4.88	7.57	1.19	1.54	3.09	4.49		
PINTAIL	10.02	9.04	4.00	3.84	5.74	5.59		
WOOD DUCK	3.32	3.35	0.15	0.00	1.38	1.58		
RDHEAD	1.82	0.30	0.89	0.00	2.16	0.44		
CANVASBACK	0.62	0.03	0.00	0.00	0.53	0.03		
GRATER SCAUP	0.04	0.10	0.00	0.00	0.07	0.10		
LESSER SCAUP	3.24	3.35	0.30	2.15	2.84	3.40		
RING-NECKED DUCK	1.28	2.08	0.30	0.46	0.98	1.26		
GLDENEYES	0.07	0.07	0.30	0.92	0.21	0.18		
RUFFLEHEAD	0.73	0.03	0.74	1.08	0.71	0.35		
HUDDY DUCK	0.66	0.67	0.74	0.00	0.46	0.59		
OLDSCAW	0.00	0.00	0.00	0.00	0.00	0.00		
STERS	0.00	0.00	0.00	0.00	0.00	0.00		
SCOTERS	0.04	0.00	0.00	0.00	0.04	0.00		
HOOED Mergansers	0.26	0.10	0.30	0.00	0.16	0.07		
OTHER Mergansers	0.22	0.07	0.59	0.15	0.15	0.05		
OTHER DUCKS	0.04	0.17	0.02	0.00	0.01	0.08		
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00		
DUCK HARVEST (RETRIEVED KILL)	651,886	995,605	44,402	34,465	2,731,546	2,552,150		
PERCENT CHANGE		+53%		-22%		+8%		
SEASONAL DUCK HARVEST PER ADULT HUNTER	4.50	7.32	5.45	5.06	5.71	6.60		
PERCENT CHANGE		+63%		-7%		+16%		

GOOSE SPECIES COMPOSITION

CANADA GOOSE	17.02%	18.59%	100.00%	100.00%	47.30%	38.03%
SNCW GOOSE	38.65	43.72	0.00	0.00	28.67	35.49
BLUE GOOSE	21.28	15.08	0.00	0.00	14.62	13.20
WHITE-FRONTED GOOSE	23.05	22.61	0.00	0.00	9.42	13.27
BRANT	0.00	0.00	0.00	0.00	0.00	0.00
OTHER GOOSE	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00

GOOSE HARVEST (RETRIEVED KILL)	92,059	120,875	2,770	1,415	406,450	308,635
PERCENT CHANGE		+31%		-49%		-24%

SEASONAL GOOSE HARVEST PER ADULT HUNTER	0.65	0.91	0.35	0.21	0.87	0.70
PERCENT CHANGE		+40%		-39%		-19%

GOOSE HARVEST (RETRIEVED KILL)	24,187	39,557	868	1,189	78,916	104,910
PERCENT CHANGE		+64%		+37%		+33%

SEASONAL GOOSE HARVEST PER ADULT HUNTER	0.16	0.28	0.10	0.17	0.16	0.23
PERCENT CHANGE		+74%		+63%		+42%

TOTAL HUNTER DAYS	767,205	756,350	55,669	41,241	3,354,231	3,052,725
PERCENT CHANGE		-1%		-26%		-9%

DAYS PER ADULT HUNTER	5.17	5.43	6.68	5.91	6.85	6.67
PERCENT CHANGE		+5%		-11%		-3%

TOTAL DUCK STAMPS SOLD	138,047	129,453	7,705	6,553	454,635	425,003
PERCENT CHANGE		-6%		-15%		-7%

PERCENT SOLD TO NON-HUNTERS	0.95%	0.90%	0.30%	1.96%	0.79%	0.80%
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TOTAL ADULT HUNTERS (PCTFNTIAL)	136,736	128,288	7,682	6,425	451,033	421,603
PLRCFNT CHANGE		-6%		-16%		-7%

PERCENT ACTIVE ADULT HUNTERS	78.2%	81.4%	86.2%	80.4%	82.7%	83.4%
PERCENT SUCCESSFUL ADULT HUNTERS	57.6%	66.7%	72.8%	67.1%	66.8%	70.4%

SAMPLE SIZES						
DUCK WINGS	2,818	3,026	675	651	16,688	14,920
GOOSE TAILS	282	199	39	16	1,995	1,487
QUESTIONNAIRES	2,892	1,977	491	428	14,375	11,921

^a Includes only that portion of the State lying within the Central Flyway.

TABLE C-8. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN THE PACIFIC FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS.

DUCK SPECIES COMPOSITION	ARIZONA		CALIFORNIA		COLORADO ^a		IDAHO	
	1971	1972	1971	1972	1971	1972	1971	1972
MALLARD	18.08%	14.94%	15.52%	15.60%	72.41%	65.84%	79.06%	78.48%
DOMESTIC MALLARD	0.00	0.00	0.03	0.05	0.00	0.00	0.00	0.07
BLACK DUCK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BLACK X MALLARD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MOTTLED DUCK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GADWALL	6.92	3.52	2.88	2.71	3.02	4.49	0.85	0.80
AMERICAN WIGEON	9.04	8.26	13.13	10.89	3.88	10.57	7.50	7.48
GREEN-WINGED TEAL	18.79	20.21	13.74	17.25	11.64	6.98	3.48	4.31
RUFWINGED/CINNAMON TEAL	5.51	11.78	1.83	3.54	2.80	2.24	0.31	0.46
NORTHERN SHOVELER	7.91	4.39	8.73	8.56	1.08	0.75	0.39	0.40
PINTAIL	12.99	18.28	37.03	35.86	1.51	1.50	4.41	5.70
WOOD DUCK	0.00	0.35	0.72	0.91	0.00	0.25	0.23	0.86
REDHEAD	5.93	6.50	0.52	0.26	0.86	0.25	1.70	0.40
CANVASBACK	0.71	0.00	1.75	0.05	0.00	0.00	0.39	0.00
GREATER SCAUP	0.14	0.35	0.22	0.85	0.00	0.75	0.62	0.07
LESSER SCAUP	1.12	0.88	1.12	0.66	0.43	0.50	0.00	0.00
PING-NECKED DUCK	4.94	5.45	0.37	0.56	0.22	1.75	0.31	0.20
GOLDENYES	0.28	0.00	0.23	0.16	1.51	3.24	0.39	0.60
RUFFLEHEAD	3.39	0.70	0.49	0.34	0.22	0.00	0.00	0.13
FUDDY DUCK	3.81	3.87	1.59	1.62	0.43	0.00	0.23	0.00
OLDSQUAW	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
TINDERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SCOTERS	0.00	0.00	0.07	0.00	0.00	0.00	0.08	0.00
HOOED MEGANSERS	0.14	0.00	0.00	0.02	0.00	0.00	0.00	0.00
OTHER MEGANSERS	0.28	0.18	0.03	0.10	0.00	0.25	0.38	0.07
OTHER DUCKS	0.00	0.35	0.61	0.03	0.00	0.25	0.00	0.20
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
DUCK HARVEST (RETRIEVE KILL)	87,560	84,231	2,070,005	2,011,894	29,520	25,740	305,395	228,354
PERCENT CHANGE		-4%		-3%		-13%		+8%
SEASONAL DUCK HARVEST PER ADULT HUNTER	5.44	6.81	11.56	12.94	6.28	6.50	8.69	10.06
PERCENT CHANGE		+25%		+12%		+3%		+16%

GOOSE SPECIES COMPOSITION

CANADA GOOSE	92.31%	84.62%	35.44%	58.01%	100.00%	100.00%	98.80%	97.96%
SNOW GOOSE	5.12	15.35	45.24	16.47	0.00	0.00	1.21	0.00
RULE GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WHITE-FRONTED GOOSE	2.56	0.00	16.38	20.19	0.00	0.00	0.00	2.04
PRANT	0.00	0.00	1.21	5.34	0.00	0.00	0.00	0.00
OTHER GESE	0.00	0.00	1.75	0.00	0.00	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

GOOSE HARVEST (RETRIEVED KILL)	1,254	1,123	210,907	260,851	546	544	13,170	11,989
PERCENT CHANGE		-10%		+24%		0%		-9%

SEASONAL GOOSE HARVEST PFR ADULT HUNTER	0.08	0.09	1.18	1.69	0.12	0.14	0.38	0.37
PERCENT CHANGE		+17%		+42%		+18%		-2%

COOT HARVEST (RETRIEVED KILL)	3,193	3,935	106,741	81,994	1,265	291	3,812	3,690
PERCENT CHANGE		+23%		-23%		-77%		-3%

SEASONAL COOT HARVEST PER ADULT HUNTER	0.19	0.31	0.57	0.51	0.26	0.07	0.10	0.11
PERCENT CHANGE		+61%		-12%		-72%		+4%

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TOTAL HUNTER DAYS	81,768	82,581	1,289,468	1,186,311	26,245	22,559	254,960	218,343
PERCENT CHANGE		+1%		-8%		-14%		-14%

DAYS PFR ADULT HUNTER	4.90	6.44	6.95	7.37	5.40	5.50	7.01	6.46
PERCENT CHANGE		+31%		+6%		+2%		-8%

TOTAL DUCK STAMPS SOLD	15,465	11,952	173,474	152,409	4,514	3,812	33,640	31,378
PERCENT CHANGE		-23%		-12%		-16%		-7%

PERCENT SOLD TO NON-HUNTERS	0.79%	1.35%	1.65%	2.80%	0.86%	1.04%	0.52%	0.92%
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TOTAL ADULT HUNTERS (POTENTIAL)	15,343	11,791	170,612	148,142	4,475	3,772	33,465	31,089
PERCENT CHANGE		-23%		-13%		-16%		-7%

PERCENT ACTIVE ADULT HUNTERS	75.5%	78.5%	84.4%	87.1%	82.9%	83.1%	81.3%	80.8%
PERCENT SUCCESSFUL ADULT HUNTERS	54.9%	63.4%	72.4%	75.2%	68.9%	67.1%	68.8%	71.4%

SAMPLE SIZES

DUCK WINGS	708	569	9,850	6,238	464	401	1,294	1,510
GOOSE TAILS	39	13	740	431	0	0	83	98
QUESTIONNAIRES	444	421	2,656	2,417	365	217	1,169	1,023

TABLE C-8. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN THE PACIFIC FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS--CONTINUED.

DUCK SPECIES COMPOSITION	MONTANA ^a		NEVADA		NEW MEXICO ^a		CREGCN
	1971	1972	1971	1972	1971	1972	
MALLARD	76.24%	55.40%	31.35%	32.26%	20.00%	30.19%	48.92%
DOMESTIC MALLARD	0.13	0.00	0.00	0.10	0.00	0.00	0.07
BLACK DUCK	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BLACK X MALLARD	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MOTTLED DUCK	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GADWALL	1.70	3.99	10.14	6.05	28.42	11.32	3.17
AMERICAN WIGEON	4.44	12.34	7.99	6.89	28.42	9.43	12.28
GREEN-WINGED TEAL	5.61	7.71	11.78	17.43	6.32	30.19	11.78
BLUE-WINGED/CINNAMON TEAL	0.65	4.50	4.71	3.65	0.00	0.00	0.41
NORTHERN SHOVELER	0.65	1.29	6.66	6.89	1.05	5.66	3.31
PINTAIL	6.27	9.90	18.24	22.13	5.26	13.21	12.28
WOOD DUCK	0.00	0.00	0.10	0.21	0.00	0.00	4.28
REDHEAD	0.78	1.03	4.30	1.25	1.05	0.00	1.45
CANVASBACK	0.13	0.00	1.95	0.10	0.00	0.00	2.83
GREATER SCAUP	0.00	0.26	0.00	0.10	0.00	0.00	0.27
LESSER SCAUP	0.78	0.51	0.62	0.31	5.26	0.00	0.72
RING-NECKED DUCK	0.52	0.39	0.62	0.31	1.05	0.00	0.22
GOLDENEYES	1.31	1.29	0.00	0.73	0.00	0.00	0.43
BUFFLEHEAD	0.13	0.77	0.51	0.00	2.11	0.00	1.08
PUDDY DUCK	0.13	0.13	0.62	1.57	1.05	0.00	1.51
CLOSCUAW	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FIDERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SCOTERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HCCOED Mergansers	0.26	0.13	0.00	0.00	0.00	0.00	0.14
OTHER Mergansers	0.26	0.26	0.31	0.00	0.00	0.00	0.48
OTHER DUCKS	0.00	0.13	0.10	0.00	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00
DUCK HARVEST (RETRIEVED KILL)	117,572	137,677	116,271	83,976	3,176	5,816	391,990
PERCENT CHANGE		+17%		-28%		+83%	+2%
SEASONAL DUCK HARVEST PER ADULT HUNTER	5.69	6.71	7.48	6.35	3.17	6.03	7.24
PERCENT CHANGE		+18%		-15%		+90%	+15%

GOOSE SPECIES COMPOSITION

CANADA GOOSE	100.00%	80.95%	95.45%	100.00%	100.00%	83.44%	93.75%
SNCW GOOSE	0.00	14.29	4.55	0.00	0.00	15.34	2.50
BLUE GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WHITE-FRONTED GOOSE	0.00	4.76	0.00	0.00	0.00	1.23	3.75
BRANT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER GOOSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00

GOOSE HARVEST (RETRIEVED KILL)	6,615	7,735	4,569	33	48	38,443	34,990
PERCENT CHANGE	-30%	-41%	+45%			-9%	
SEASONAL GOOSE HARVEST PER ADULT HUNTER	0.32	0.50	0.35	0.03	0.05	0.63	0.65
PERCENT CHANGE	-29%	-31%	+52%			+3%	

COOT HARVEST (RETRIEVED KILL)	866	2,132	3,466	12	131	10,789	14,336
PERCENT CHANGE	+442%	+63%	+992%			+33%	
SEASONAL COOT HARVEST PER ADULT HUNTER	0.04	0.13	0.25	0.01	0.13	0.17	0.25
PERCENT CHANGE	+450%	+90%	+992%			+49%	

TOTAL HUNTER DAYS	117,117	89,668	69,160	4,426	5,751	394,727	391,548
PERCENT CHANGE	+21%	-23%	+30%			-1%	
DAYS PER ADULT HUNTER	5.47	5.57	5.05	4.27	5.76	6.25	6.99
PERCENT CHANGE	+22%	-9%	+35%			+12%	

TOTAL DUCK STAMPS SOLD	19,896	15,029	12,701	962	928	58,730	52,203
PERCENT CHANGE	-1%	-15%	-4%			-11%	
PERCENT SOLD TO NON-HUNTERS	0.99%	1.52%	0.75%	0.83%	1.03%	1.09%	1.23%

TOTAL ADULT HUNTERS (POTENTIAL)	19,699	14,801	12,606	954	918	58,090	51,561
PERCENT CHANGE	-1%	-15%	-4%			-11%	
PERCENT ACTIVE ADULT HUNTERS	78.0%	80.9%	81.4%	76.7%	74.7%	81.1%	83.2%
PERCENT SUCCESSFUL ADULT HUNTERS	63.9%	64.9%	63.7%	53.1%	60.1%	64.0%	66.5%

SAMPLE SIZES							
DUCK WINGS	766	976	958	95	53	1,450	1,392
GOOSE TAILS	27	21	44	0	0	163	160
QUESTIONNAIRES	624	628	599	49	178	2,453	1,989

TABLE C-8. PERCENTAGE SPECIES COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN THE PACIFIC FLYWAY DURING THE 1971 AND 1972 HUNTING SEASONS--CONTINUED.

DUCK SPECIES COMPOSITION	UTAH			WASHINGTON			WYOMING ^a			PACIFIC FLYWAY TOTAL	
	1971	1972	%	1971	1972	%	1971	1972	%	1971	1972
MALLARD	32.15%	37.32%		61.29%	56.76%		69.37%	77.35%		32.45%	33.81%
DOMESTIC MALLARD	0.00	0.25		0.11	0.00		0.90	0.00		0.04	0.06
BLACK DUCK	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00
BLACK X MALLARD	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00
MOTTLED DUCK	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00
GADWALL	8.87	8.60		1.44	0.74		0.90	1.11		3.38	2.78
AMERICAN WIGEON	7.21	4.59		12.04	13.88		5.41	4.97		12.06	10.66
GREEN-WINGED TEAL	16.85	15.16		9.71	10.93		7.21	3.87		12.18	14.21
BLUE-WINGED/CINNAMON TEAL	3.71	2.70		0.11	0.31		0.00	0.00		1.65	2.65
NORTHERN SHOVELER	6.87	6.78		0.61	0.55		0.00	2.21		5.98	5.55
PINTAIL	16.57	16.11		8.76	10.69		11.71	2.76		24.44	24.26
WOOD DUCK	0.00	0.00		0.17	0.43		0.00	0.00		0.83	0.86
REDHEAD	4.16	2.55		0.83	0.37		1.80	0.00		1.30	0.69
CANVASBACK	0.89	0.07		0.11	0.00		0.90	0.55		1.38	0.05
GREATER SCAUP	0.05	0.00		0.28	0.18		0.00	0.00		0.44	0.51
LESSER SCAUP	0.61	0.80		0.22	0.31		0.00	0.00		0.82	0.56
RING-NECKED DUCK	0.05	0.80		0.28	1.11		0.00	0.00		0.46	0.69
GOLDENFYF	0.89	0.29		1.00	0.80		1.80	5.53		0.48	0.41
BUFFLEHEAD	0.28	0.36		2.27	1.41		0.00	1.11		3.77	0.57
RUDDY DUCK	0.44	2.33		0.05	0.00		0.00	0.55		1.04	1.26
OLDsquAW	0.00	0.00		0.00	0.06		0.00	0.00		0.01	0.01
FIDERS	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00
SCOTTERS	0.00	0.00		0.11	0.37		0.00	0.00		0.06	0.05
HOODED MergANSERS	0.00	0.00		0.33	0.61		0.00	0.00		0.07	0.15
OTHER MergANSERS	0.35	0.80		0.28	0.43		0.00	0.00		0.16	0.18
OTHER DUCKS	0.00	0.00		0.00	0.06		0.00	0.00		0.01	0.04
TOTAL	100.00	100.00		100.00	100.00		100.00	100.00		100.00	100.00
DUCK HARVEST (RETRIEVED KILL)	346,400	235,750		498,131	550,797		10,029	11,466		3,969,625	3,871,731
PERCENT CHANGE		-31%			+11%			+14%			-2%
SEASONAL DUCK HARVEST PER ADULT HUNTER	8.86	6.93		6.26	7.56		5.38	6.39		8.75	9.62
PERCENT CHANGE		-22%			+21%			+19%			+10%

GOOSE SPECIES COMPOSITION

CANADA GOOSE	94.23%	84.25%	94.41%	100.00%	100.00%	100.00%	54.24%	68.46%
SNOW GOOSE	5.77%	14.96%	1.24%	0.00%	0.00%	0.00%	33.06%	12.44%
BLUE GOOSE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
WHITE-FRONTED GOOSE	0.00%	0.00%	0.62%	0.00%	0.00%	0.00%	10.72%	14.94%
BANT	0.00%	0.79%	3.73%	0.00%	0.00%	0.00%	0.88%	4.16%
OTHER GOOSE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.11%	0.00%
TOTAL	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

GOOSE HARVEST (RETRIEVED KILL)	11,820	44,002	32,625	1,043	980	330,390	364,165
PERCENT CHANGE	+78%	-26%			-6%		+10%

SEASONAL GOOSE HARVEST PER ADULT HUNTER	0.17	0.56	0.45	0.56	0.55	0.73	0.91
PERCENT CHANGE	+101%	-19%			-2%		+24%

COOT HARVEST (RETRIEVED KILL)	8,808	11,849	7,342	203	98	151,186	128,789
PERCENT CHANGE	-15%	-38%			-52%		-15%

SEASONAL COOT HARVEST PER ADULT HUNTER	0.25	0.14	0.10	0.10	0.05	0.32	0.31
PERCENT CHANGE	-4%	-32%			-50%		-4%

TOTAL HUNTER DAYS	224,397	592,170	520,553	9,878	8,975	3,097,122	2,871,542
PERCENT CHANGE	-5%	-12%			-9%		-7%

DAYS PER ADULT HUNTER	6.27	7.19	6.90	5.12	4.83	6.59	6.89
PERCENT CHANGE	+7%	-4%			-6%		+5%

TOTAL DUCK STAMPS SOLD	33,042	77,067	69,743	1,781	1,744	438,146	389,586
PERCENT CHANGE	-12%	-10%			-2%		-11%

PERCENT SOLD TO NON-HUNTERS	0.31%	1.71%	0.49%	0.30%	1.96%	1.35%	1.57%
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TOTAL ADULT HUNTERS (POTENTIAL)	32,940	75,749	69,401	1,776	1,710	432,225	383,464
PERCENT CHANGE	-12%	-8%			-4%		-11%

PERCENT ACTIVE ADULT HUNTERS	86.7%	81.5%	81.7%	81.8%	76.4%	82.6%	84.3%
PERCENT SUCCESSFUL ADULT HUNTERS	76.5%	65.5%	67.8%	67.6%	66.0%	68.8%	71.0%

SAMPLE SIZES

DUCK WINGS	1,804	1,803	1,628	111	181	19,321	15,080
GOOSE TAILS	60	127	161	31	20	1,291	1,004
QUESTIONNAIRES	1,273	1,245	1,391	218	111	11,124	9,830

a Includes only that portion of the State lying within the Pacific Flyway.

TABLE C-9. PERCENTAGE COMPOSITION OF WATERFOWL HARVESTED, TOTAL NUMBERS HARVESTED, AND ADULT HUNTER STATISTICS IN ALASKA AND FOR THE ENTIRE UNITED STATES DURING THE 1971 AND 1972 HUNTING SEASONS.

DUCK SPECIES COMPOSITION	ALASKA			UNITED STATES		
	1971	1972	TOTAL	1971	1972	TOTAL
MALLARD	30.05%	26.13%	35.90%	36.19%		
DOMESTIC MALLARD	0.11	0.00	0.11	0.14		
BLACK DUCK	0.00	0.00	2.83	2.65		
BLACK X MALLARD	0.00	0.00	0.07	0.13		
MOTTLED CUCK	0.00	0.00	0.82	1.08		
GADWALL	0.79	0.55	5.35	5.63		
AMERICAN WIGEON	18.93	16.63	6.54	6.60		
GREEN-WINGED TEAL	11.57	13.45	9.15	10.08		
BLUE-WINGED/CINNAMON TEAL	0.00	0.22	6.46	6.11		
NORTHERN SHOVELLER	3.97	5.32	3.06	3.48		
PINTAIL	24.26	27.54	9.29	9.52		
WOOD DUCK	0.00	0.00	6.62	6.77		
REDHEAD	0.00	0.00	1.58	0.39		
CANVASBACK	0.11	0.38	1.01	0.03		
GREATER SCAUP	1.13	2.05	0.74	1.02		
LESSER SCAUP	1.59	2.91	3.70	3.51		
RING-NECKED DUCK	0.11	0.11	3.04	2.59		
GOLDENEYES	1.93	1.55	0.64	0.77		
BUFFLEHEAD	1.13	1.21	1.17	1.18		
RUDDY DUCK	0.00	0.00	0.67	0.84		
OLDSQUAW	1.59	0.05	0.13	0.11		
EIDEES	0.23	0.00	0.10	0.14		
SCOTERS	1.70	0.77	0.41	0.34		
HOODED Mergansers	0.11	0.00	0.41	0.41		
OTHER Mergansers	0.45	0.49	0.19	0.23		
OTHER DUCKS	0.22	0.17	0.02	0.07		
TOTAL	100.00	100.00	100.00	100.00		
DUCK HARVEST (RETRIEVED KILL)	73,106	89,025	13,950,481	13,641,817		
PERCENT CHANGE		+22%		-2%		
SEASONAL DUCK HARVEST PER ADULT HUNTER	4.88	5.77	5.58	6.05		
PERCENT CHANGE		+18%		+8%		

GOOSE SPECIES COMPOSITION

CANADA GOOSE	72.46%	82.91%	56.86%	63.68%
SNOW GOOSE	3.62	2.56	18.94	17.38
BLUE GOOSE	0.00	0.00	11.75	8.47
WHITE-FRONTED GOOSE	17.39	7.65	6.56	9.13
BRANT	2.17	3.42	5.60	1.32
OTHER GOOSE	4.25	2.42	0.30	0.03
TOTAL	100.00	100.00	100.00	100.00

GOOSE HARVEST (RETRIEVED KILL)	16,774	8,987	1,471,346	1,174,315
PERCENT CHANGE		-46%		-20%

SEASONAL GOOSE HARVEST PER ADULT HUNTER	1.13	0.55	0.60	0.53
PERCENT CHANGE		-48%		-12%

COOT HARVEST (RETRIEVED KILL)	925	479	821,256	964,920
PERCENT CHANGE		-48%		+17%

SEASONAL COOT HARVEST PER ADULT HUNTER	0.06	0.03	0.32	0.41
PERCENT CHANGE		-49%		+30%

TOTAL HUNTER DAYS	71,143	70,213	16,640,964	15,234,382
PERCENT CHANGE		-1%		-8%

DAYS PER ADULT HUNTER	4.59	4.39	6.51	6.61
PERCENT CHANGE		-4%		+2%

TOTAL DUCK STAMPS SOLD	14,423	14,918	2,411,739	2,176,081
PERCENT CHANGE		+3%		-10%

PERCENT SOLD TO NON-HUNTERS	1.12%	1.43%	1.14%	1.23%
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TOTAL ADULT HUNTERS (PCTENTIAL)	14,261	14,705	2,384,205	2,149,270
PERCENT CHANGE		+3%		-10%

PERCENT ACTIVE ADULT HUNTERS	69.7%	72.7%	83.6%	84.6%
PERCENT SUCCESSFUL ADULT HUNTERS	55.2%	59.5%	65.4%	66.9%

SAMPLE SIZES				
DUCK WINGS	882	1,822	70,467	64,266
GOOSE TAILS	138	117	7,515	5,932
QUAFFIONNAIRES	968	1,138	69,202	55,967

TABLE C-10. Proportions of the total duck harvest occurring after the September teal season in certain States during 1969, 1970, 1971, and 1972.

Flyway State	Proportion in Regular Season			
	1969	1970	1971	1972
Atlantic				
Maine	--	.9418	.9566	.9607
Mississippi				
Alabama	.9651	.9801	.9631	.9624
Arkansas	.9850	.9868	.9907	.9854
Illinois	.9398	.9321	.9335	.9625
Indiana	.9523	.9288	.9210	.9249
Iowa	.8008	--	--	--
Louisiana	.8975	.9047	.9114	.9030
Mississippi	.9909	.9891	.9880	.9902
Missouri	.9174	.9065	.9271	.9314
Ohio	.9538	.9567	.9381	.9438
Tennessee	--	.9927	.9695	.9846
Central				
Colorado	.9775	.9641	.9507	.9728
Kansas	.8788	.8624	.9071	.9285
Montana	.9723	.9320	--	--
Nebraska	.8630	.8941	--	--
New Mexico	.9597	.9476	.9439	.9710
North Dakota	.8876	--	--	--
Oklahoma	.9685	.9410	.9547	.9491
Texas	.9443	.9661	.9589	.9566
Wyoming	.9407	--	--	--

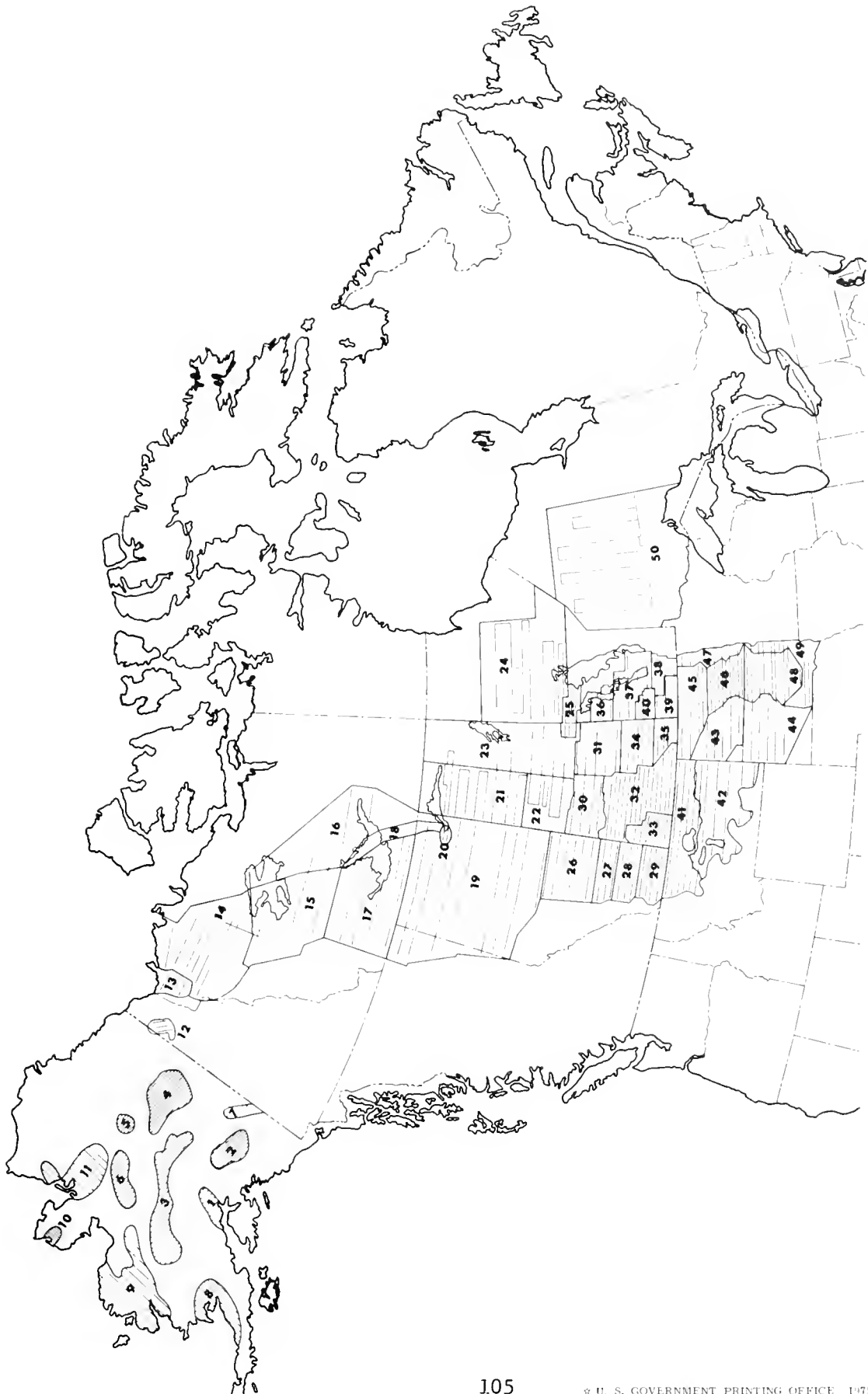


Figure 1. TRANSECTS AND STRATA FOR AERIAL WATERFOWL BREEDING POPULATION AND PRODUCTION SURVEYS

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



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