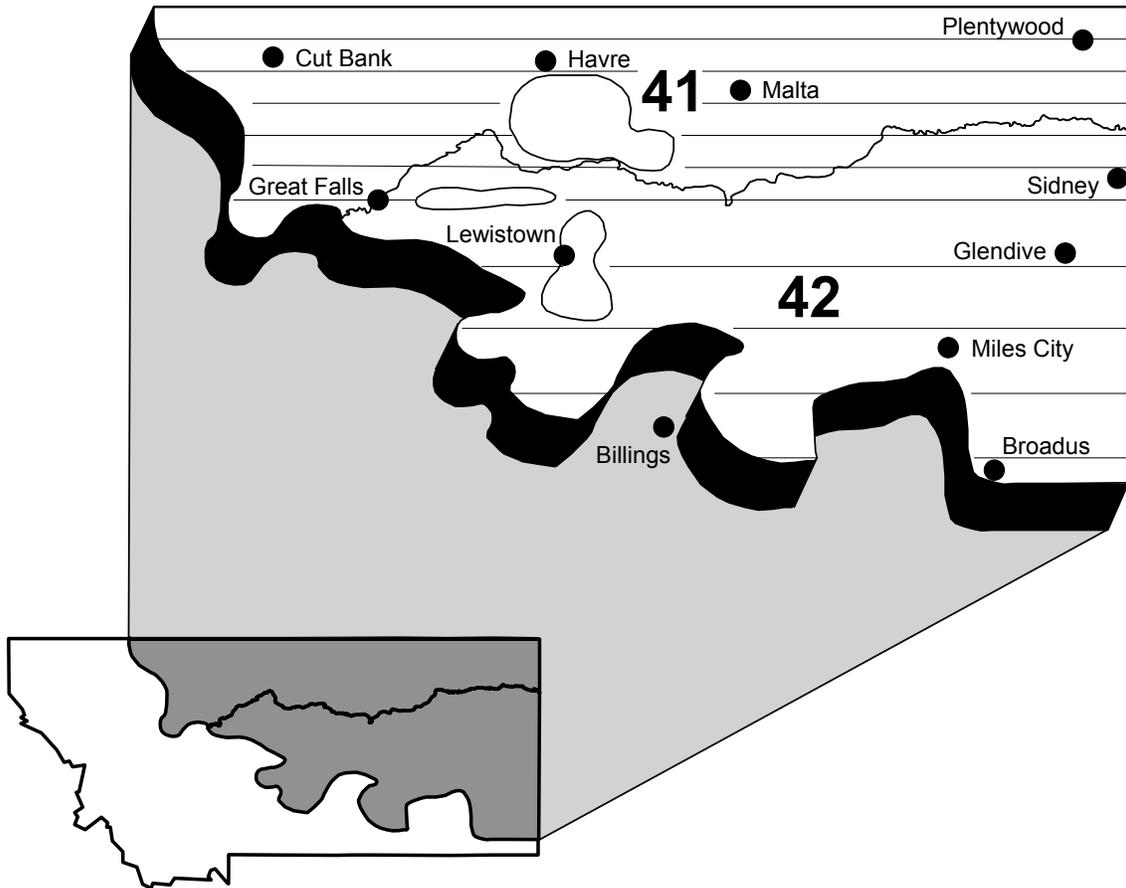


Waterfowl Breeding Population Survey
for

MONTANA



2003

Title: Waterfowl Breeding Population Survey for Montana

Strata Surveyed: 41 and 42

Dates: May 8-19, 2003

Data Supplied by: U.S. Fish and Wildlife Service (USFWS)
Division of Migratory Bird Management (DMBM)

Aerial Crew:

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Abstract

The 2003 waterfowl breeding population survey for Montana was completed on May 19 with all segments and transects covered as outlined in the survey design. General increase in winter/spring precipitation yielded an increase in pond numbers over 2002 of 58.4%. This value nearly matches the long-term mean value but remains 10.4% below the 10-year mean. Waterfowl population estimates also showed increases from 2002 with all dabbling species increasing. However northern pintail and American widgeon still remain significantly below the long-term mean with similar negative departures from the 10-year mean. Mallards observations increased 50.6% over 2002 and nearly matched the long term mean (-3.3%) but remain below the 10-year mean by 23%. Diver species, along with anomalies due to small sample size generally reflected slightly improved conditions over 2002 however scaup remains below long-term mean values by 33%. Canada goose population estimates are nearly at the long term mean having decreased from 2002 by 31%. Though mitigated by recent year's deficit in suitable habitat and by current non-favorable agricultural practices, 2003 is predicted to be an improvement over 2002 in waterfowl nesting effort and should yield average to slightly above average production.

Methods:

Procedures followed in conducting this survey are described in the Standard Operating Procedures for Aerial Breeding Ground Surveys in North America, Section III, revised 1987, 2003 revision pending. The survey design for Montana included 11 air/ground comparison segments comprising 5.7% of the total 193 segments flown. All segments specified in the survey design were counted.

Air and ground crew members met in Pierre South Dakota on April 30. Survey flight were initiated in Montana on May 8 and continued through May 19. Flights were canceled on May 9, 10, 13, 16, and 18 due to adverse weather conditions. Data were collected for the western Dakotas on May 2-7 and sent to John Solberg for inclusion in that South Dakota/North Dakota report.

A Cessna TR182 (N705) was used to fly the survey over approximately 61 hours of flight time. Survey personnel included Jim Voelzer as pilot/observer, Ray Bentley as pilot/observer, Pam Garrettson as ground crew leader, Ken Richkus as ground crew assistant, and Loren Ridenour as ground crew assistant. This marked Jim's 26th season flying this particular survey and Ray's 3rd season on this survey. 2003 was Pam's 4th season collecting ground reference data with Ken and Loren completing their first season.

Aerial observations were collected using onboard PC computers interfaced with the aircraft's GPS receiver providing geo-referenced data recording. Each observation was marked with time and lat/long and processed using software developed by Jack Hodges,

USFWS/DMBM, Juneau, Alaska. Filed processed data files were then submitted to Mark Otto, Population and Habitat Assessment Section (PHAS) USFWS/DMBM and Kristi Wilkins (PHAS) in Laurel Maryland for development of visibility correction factors and table compilation.

Weather and Habitat Conditions:

Eastern Montana has been under the influence of a moderate to severe drought cycle since 2000 with below normal winter/spring precipitation and associated poor habitat conditions. Beginning late fall of 2002 however condition improved. By 2003 the Standardized Precipitation Index (SPI) (NOAA) showed a composite of areas classified as moist, normal, and dry largely determined by the position and ground track of 3 large storm systems occurring from February to April. In general precipitation levels approached those of “normal” east of a line drawn north to south through the Billings/Lewistown region. Spring precipitation was considered moist (.8 - 1.29 inches above normal) in the northwest portions of the strata with dry conditions prevailing in the southwest region. The increases in early spring precipitation elevated the Palmer Drought Index (PDI), a measure of relative periodic climate fluctuations, to “normal” in the northeast in the northeast region, transitioning to ratings of D₀ to D₂ or dry, moderate drought, and severe drought as you proceed west. Spring precipitation is but one element in determining condition of waterfowl nesting habitat with agricultural practices in eastern Montana reducing the favorable effects of increased spring precipitation on upland nesting cover and shoreline vegetation associated with riparian and basin habitats. Our surveys showed a mosaic of nesting habitat classifications with good conditions in the northeast, southeast, and central regions of the strata and areas of fair and poor conditions to the northwest and southwest. As usual the area immediately east of the Rocky Mountains, influenced more by run off and located at higher elevations showed good habitat condition. Total estimated pond counts were 260,800, a 58% increase from 2002 and nearly matching the long term mean (Table 2). The period of the late 90s with several very moist years yields a 10 year mean still 10% higher than 2003 but much improved from 2002 estimates which were nearly 40% below the 10 year mean.

Stratum 41(North of the Missouri River)

This area showed pond count estimates at 136,400, a 91.4% increase from 2002, and up over 7% from the long-term mean of 127,000. Large areas of habitat classified as “good” prevailed in the northeast quarter with fair and good regions across the central region west to Havre. The western quarter between Great falls and Cut bank remained poor even though upland and riparian vegetation showed improvement from 2002. As mentioned the area west and north of Cut Bank continued to show good habitat

conditions both in pond densities and nesting cover. This region has responded to increased winter/spring precipitation and despite extensive cutting and livestock grazing should show average to slightly improved waterfowl production over 2002.

Stratum 42 (South of the Missouri River)

The region south of the Missouri River also showed an improvement in pond estimates from 2002 with a 33.2 % increase at 124,400. This still remains over 14% below the 10 year mean and slightly (4.2%) below the long term mean. Given that the strata was in a considerable deficit from the preceding three years of severe drought a continued slightly negative departure from long term reference values is to be expected. Poor conditions still exist in the northeast and southwest quarters with largely fair and good conditions across the central region east of Lewistown. The area west of Billings remains under the influence of drought conditions having been passed over by several large moisture producing spring storm systems. Upland vegetation showed some positive response to increased moisture however conditions remain less than ideal for waterfowl nesting. Projected and assumed increases from 2002 will likely only result in average or slightly above average production.

Breeding Population Estimates

Initial ground and subsequent aerial observations indicated that survey timing for key species was appropriate. By May 1 mallard pairs and single males were observed on established territories with a few flocked males appearing by May 5. All expected species were present and little evidence of transient flocks or large groups of non nesting pairs. While some pair crowding was evident on isolated water bodies, in general such observations were the exception with normal pair densities and expected nesting behavior.

Population estimates for dabbling species totaled 894,300 in 2003 (Table 1). This represents a 66% increase over the somewhat dismal estimate of 2002 and nearly matches the long-term mean of 855,100 (+4.6%). The total dabbling population estimate remained 17.3% below the 10-year mean. The largest increases over 2002 and other reference points occurred with American green-winged teal at over 129% of the long term mean and nearly 60% above the 10 year mean. Mallard, a key species showed increases from 2002 of 50.6% at 279,700 nearly matching the long term mean (- 3.3%) but remained below the 10 year mean. All dabbling species showed improvements over 2002 with blue-

wing teal increasing by over 133%. Northern pintail estimates of 95,000 were up considerably from 2002 (102.2%) but remain 39% below the long-term mean.

Population estimates for diving ducks increased from 2002 by 15% and from the 10 year mean by 10.5% at 57,000. Scaup represented the majority of diving species encountered with an estimated 24,600 birds and a 19.5 % increase from 2002. Scaup numbers still remain below the 10-year mean and well below the long term mean of 36,700(-33%). A 6.5% departure below the long term mean for combined diving species is a combination of both positive and negative changes of selected species ranging from a 95% increase in canvasback to an 86% decrease in ring-necked ducks. These large deviations from historic reference points are to be expected with historic low frequency of occurrence. Redheads, while 11.5 % below 2002 estimates, continued to increase over 10-year and long-term means by 58% and 41% respectively.

Canada goose population estimates declined from 2002 by 31%. There was also a decline from the 10-year mean by 36.6% though 2003 represented a nearly average year for goose numbers when compared to the long-term mean.

American coot observations showed a declining trend across all endpoints. 2002 showed an increase in coots from the previous year but by this season numbers were down again at nearly 60% below the long-term mean and 53% below the 10-year mean.

During the 2003 survey period waterfowl estimates were significantly greater in stratum 41 than in 42 for both dabbling and diving species and was consistent by species within groups.

This trend was most notable in mallard and gadwall with stratum 41 showing more birds by a factor of 1.82 and 3.25 respectively.

Graphs #1 through #26 provide a visual depiction trends in populations estimates over long term.

Conclusions:

Observations on 2003 indicate a general improvement over recent years in habitat and waterfowl populations. Significant though occasionally isolated winter and spring precipitation events produced an increase in pond numbers from 2002 and nearly matched what could be called normal for the region. Mild temperatures in Feb-April caused vegetative growth to be well under way by early May with good upland habitat evident in much of strata 41 and 42. The exception was a large area east of Cut Bank

which remained dry with non-favorable conditions for waterfowl production. However the appearance of moisture in eastern Montana was significantly offset by the relatively poor conditions going into fall 2002 and by agricultural practices of grazing and cutting of upland range (primarily CRP). This is reflected in the data as large increases in pond numbers from 2002 bringing long term estimates to near normal yet remaining below the recent 10-year mean values. Entry into riparian and upland habitats for agricultural use mitigated many of the positive effects of increased moisture resulting in more ponds but not necessarily more habitat. As expected many water basins while containing water and waterfowl, showed relatively poor adjacent upland and riparian nesting cover. Waterfowl numbers generally showed increases from the recent year's low estimates with many species approaching long term mean values. The 10-year mean values include the late 90s when waterfowl numbers were often well above long-term estimates and thus remain above 2003 numbers. The large fluctuations in less frequently encountered species is a normal byproduct of low sample size as in the case of canvasback, goldeneye, and mergansers. Scaup and northern pintail remain species of concern as estimates as estimates while above 2002 still have failed to recover from earlier record low numbers. The region's Canada goose population seems to be declining from recent increases and now represents what has been established as normal from long term mean values. In general waterfowl breeding populations in eastern Montana are improved over the recent three years as habitat conditions responded to increased moisture in the area. These improvements served to elevate an area of depressed waterfowl production up to a normal level. If adequate early summer precipitation continues and provides favorable brood habitat, waterfowl productions is expected to be average to slightly above average for 2003.

Table 1. Status of waterfowl breeding population estimates (thousands, adjusted for visibility bias) by species and stratum with comparison against the previous year, the previous 10-year mean, and the long-term mean for Montana.

Species/Ponds	Stratum (2003)		2003 Total	2002 Total	10-Year Mean	% Change From		2002	10-Year Mean	Long-Term Mean
	41	42				Long-Term Mean	2002			
Ducks										
Dabblers										
Mallard	180.7	99.0	279.7	185.8	364.9	289.4	50.6%	-23.3%	-3.3%	
Am. black duck	0.0	0.0	0.0	0.0	0.0	0.0	--	--	--	
Gadwall	83.4	25.7	109.1	87.3	226.9	116.3	24.9%	-51.9%	-6.2%	
Am. wigeon	19.6	11.1	30.7	28.6	82.6	82.4	7.6%	-62.8%	-62.7%	
Am. green-winged teal	28.1	22.0	50.2	40.6	30.2	21.8	23.6%	65.8%	129.5%	
Blue-winged teal	120.9	50.3	171.2	73.3	123.2	97.6	133.4%	39.0%	75.4%	
N. shoveler	105.9	52.6	158.5	76.2	123.6	91.2	108.1%	28.3%	73.8%	
N. pintail	74.3	20.7	95.0	47.0	130.2	156.4	102.2%	-27.1%	-39.3%	
Subtotal	613.0	281.3	894.3	538.7	1081.6	855.1	66.0%	-17.3%	4.6%	
Divers										
Redhead	8.4	0.0	8.4	9.5	5.3	5.9	-11.5%	58.4%	41.2%	
Canvasback	7.4	3.2	10.6	1.2	6.4	5.4	748.9%	64.2%	95.2%	
Scaups	11.8	12.8	24.6	20.6	27.2	36.7	19.5%	-9.4%	-33.0%	
Ring-necked duck	0.3	0.0	0.3	1.1	2.5	2.3	-71.4%	-86.9%	-86.1%	
Goldeneyes	0.0	0.0	0.0	1.6	0.7	0.8	-100.0%	-100.0%	-100.0%	
Bufflehead	0.6	0.0	0.6	0.5	0.9	1.4	16.8%	-29.5%	-55.0%	
Ruddy Duck	8.9	3.6	12.5	14.9	8.6	8.3	-16.0%	45.4%	50.4%	
Subtotal	37.5	19.5	57.0	49.5	51.6	60.9	15.1%	10.5%	-6.5%	
Miscellaneous										
Long-tailed duck	0.0	0.0	0.0	0.0	0.1	0.0	--	-100.0%	-100.0%	
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	--	--	--	
Scoters	0.5	0.0	0.5	0.0	0.1	0.0	--	499.5%	1455.7%	
Mergansers	3.3	1.4	4.7	8.6	4.4	2.5	-45.2%	8.1%	87.6%	
Subtotal	3.8	1.4	5.2	8.6	4.5	2.6	-39.4%	15.8%	103.6%	
Total Ducks	654.2	302.2	956.5	596.8	1137.7	918.6	60.3%	-15.9%	4.1%	
Canada	24.0	32.9	56.9	82.8	89.8	55.0	-31.3%	-36.6%	3.5%	
Goose										
Am. coot	23.2	4.2	27.4	36.3	58.2	63.6	-24.5%	-52.8%	-56.9%	
Ponds	136.4	124.4	260.8	164.7	290.5	257.1	58.4%	-10.2%	1.4%	

Table 2. Long-term trend in adjusted May pond estimates (thousands) by stratum with comparisons against the previous year, the previous 10-year mean, and the long-term mean for Montana.

Year	Stratum		Total
	41	42	
1974	142.4	66.9	209.2
1975	150.6	128.8	279.4
1976	109.3	126.3	235.5
1977	70.4	88.2	158.6
1978	145.7	156.2	301.9
1979	135.0	106.2	241.2
1980	77.9	74.4	152.3
1981	103.3	73.0	176.3
1982	147.1	126.5	273.5
1983	85.2	88.7	173.9
1984	88.6	117.5	206.2
1985	127.3	160.0	287.3
1986	190.4	206.3	396.7
1987	102.2	127.1	229.3
1988	78.3	92.0	170.3
1989	160.5	177.3	337.8
1990	121.7	124.3	246.0
1991	111.6	130.1	241.6
1992	95.6	140.0	235.5
1993	94.3	100.5	194.8
1994	227.4	251.1	478.5
1995	164.1	184.7	348.8
1996	209.4	174.7	384.1
1997	154.3	160.2	314.5
1998	149.4	176.0	325.4
1999	227.6	149.8	377.3
2000	74.6	88.0	162.6
2001	74.2	79.7	154.0
2002	71.3	93.4	164.7
2003	136.4	124.4	260.8
10-year Mean	144.7	145.8	290.5
Long-term Mean	127.2	129.9	257.1
Percent Change:			
From 2002	91.40%	33.20%	58.40%
From 10-year Mean	-5.70%	-14.70%	-10.20%
From Long-term Mean	7.20%	-4.20%	1.40%

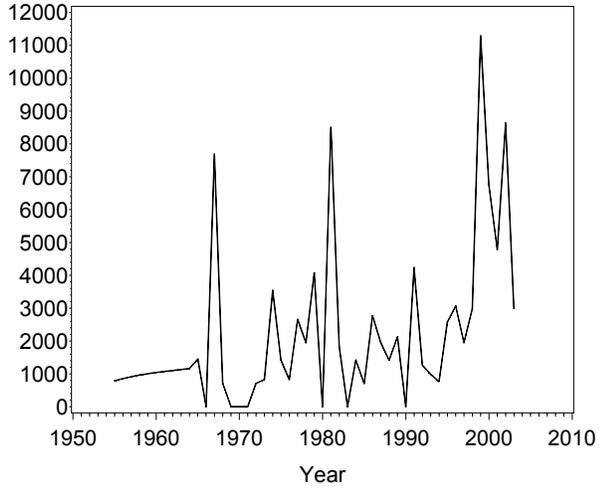
Appendix 1. Long-term trend in adjusted waterfowl breeding population estimates (thousands).

Species/Ponds	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Ducks										
Dabblers										
Mallard	363.3	489.4	320.9	198.5	291.3	311.5	273.9	374.2	261.3	198.2
Am. black duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gadwall	147.9	130.5	100.0	93.7	94.3	53.3	49.1	15.5	11.8	69.6
Am. wigeon	36.8	43.2	63.6	68.6	85.8	92.6	58.3	129.8	99.2	76.8
Am. green-winged teal	22.5	18.4	29.9	20.5	8.6	28.2	11.5	31.7	51.5	21.9
Blue-winged teal	137.5	133.3	82.9	53.2	149.9	99.3	87.1	17.0	8.5	77.7
N. shoveler	65.7	83.1	98.6	78.0	109.6	64.9	65.5	61.1	47.2	58.1
N. pintail	287.4	262.9	277.3	72.2	156.4	191.2	124.3	240.6	167.7	116.8
Subtotal	1061.2	1160.7	973.1	584.9	895.9	840.9	669.7	870.0	647.3	619.2
Divers										
Redhead	2.6	4.2	12.4	1.4	2.6	2.0	2.4	0.0	2.4	1.0
Canvasback	3.1	0.5	1.6	3.5	5.5	3.6	5.6	6.7	9.6	1.3
Scaups	27.8	44.7	43.0	27.0	50.0	33.2	15.6	39.5	49.2	35.8
Ring-necked duck	3.3	0.9	7.4	2.9	0.2	0.0	0.0	0.0	0.0	2.1
Goldeneyes	0.0	1.3	0.0	0.0	0.6	0.0	0.0	8.8	2.4	0.0
Bufflehead	1.3	1.3	0.4	2.1	1.4	0.4	0.0	1.7	0.6	1.7
Ruddy Duck	0.0	2.7	1.7	1.5	22.3	0.6	1.3	5.7	3.1	1.8
Subtotal	38.1	55.7	66.4	38.3	82.7	39.9	25.0	62.4	67.4	43.8
Miscellaneous										
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoters	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mergansers	1.4	0.0	7.7	0.7	0.0	0.0	0.0	0.7	0.8	3.5
Subtotal	1.4	0.0	7.8	0.7	0.0	0.0	0.0	0.7	0.8	3.5
Total Ducks	1100.7	1216.4	1047.3	623.9	978.6	880.8	694.6	933.1	715.5	666.6
Canada Goose	19.0	0.0	44.9	42.2	42.2	50.4	61.2	31.6	14.0	22.1
Am. coot	13.9	19.4	23.4	58.1	31.0	22.3	9.6	17.5	38.0	22.2
Ponds										209.2
Species/Ponds	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Ducks										
Dabblers										
Mallard	478.4	168.0	171.0	282.5	258.3	256.2	245.8	323.5	230.1	189.8
Am. black duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gadwall	72.9	55.3	19.7	174.8	78.6	83.5	119.9	95.1	71.0	38.3
Am. wigeon	110.6	99.7	77.1	157.0	87.9	148.9	65.2	89.4	77.9	73.0
Am. green-winged teal	53.1	13.6	3.9	18.2	40.1	9.9	9.1	13.4	18.9	10.6
Blue-winged teal	98.3	207.1	93.8	93.9	117.5	103.4	81.8	211.0	79.9	52.1
N. shoveler	100.2	102.2	31.1	179.2	189.6	52.2	121.8	160.7	61.8	65.0
N. pintail	259.2	226.0	118.5	348.9	324.8	146.6	157.3	306.9	88.3	99.8
Subtotal	1172.8	871.9	514.9	1254.7	1096.7	800.7	801.0	1200.0	627.9	528.6
Divers										
Redhead	0.7	2.7	3.2	7.0	14.7	4.4	25.0	15.0	10.5	19.2
Canvasback	2.1	16.2	3.2	6.4	10.4	4.8	5.4	12.5	5.0	3.5
Scaups	26.4	29.9	34.4	72.1	88.6	36.8	35.8	61.0	47.1	53.3
Ring-necked duck	0.0	1.4	0.2	0.8	0.0	0.9	0.9	2.4	16.3	3.0
Goldeneyes	0.0	0.0	0.6	0.0	1.1	1.6	0.0	0.0	0.0	0.6
Bufflehead	0.4	0.6	0.0	1.3	3.6	1.0	2.4	5.6	0.4	1.8
Ruddy Duck	2.6	1.9	1.2	14.1	12.4	0.7	17.1	17.8	9.1	11.8
Subtotal	32.2	52.7	42.8	101.7	130.8	50.1	86.6	114.2	88.3	93.1
Miscellaneous										
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoters	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Mergansers	1.4	0.8	2.7	1.9	4.1	0.0	8.5	1.8	0.0	1.4
Subtotal	1.4	0.8	2.7	1.9	4.1	0.0	8.5	1.8	0.2	1.4
Total Ducks	1206.4	925.4	560.3	1358.3	1231.5	850.8	896.0	1316.0	716.5	623.1
Canada Goose	23.1	27.0	26.3	27.9	41.6	36.6	31.3	37.1	34.6	51.1
Am. coot	13.8	59.5	16.4	83.1	319.4	104.2	197.7	53.3	42.9	103.5
Ponds	279.4	235.5	158.6	301.9	241.2	152.3	176.3	273.5	173.9	206.2

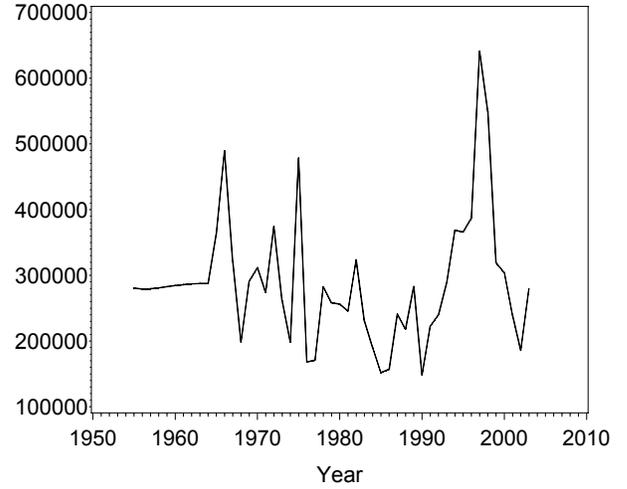
Appendix 1 (continued). Long-term trend in adjusted waterfowl breeding population estimates (thousands).

Species/Ponds	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Ducks										
Dabblers										
Mallard	152.0	156.9	240.9	218.0	282.8	148.4	222.7	239.9	288.6	368.7
Am. black duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gadwall	40.8	33.8	32.6	30.7	128.5	56.7	96.9	154.4	181.5	182.9
Am. wigeon	58.7	52.0	64.9	44.0	58.8	126.2	70.3	88.2	65.5	137.7
Am. green-winged teal	6.4	6.2	6.0	12.0	17.0	15.7	12.4	16.3	8.4	34.0
Blue-winged teal	38.6	21.6	40.2	83.5	65.9	76.3	77.7	89.0	60.3	186.4
N. shoveler	34.1	69.3	73.2	33.7	58.6	86.3	51.5	27.1	92.7	194.3
N. pintail	56.5	95.9	146.0	61.6	58.0	131.2	43.1	75.5	130.4	244.5
Subtotal	387.0	435.6	603.8	483.6	669.6	640.6	574.7	690.4	827.4	1348.5
Divers										
Redhead	2.7	3.6	3.4	2.7	7.0	7.8	6.4	5.5	5.3	3.4
Canvasback	2.1	2.8	1.0	2.1	5.1	10.8	1.0	5.6	9.3	12.5
Scaups	20.0	33.4	44.7	55.9	46.9	33.1	25.2	14.0	28.3	28.6
Ring-necked duck	4.3	7.1	0.4	1.2	3.8	0.4	0.5	3.9	4.0	5.0
Goldeneyes	1.3	2.5	0.0	0.0	1.1	0.6	0.7	0.0	1.5	0.0
Bufflehead	1.0	0.4	0.0	4.1	1.7	6.0	2.2	1.3	0.4	0.3
Ruddy Duck	8.0	4.6	0.6	25.1	5.8	9.2	38.0	9.2	1.8	4.7
Subtotal	39.3	54.5	50.2	91.2	71.4	67.9	73.9	39.6	50.6	54.5
Miscellaneous										
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoters	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mergansers	0.7	2.8	1.9	1.4	2.1	0.0	4.2	1.3	1.0	0.8
Subtotal	0.7	2.8	1.9	1.4	2.1	0.0	4.2	1.3	1.0	0.8
Total Ducks	427.1	492.9	656.0	576.2	743.1	708.6	652.8	731.3	879.0	1403.7
Canada Goose	49.4	32.9	39.4	67.1	79.3	97.7	70.8	90.5	103.3	76.3
Am. coot	145.2	32.1	27.2	95.5	65.9	153.4	52.9	15.3	58.3	56.8
Ponds	287.3	396.7	229.3	170.3	337.8	246.0	241.6	235.5	194.8	478.5
Species/Ponds	1995	1996	1997	1998	1999	2000	2001	2002	2003	
Ducks										
Dabblers										
Mallard	366.0	386.9	641.2	549.5	319.0	304.1	239.1	185.8	279.7	
Am. black duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
Gadwall	359.3	201.7	513.5	232.7	205.3	125.9	179.0	87.3	109.1	
Am. wigeon	116.9	100.2	122.4	92.9	63.1	57.6	41.6	28.6	30.7	
Am. green-winged teal	30.3	56.1	58.1	13.3	27.2	16.5	18.1	40.6	50.2	
Blue-winged teal	94.4	89.3	138.1	225.5	241.5	50.0	72.8	73.3	171.2	
N. shoveler	81.4	109.3	209.1	90.5	235.6	60.3	86.1	76.2	158.5	
N. pintail	154.5	135.6	209.3	110.9	131.8	58.7	79.0	47	95.0	
Subtotal	1202.8	1079.1	1891.7	1315.4	1223.5	673.1	715.7	538.7	894.3	
Divers										
Redhead	3.4	8.1	4.3	6.1	6.3	1.8	4.8	9.5	8.4	
Canvasback	8.0	4.6	9.6	6.1	4.9	3.5	4.5	1.2	10.6	
Scaups	21.4	35.9	32.7	14.1	28.0	30.7	31.5	20.6	24.6	
Ring-necked duck	7.0	0.4	0.0	2.1	2.4	0.0	2.9	1.1	0.3	
Goldeneyes	0.4	0.0	0.9	0.7	1.4	0.5	0.0	1.6	0.0	
Bufflehead	0.5	0.0	2.2	1.5	1.1	1.7	0.6	0.5	0.6	
Ruddy Duck	7.0	1.2	8.9	11.8	8.3	2.4	24.9	14.9	12.5	
Subtotal	47.7	50.1	58.6	42.4	52.5	40.6	69.3	49.5	57.0	
Miscellaneous										
Long-tailed duck	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0	0.0	
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
Scoters	0.0	0.3	0.5	0.0	0.0	0.0	0.0	0	0.5	
Mergansers	2.6	3.1	1.9	3.0	11.3	6.7	4.8	8.6	4.7	
Subtotal	2.6	3.4	2.4	3.0	11.8	6.7	4.8	8.6	5.2	
Total Ducks	1253.1	1132.6	1952.7	1360.8	1287.9	720.4	789.8	596.8	956.5	
Canada Goose	98.6	106.6	78.5	84.9	84.2	94.9	88.2	82.8	56.9	
Am. coot	33.2	38.8	80.1	12.8	174.7	69.1	21.6	36.3	27.4	
Ponds	348.8	384.1	314.5	325.4	377.3	162.6	154.0	164.7	260.8	

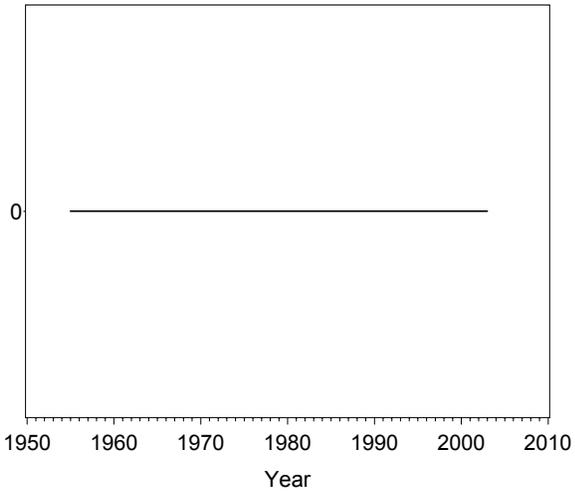
Strata 41-42 Mergansers



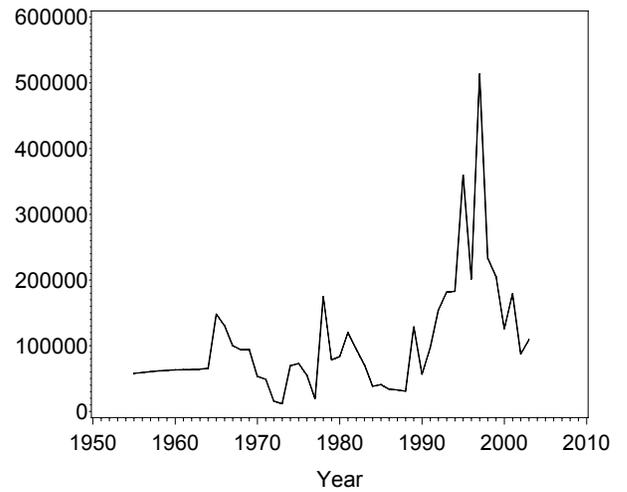
Strata 41-42 Mallard



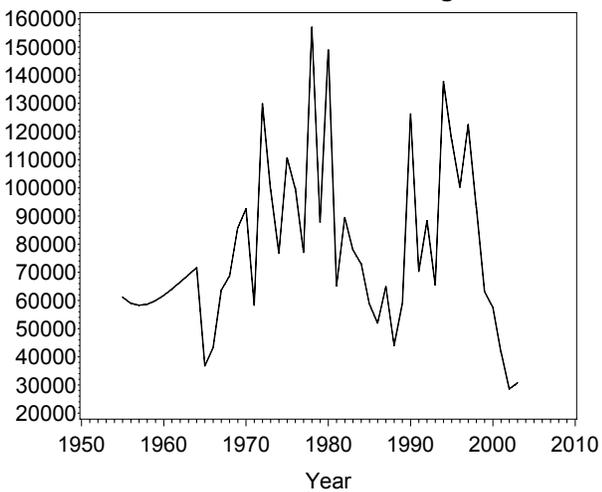
Strata 41-42 American black duck



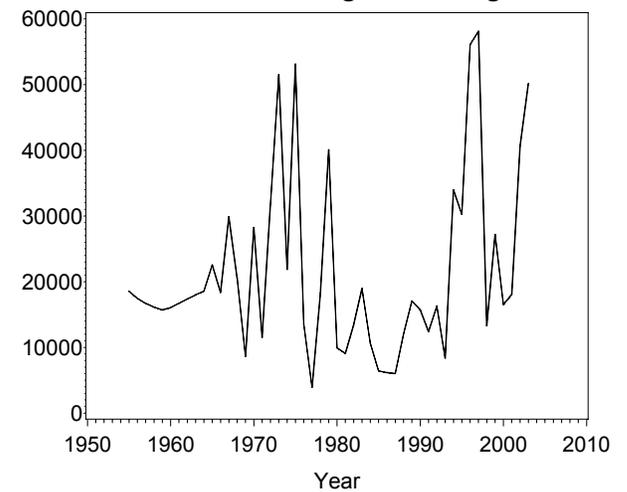
Strata 41-42 Gadwall



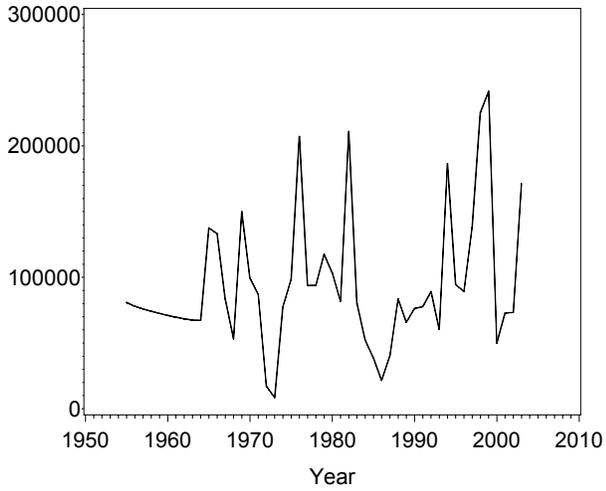
Strata 41-42 American wigeon



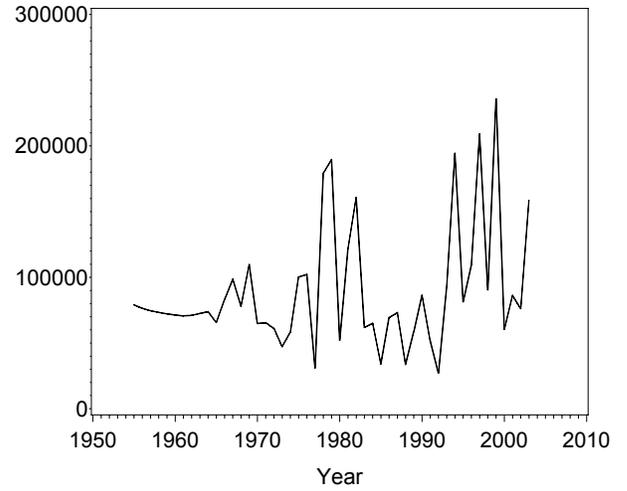
Strata 41-42 American green-winged teal



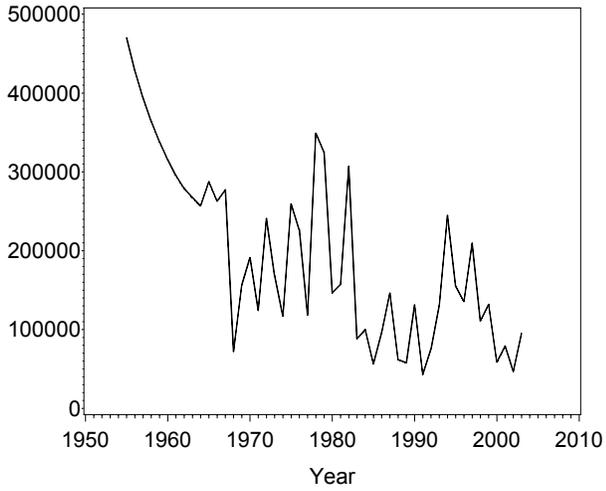
Strata 41-42 Blue-winged teal



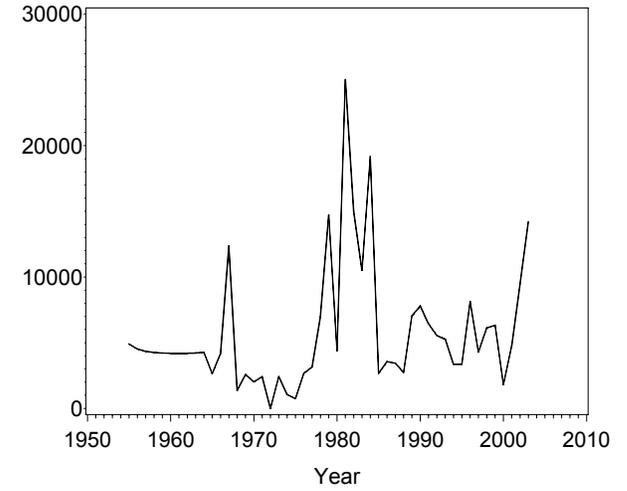
Strata 41-42 Northern shoveler



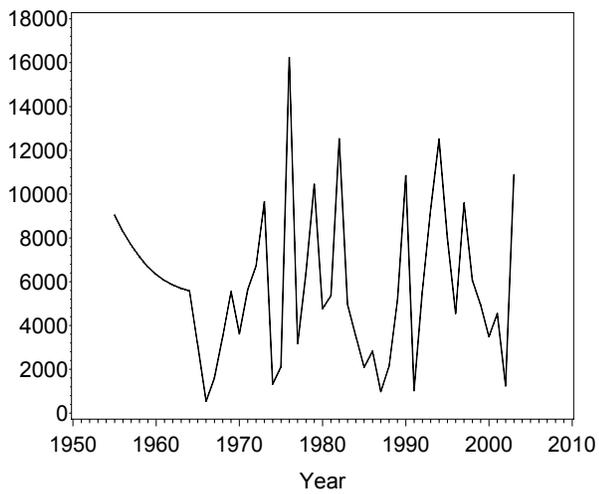
Strata 41-42 Northern pintail



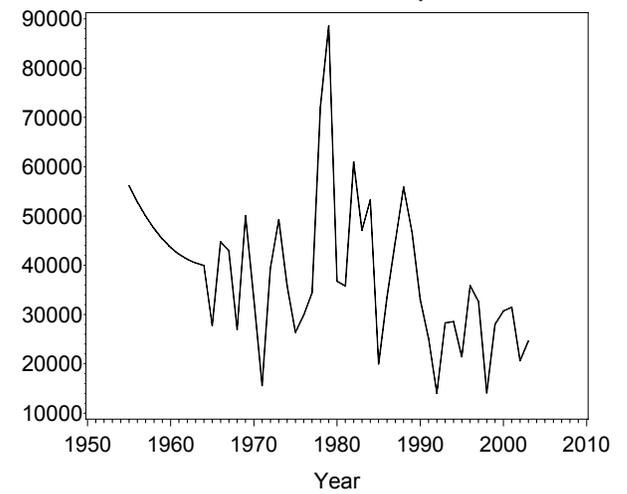
Strata 41-42 Redhead



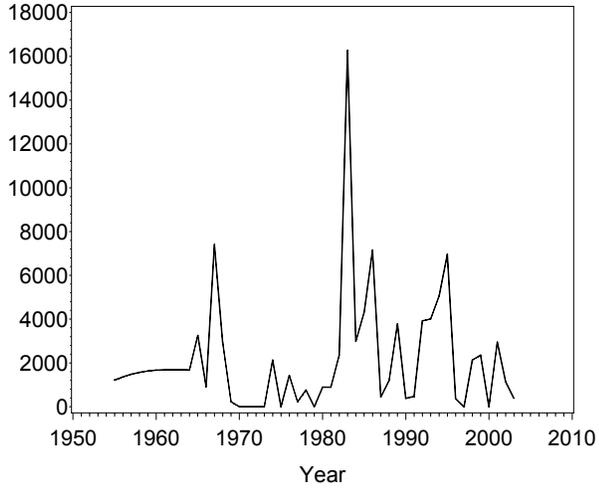
Strata 41-42 Canvasback



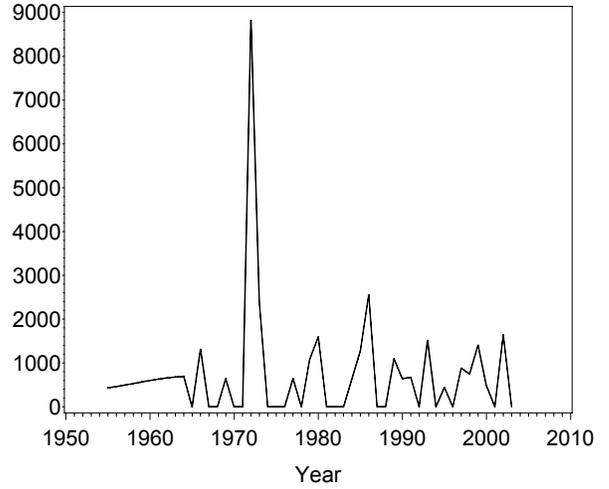
Strata 41-42 Scaups



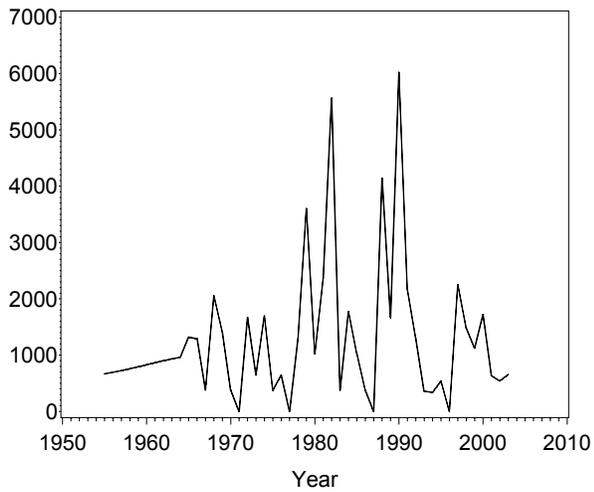
Strata 41-42 Ring-necked duck



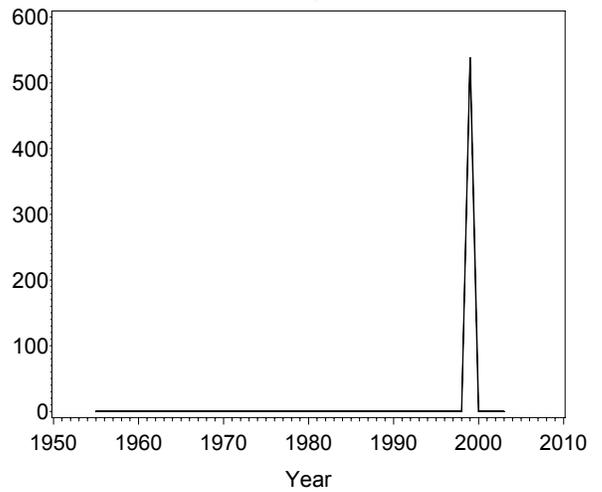
Strata 41-42 Goldeneyes



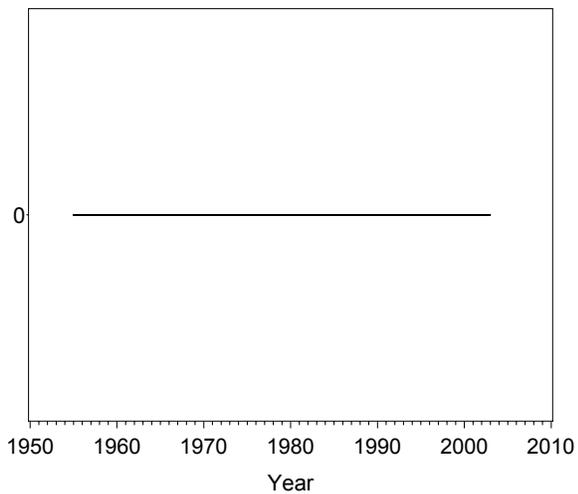
Strata 41-42 Bufflehead



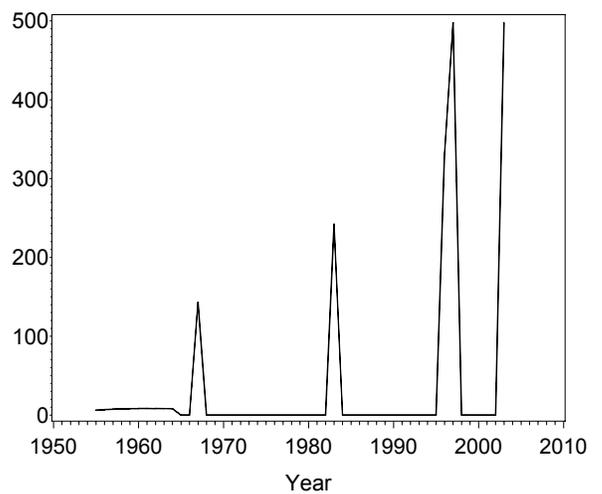
Strata 41-42 Long-tailed duck



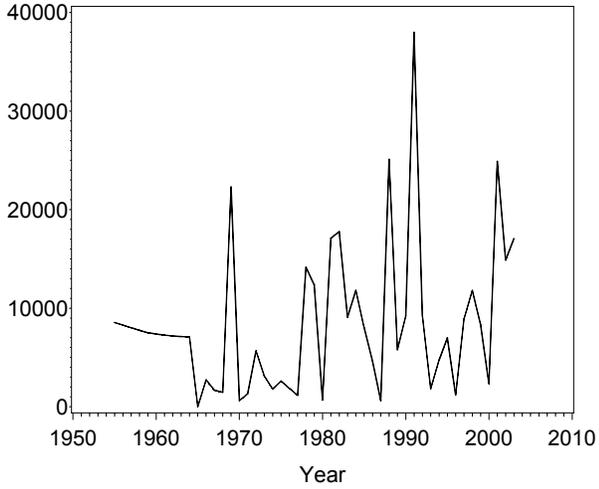
Strata 41-42 Eiders



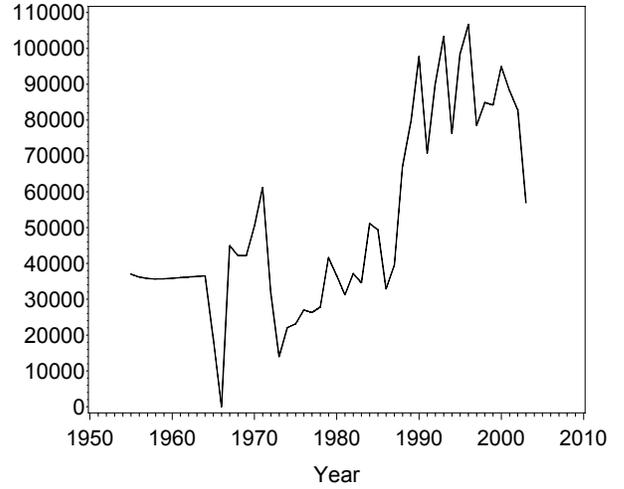
Strata 41-42 Scoters



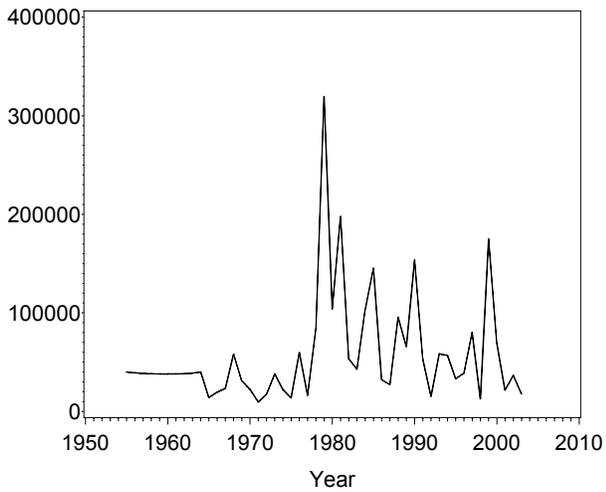
Strata 41-42 Ruddy Duck



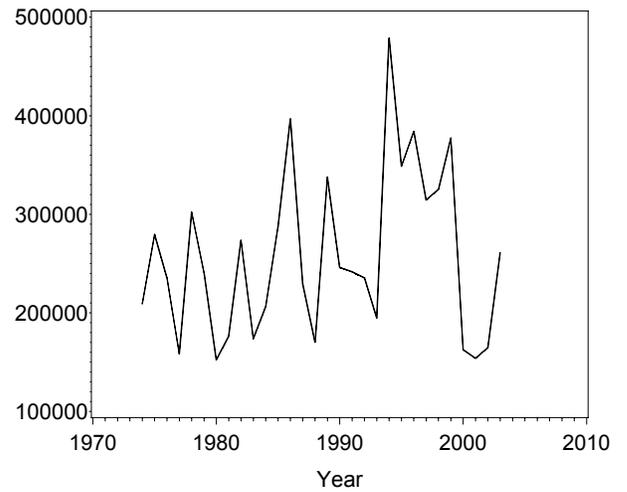
Strata 41-42 Canada Goose



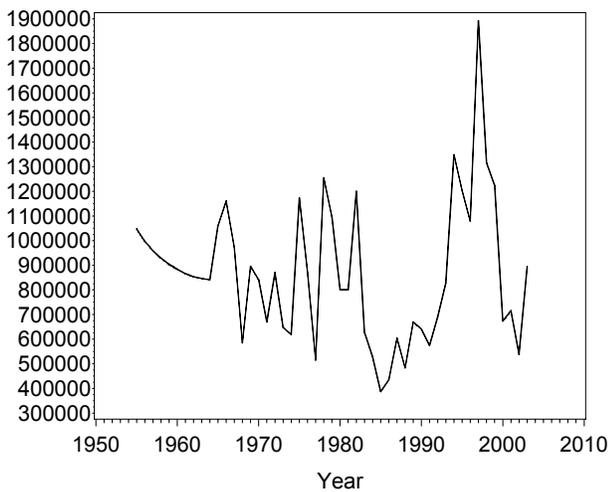
Strata 41-42 American coot



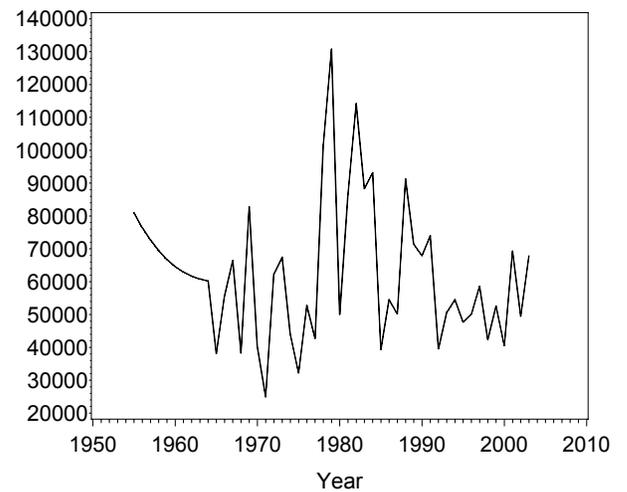
Strata 41-42 Ponds



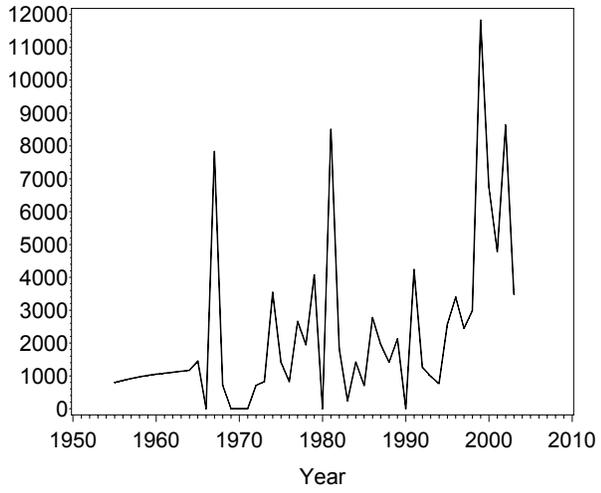
Strata 41-42 Dabblers



Strata 41-42 Divers



Strata 41-42 Miscellaneous



Strata 41-42 Total Ducks

