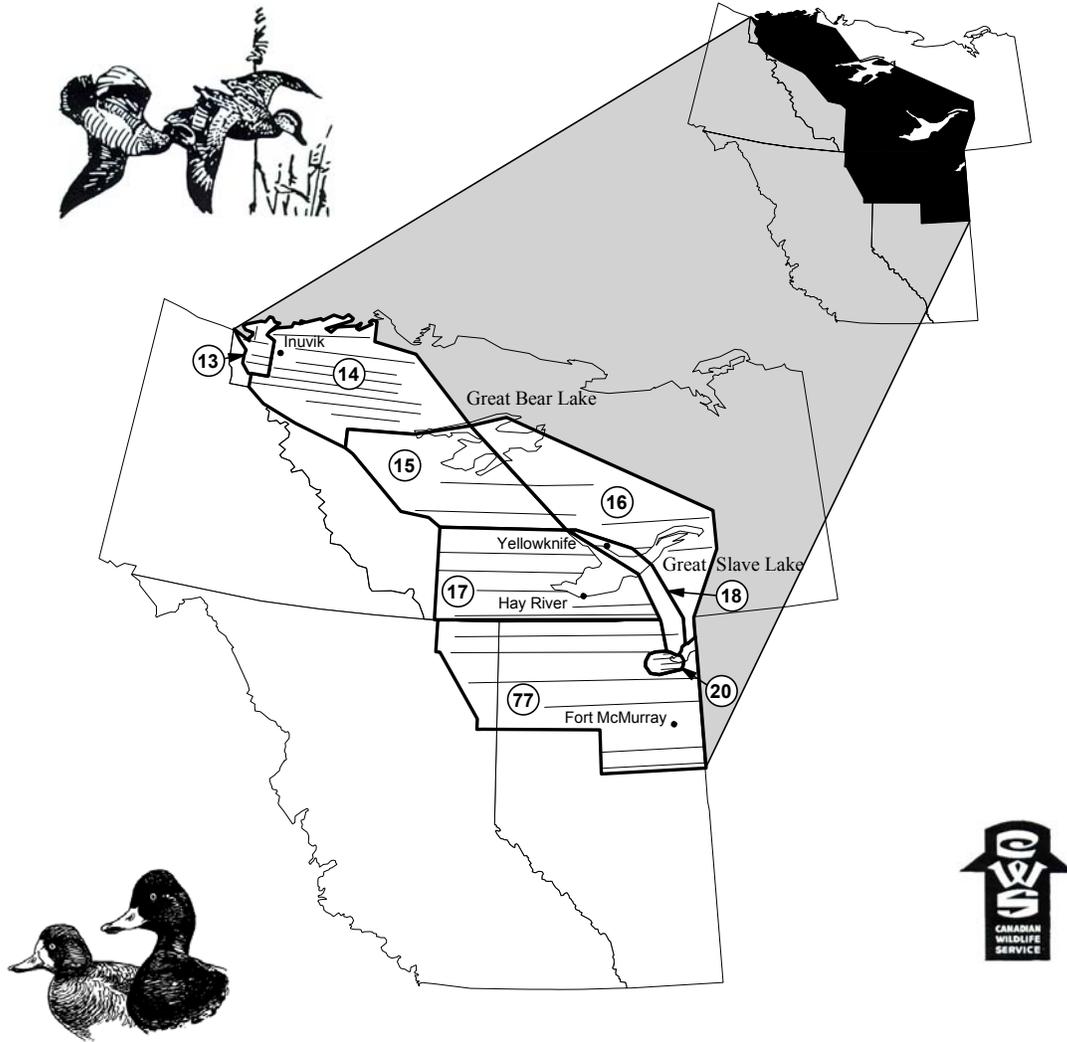


2006

NORTHERN ALBERTA, NORTHEASTERN BRITISH COLUMBIA AND THE NORTHWEST TERRITORIES



The data presented in this report are preliminary. Final estimates are available from the U.S. Fish and Wildlife Service, Office of Migratory Bird Management, Patuxent Wildlife Research Center, Laurel, Maryland 20708-4016.

TITLE: Waterfowl Breeding Population and Habitat Survey for Northern Alberta, Northeastern British Columbia, and the Northwest Territories (Mackenzie District)

STRATA SURVEYED: 13, 14, 15, 16, 17, 18, 20, 77

DATE: May 22 to June 18, 2006

DATA SUPPLIED BY: U.S. Fish and Wildlife Service
Carl Ferguson, DMBM-MBS, Laurel, MD
Doug Benning, DMBM-MBS (Retired) Golden, CO

ABSTRACT:

Total duck numbers were up from 2005,(+13.5%). Dabblers were well up,(+42.2%); divers were slightly down,(-3.7%); and miscellaneous species were up also, (+12.5%). Spring arrived around two weeks early in most of the southern and central portions of the survey unit, thus favoring early nesters. Data is presented in Table 1, Figure 1, and Appendix 1.

METHODS:

This survey was conducted using procedures found in the Standard Operating Procedures for Aerial Breeding Ground and Habitat Survey, Section IV (A), revised 1977. Two laptop computers, a Toshiba 440 CDX Satellite Pro and a IBM R40 ThinkPad, were used, with a survey program developed by the Migratory Bird Office, Juneau, AK, and the Division of Migratory Bird Management (DMBM), Laurel, MD, to record and process field data. The pilot/observer had previously flown the survey area twenty-one years as either pilot/observer or observer. The right seat observer was a retired DMBM pilot/biologist and comes with over thirty years experience on waterfowl surveys.

Transect flights within Strata 77 through 13 were flown using N783, a Cessna - 206 Soloy amphibian aircraft. The survey was initiated out of Edmonton, Alberta on May 22 and completed on June 18 at Norman Wells, NWT. It involved approximately 134 hours of aircraft flight time covering approximately 10,500 total miles, of which were 5,328 miles on 36 transects, comprising 296 segments. Survey dates for individual stratum are as follows: Stratum **77**, May 22-31; Stratum **20**, May 30; Stratum **17**, June 6-10; Stratum **18**, May 30-June 11; Stratum **16**, June 10-12; Stratum **15**, June 10-12; Stratum **14**, June 13-June 17; and Stratum **13**, June 15. Seventeen segments were not flown, due either to weather, low fuel reserves, or aircraft engine problems. During the second day of the survey, a laptop recording malfunction on the left seat side resulted in a data recording loss for the pilot/observer. That transect, 77-04, was flown again on May 28 once the problem was corrected. Inclement weather, mandatory crew rest days, and scheduled aircraft maintenance delayed the survey ten days.

SPRING HABITAT CONDITIONS

Northern Alberta and Northeastern British Columbia

Even though this area received normal winter precipitation, about one-third of the southern most portion of this survey unit in northern Alberta was fairly dry because of below average spring precipitation. Habitat within beaver flowages was reduced, and most of the shallow wetlands and drainage basins were fairly dry. This area was rated as fair.

Waterfowl habitat improved, water-wise, as we moved northward in Alberta. All mid-size and large lakes were ice free, even at higher elevations on the Caribou and Birch Mountains. Water levels there were adequate in most of the shallow drainage basins, wetland flats, bogs, small beaver flowages, and intermittent streams. These types of habitat and permanent lakes and large beaver flowages, with higher water levels, had adequate habitat available for waterfowl. This area of Stratum 77 was rated as good. All of stratum 77 experienced a much earlier than normal spring.

Athabasca Delta

Conditions here have been fairly identical, in the spring, for the last two years. Normally spring, in the Athabasca Delta, is two to three weeks ahead of the rest of Alberta. This year was no different. The largest lake, Lake Claire, was wide open, with no ice. The Delta experienced a below normal flooding this spring, very similar to last year (2005). All of the wetlands surveyed associated with Lakes Baril, Claire, Hilda, Mamawi, and Richardson had lower than normal water levels. Many of the smaller connected wetlands were dry or almost dry, and the normally deeper sloughs also had reduced water levels. There was less water and habitat available for spring breeding waterfowl. This stratum was rated as poor.

Northwest Territories (Mackenzie District)

The southern portion of the Territories was surveyed during the first and into the second week of June. Spring arrived two weeks earlier than normal, with all wetlands ice-free, including the mid-size and larger lakes on the Horn Plateau. This survey unit had about one-fourth of the area near the Alberta/Northwest Territory border that was much drier than normal. This area was rated as fair. The remainder of the unit had water overflowing from beaver flowages and small size wetlands from recent rains. This area

was rated as good.

The Canadian Shield eastern portion of the survey area was rated as good. I observed adequate water and this area also had a two week earlier than normal spring. Water levels are near or above normal for this part of the Territories.

The middle portion of the Mackenzie Valley, north and south of Norman Wells, was rated as good for waterfowl habitat, with above normal winter snowmelt and additional spring precipitation filling all available wetland basins, drainage flats, and small lakes by the second week of June. All mid-size and large lakes were ice free during the survey period. This area was rated as good breeding habitat.

We surveyed the upper portion of the Mackenzie Valley during the period of June 15 to 18. This portion of the Territories was rated as good with all small to mid-size lakes and all shallow wetlands ice-free. All of the larger lakes were ice free also. Additional spring precipitation provided normal to above normal water levels. This area experienced an later than normal spring but will provide good breeding habitat for both early and especially later nesting waterfowl species.

The Mackenzie Delta was flown on June 15. Spring and ice breakup were late this year, but normal water conditions prevailed in the interior lakes and sloughs. This area was rated as good.

SUMMARY:

BREEDING POPULATION ESTIMATES:

The long-term trend in adjusted waterfowl breeding population estimates is presented in Table 1. The 2006 waterfowl breeding population data listed by stratum for survey area 10 is also in Table 1, along with the comparison for 2005, and the ten-year and long-term means. Total ducks indicated a +13.5% increase from 2005, a -19.8% from the ten-year mean, and a -40.9% decrease from the long-term mean.

The dabbling duck population estimate increased -42.2% from 2005, decreased -26.4% from the ten-year mean, and decreased -40.1% below the long-term mean. The only dabbling species whose population estimate indicated a slight decrease was the American widgeon (-0.9%). Dabblers estimates that indicated a increase included northern shoveler (+21.0%), mallard (+56.6%), northern pintail (+5.5%), gadwall (+118.4%), blue-winged teal (+362.0%), and American green-winged-teal (+95.5%).

The breeding population estimate for diving ducks also decreased in 2006 (-3.7%). Estimates remained below the ten-year mean (-12.7%) and the long-term mean (-36.1%). Divers species whose estimates increased in 2006 included canvasback (+3.5%), goldeneye (+1410.6%), and ruddy duck (+11.9%). Divers species whose

estimates decreased this year included scaup (-13.1%), redhead (-36.8%), ring-necked duck (-21.5%), and bufflehead (-13.1%).

Concerning miscellaneous species, long-tailed duck decreased (-14.5%) from 2005, but scoters (+10.4%) and mergansers (+90.4%) increased.

CONCLUSIONS:

1. During the survey period, habitat conditions in northern Alberta and the Athabasca Delta were rated fair in the southern portion to good in the northern two-thirds to poor in the Delta because of reduced spring flooding and precipitation. Water levels were reduced, especially in shallow wetlands and sloughs in the Athabasca Delta, in much of the available waterfowl habitat in these two strata.
2. The Mackenzie River Valley and adjacent drainage "opened up" early in the southern half and late in the Mackenzie Delta. Spring arrived later than normal on the eastern side of the Territories. Waterfowl habitat was rated as good.
3. Waterfowl production should be up from last year for dabblers because of an increase of breeding ducks observed and the early spring, in most of the survey unit, should favor the early nesting species. Production for divers should be less than 2005, as lower numbers, overall, were observed during the survey period. Production of miscellaneous species should be down for long-tailed duck, but up for scoters and mergansers.

Submitted by:

Carl Ferguson, Flyway Biologist

August 18, 2006

Table 1. Status of waterfowl breeding population estimates (thousands, adjusted for visibility bias) by species and stratum with comparisons against the previous year, the previous 10-year mean, and the long-term mean for Northern Alberta, Northeastern British Columbia, and the Northwest Territories.

Species/Ponds	Stratum (2006)								% Change From						
	13	14	15	16	17	18	20	77	2006 Total	2005 Total	10-Year Mean	Long-Term Mean	2005	10-Year Mean	Long-Term Mean
Ducks															
Dabblers															
Mallard	18.0	40.4	19.6	4.1	26.7	4.8	25.2	121.8	260.6	166.4	616.5	775.9	56.6%	-57.7%	-66.4%
Am. black duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	--	--	-100.0%
Gadwall	9.6	1.7	0.0	0.0	0.0	0.0	2.8	22.0	36.1	16.5	30.4	19.8	118.4%	18.5%	82.3%
Am. wigeon	69.0	244.1	12.7	9.4	63.5	10.8	10.6	105.9	525.8	530.5	684.9	799.7	-0.9%	-23.2%	-34.2%
Am. green-winged teal	15.0	8.6	16.0	0.0	138.5	13.6	15.8	340.3	547.8	280.2	626.5	639.9	95.5%	-12.6%	-14.4%
Blue-winged teal	2.8	0.0	0.0	0.0	0.0	0.0	22.9	114.6	140.3	30.4	87.8	144.8	362.0%	59.7%	-3.1%
N. shoveler	1.9	7.6	0.0	0.0	24.3	0.0	33.7	54.1	121.6	100.5	152.4	163.7	21.0%	-20.2%	-25.7%
N. pintail	12.4	21.8	19.0	0.0	21.0	0.0	8.9	13.7	96.8	91.8	151.4	343.4	5.5%	-36.0%	-71.8%
Subtotal	128.8	324.1	67.2	13.5	274.1	29.2	119.8	772.4	1729.0	1216.2	2350.0	2887.2	42.2%	-26.4%	-40.1%
Divers															
Redhead	0.0	0.0	0.0	4.7	1.4	0.0	4.8	0.8	11.8	18.6	13.6	17.4	-36.8%	-13.6%	-32.3%
Canvasback	12.1	8.5	0.0	0.0	18.7	13.5	20.8	1.3	74.9	72.4	70.2	53.9	3.5%	6.7%	38.9%
Scaups	54.0	390.6	94.5	147.1	161.8	69.7	6.5	134.9	1059.2	1218.5	1463.6	2395.0	-13.1%	-27.6%	-55.8%
Ring-necked duck	6.6	19.7	2.0	18.2	41.1	7.0	1.9	95.6	192.2	244.8	259.3	148.9	-21.5%	-25.9%	29.0%
Goldeneyes	1.0	17.7	25.8	21.8	48.7	37.7	18.8	33.6	205.0	13.6	32.1	86.8	1410.6%	538.3%	136.1%
Bufflehead	0.0	3.6	31.5	23.4	61.1	44.2	4.1	178.7	346.7	399.1	326.6	272.3	-13.1%	6.2%	27.3%
Ruddy Duck	0.0	1.6	3.0	4.5	5.5	5.2	1.8	3.1	24.7	22.1	26.6	22.9	11.9%	-6.9%	7.9%
Subtotal	73.7	441.8	156.9	219.8	338.4	177.1	58.8	448.0	1914.5	1989.0	2192.0	2997.4	-3.7%	-12.7%	-36.1%
Miscellaneous															
Long-tailed duck	1.6	32.6	4.1	21.1	0.0	0.0	0.0	0.0	59.3	69.4	79.6	234.5	-14.5%	-25.4%	-74.7%
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	--	--	-100.0%
Scoters	7.3	230.7	30.6	67.0	43.9	13.7	0.0	16.6	409.7	371.2	513.2	871.8	10.4%	-20.2%	-53.0%
Mergansers	0.7	39.9	2.6	13.4	2.4	0.0	3.0	3.3	65.2	34.2	74.1	73.4	90.9%	-11.9%	-11.1%
Subtotal	9.6	303.1	37.3	101.5	46.2	13.7	3.0	19.9	534.3	474.9	666.9	1180.3	12.5%	-19.9%	-54.7%
Total Ducks	212.0	1069.0	261.4	334.8	658.7	220.0	181.6	1240.3	4177.8	3680.1	5208.8	7064.9	13.5%	-19.8%	-40.9%
Canada Goose	0.0	24.2	46.6	0.0	16.7	0.0	26.6	33.6	147.7	136.7	133.4	147.7	8.1%	10.7%	0.1%
Am. coot	0.0	0.0	0.0	0.0	1.1	0.0	2.4	2.4	6.0	4.9	54.3	54.2	22.5%	-89.0%	-89.0%

Appendix 1. Long-term trend in adjusted waterfowl breeding population estimates (thousands) for Northern Alberta, Northeastern British Columbia, and the Northwest Territories.

Species/Ponds	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Ducks										
Dabblers										
Mallard	1299.6	1148.0	816.6	1019.1	2016.3	687.2	1862.4	1102.5	1027.7	1171.1
Am. black duck	0.6	0.6	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0
Gadwall	0.6	0.0	1.6	0.6	0.3	0.0	1.3	9.1	0.0	2.5
Am. wigeon	1331.7	1102.1	1105.7	724.4	1828.5	1540.0	1586.6	819.6	788.4	1185.4
Am. green-winged teal	878.0	675.0	529.0	643.6	1726.9	851.5	1067.8	387.3	874.8	1062.1
Blue-winged teal	204.0	159.2	25.5	107.5	360.3	355.7	385.9	162.9	34.1	365.2
N. shoveler	256.4	162.1	94.0	170.1	537.7	193.3	389.7	187.2	76.9	473.7
N. pintail	1078.4	608.1	543.8	920.6	2426.1	685.8	1226.7	441.3	298.0	445.1
Subtotal	5049.2	3855.1	3116.2	3585.9	8899.9	4313.4	6520.2	3109.9	3099.9	4705.1
Divers										
Redhead	31.9	27.5	19.6	11.5	46.8	23.8	35.2	56.0	12.9	44.6
Canvasback	45.4	18.4	15.1	63.2	70.7	56.8	37.0	27.8	91.7	69.2
Scaups	2423.2	2297.7	2300.5	2020.8	3629.0	2347.7	2724.1	2620.7	2919.7	2572.7
Ring-necked duck	189.9	200.6	114.1	91.3	393.4	164.5	69.3	122.9	112.5	137.1
Goldeneyes	202.8	93.6	88.5	142.2	492.6	122.8	264.6	230.1	32.2	127.1
Bufflehead	156.1	173.7	152.4	132.2	238.8	209.7	160.7	209.2	151.9	233.9
Ruddy Duck	19.6	15.1	6.9	8.7	44.7	23.5	17.5	1.2	22.2	2.1
Subtotal	3068.9	2826.6	2697.1	2470.1	4916.1	2948.9	3308.3	3267.9	3343.3	3186.8
Miscellaneous										
Long-tailed duck	450.0	347.8	380.1	451.6	607.7	367.3	432.4	278.7	163.4	522.2
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoters	1416.2	1219.3	1322.7	1043.0	1602.3	1606.7	1252.5	721.9	759.8	1290.2
Mergansers	101.0	52.5	74.8	127.2	95.3	137.4	131.6	53.2	94.5	82.5
Subtotal	1967.3	1619.5	1777.6	1621.8	2305.3	2111.4	1816.5	1053.8	1017.7	1894.9
Total Ducks	10085.4	8301.2	7590.9	7677.8	16121.3	9373.7	11645.0	7431.7	7460.8	9786.9
Canada Goose	361.6	414.0	148.6	285.5	502.8	264.6	131.3	90.7	232.5	17.7
Am. coot	28.2	3.0	0.0	0.0	156.8	3.9	38.8	19.2	8.7	7.5
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Species/Ponds	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Ducks										
Dabblers										
Mallard	589.9	675.9	604.6	730.0	530.8	753.1	807.6	1132.1	696.4	575.4
Am. black duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gadwall	6.1	1.9	6.7	0.3	0.3	14.3	1.3	10.7	8.6	0.9
Am. wigeon	909.0	888.2	456.1	384.6	578.6	850.7	766.1	851.9	912.5	492.0
Am. green-winged teal	649.9	800.5	457.8	492.7	204.7	358.4	429.8	569.3	535.4	242.2
Blue-winged teal	173.3	52.1	9.6	5.3	14.7	21.0	33.0	81.8	10.0	31.7
N. shoveler	165.5	180.8	113.0	101.6	42.4	57.7	108.5	157.3	142.2	72.5
N. pintail	392.4	190.1	105.4	197.1	74.8	100.0	85.4	426.3	351.0	227.3
Subtotal	2886.1	2789.5	1753.2	1911.6	1446.3	2155.2	2231.7	3229.5	2656.1	1642.1
Divers										
Redhead	6.8	5.0	18.6	9.5	5.3	8.3	6.1	10.3	5.6	2.9
Canvasback	44.6	120.5	21.0	93.0	61.6	30.4	40.5	16.8	21.0	10.4
Scaups	2607.5	2490.3	2741.4	1970.3	2523.7	2719.4	2934.8	5090.7	3328.3	2795.1
Ring-necked duck	225.5	159.6	133.7	94.3	54.9	108.4	105.9	59.7	106.9	42.2
Goldeneyes	119.3	34.7	60.3	24.3	35.0	17.6	30.7	33.3	39.3	36.2
Bufflehead	191.9	241.5	182.2	212.9	277.7	230.1	354.0	291.2	236.8	277.7
Ruddy Duck	2.1	17.5	11.1	0.6	0.9	1.8	2.5	15.2	15.0	6.7
Subtotal	3197.8	3069.1	3168.2	2404.8	2959.2	3115.9	3474.5	5517.2	3752.9	3171.2
Miscellaneous										
Long-tailed duck	320.8	460.2	402.3	165.1	460.3	283.3	224.6	105.7	181.4	218.8
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoters	965.9	611.8	712.7	606.7	855.5	1172.6	640.6	1093.5	905.4	1098.0
Mergansers	96.9	52.5	48.4	14.3	30.2	44.9	16.1	29.2	32.1	21.1
Subtotal	1383.6	1124.5	1163.4	786.1	1346.0	1500.9	881.3	1228.4	1118.8	1338.0
Total Ducks	7467.5	6983.1	6084.8	5102.6	5751.5	6772.1	6587.5	9975.1	7527.9	6151.2
Canada Goose	68.7	152.7	134.4	70.4	85.3	131.5	122.4	111.8	64.4	38.3
Am. coot	3.4	35.5	1.0	43.7	9.8	4.0	3.2	6.8	27.0	29.7

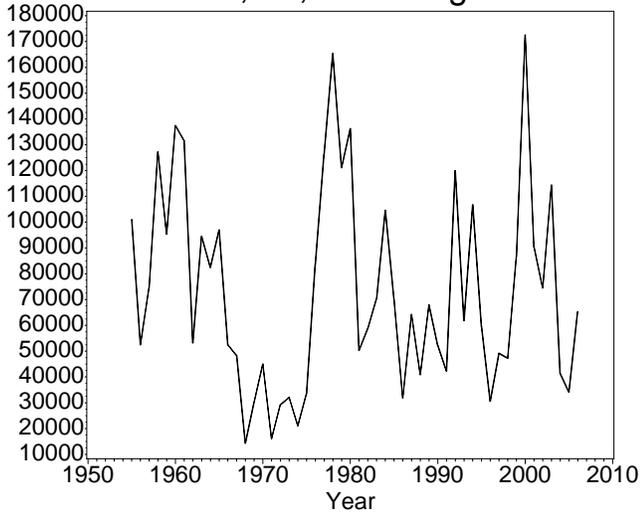
Appendix 1 (continued). Long-term trend in adjusted waterfowl breeding population estimates (thousands) for Northern Alberta, Northeastern British Columbia, and the Northwest Territories.

Species/Ponds	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Ducks										
Dabblers										
Mallard	731.9	314.7	770.4	739.4	794.9	896.2	719.2	534.1	928.4	482.6
Am. black duck	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gadwall	0.0	5.2	17.6	10.2	32.3	43.8	52.5	51.0	2.5	23.1
Am. wigeon	650.3	538.8	846.7	993.4	729.6	992.2	916.0	589.3	556.3	1187.1
Am. green-winged teal	468.3	225.6	370.6	678.7	582.6	585.6	626.2	692.4	842.9	468.5
Blue-winged teal	55.9	111.7	474.5	213.6	187.2	367.8	283.9	159.3	107.5	92.9
N. shoveler	116.3	81.9	256.2	64.4	79.7	207.4	204.5	77.9	74.5	140.9
N. pintail	381.6	246.5	532.6	244.2	196.2	289.6	314.5	103.7	392.0	399.6
Subtotal	2404.3	1524.6	3268.6	2944.0	2602.5	3382.7	3116.8	2207.6	2904.1	2794.7
Divers										
Redhead	2.4	3.1	23.4	20.2	12.4	28.7	18.4	7.2	9.9	33.8
Canvasback	32.0	37.6	48.1	29.9	28.3	59.6	113.3	48.7	55.3	51.6
Scaups	3215.2	2529.6	2900.0	2676.5	3166.2	3063.0	3028.7	2516.7	3230.8	3667.5
Ring-necked duck	73.3	61.9	179.8	153.5	90.3	101.7	94.6	61.2	101.1	89.1
Goldeneyes	33.6	47.5	74.5	112.2	169.7	184.0	108.2	74.1	69.5	298.8
Bufflehead	294.8	267.0	258.7	278.8	328.0	293.9	244.1	185.1	406.3	442.9
Ruddy Duck	4.0	1.6	26.8	8.3	7.8	19.0	28.8	23.0	118.2	51.7
Subtotal	3655.3	2948.2	3511.3	3279.4	3802.8	3750.0	3636.0	2916.1	3991.2	4635.3
Miscellaneous										
Long-tailed duck	196.2	176.1	193.7	180.1	626.4	322.0	171.8	193.7	113.0	601.3
Eiders	0.0	0.0	0.0	0.0	3.2	0.0	0.0	3.0	0.0	0.0
Scoters	769.7	725.0	922.2	1202.6	1400.9	1101.8	1024.9	846.6	1077.6	1295.4
Mergansers	33.6	83.6	126.1	165.3	121.1	136.2	50.3	58.7	70.3	104.6
Subtotal	999.4	984.6	1242.0	1548.0	2151.7	1560.0	1247.0	1102.0	1260.8	2001.2
Total Ducks	7059.0	5457.5	8021.8	7771.3	8557.0	8692.7	7999.8	6225.7	8156.2	9431.2
Canada Goose	89.4	57.8	45.2	61.8	69.7	58.7	131.4	77.1	172.5	67.8
Am. coot	11.8	0.0	295.1	59.8	5.1	337.0	128.9	54.8	133.9	47.1
Species/Ponds										
Ducks										
Dabblers										
Mallard	632.2	1194.9	705.4	1006.8	581.6	565.9	536.0	501.4	595.1	350.5
Am. black duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gadwall	13.7	48.9	13.0	18.3	28.1	44.1	49.9	58.0	48.8	42.6
Am. wigeon	692.2	469.7	832.3	818.5	598.6	426.7	687.4	580.9	652.1	382.2
Am. green-winged teal	615.6	765.6	991.9	882.9	905.7	677.1	396.1	485.0	488.4	575.5
Blue-winged teal	118.4	382.2	250.6	370.5	76.3	29.2	79.9	156.6	205.0	99.1
N. shoveler	108.9	204.8	210.2	239.5	184.6	160.6	160.9	184.1	216.5	101.7
N. pintail	276.3	175.7	218.9	188.2	178.2	146.6	218.3	266.7	226.0	92.3
Subtotal	2457.3	3241.8	3222.4	3524.7	2553.0	2050.1	2128.4	2232.7	2431.9	1643.9
Divers										
Redhead	9.8	30.6	4.9	15.7	20.1	16.0	40.0	10.6	40.8	7.9
Canvasback	14.1	47.1	27.8	61.5	81.1	30.0	74.5	46.8	68.9	27.0
Scaups	2375.4	2315.4	2518.1	2267.3	2339.3	1843.2	1936.5	1658.2	1701.9	1845.7
Ring-necked duck	80.5	64.8	90.9	164.2	127.5	114.8	113.7	106.9	184.2	136.8
Goldeneyes	93.9	149.2	42.2	53.3	76.6	30.8	39.8	44.1	51.0	96.9
Bufflehead	249.1	318.2	386.2	370.5	358.6	272.7	264.3	208.5	247.6	310.7
Ruddy Duck	16.2	92.9	8.6	17.8	44.5	34.7	38.4	43.5	59.6	7.7
Subtotal	2839.0	3018.2	3078.8	2950.2	3047.7	2342.3	2507.1	2118.6	2353.8	2432.7
Miscellaneous										
Long-tailed duck	267.7	113.7	270.2	231.1	279.3	43.6	76.3	47.0	64.6	79.1
Eiders	16.2	2.9	0.0	2.0	4.5	0.0	0.0	0.0	0.0	0.0
Scoters	1045.4	909.0	1188.9	748.6	1129.0	432.7	647.4	549.1	633.8	372.6
Mergansers	69.9	31.9	64.2	40.9	67.9	52.2	42.3	119.9	61.8	106.7
Subtotal	1399.3	1057.5	1523.3	1022.6	1480.8	528.5	765.9	716.0	760.2	558.4
Total Ducks	6695.5	7317.5	7824.4	7497.6	7081.4	4920.9	5401.5	5067.3	5545.9	4634.9
Canada Goose	172.8	163.9	326.5	261.6	154.0	120.2	161.4	144.5	174.9	93.0
Am. coot	47.8	32.0	70.1	227.8	131.7	38.4	70.9	51.0	29.9	10.7

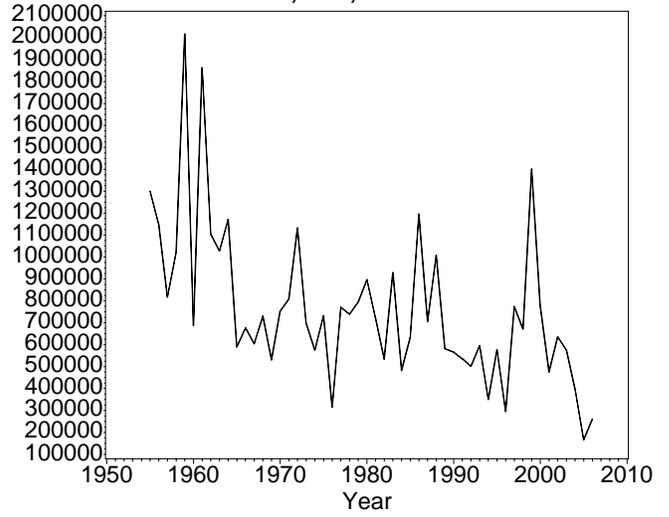
Appendix 1 (continued). Long-term trend in adjusted waterfowl breeding population estimates (thousands) for Northern Alberta, Northeastern British Columbia, and the Northwest Territories.

Species/Ponds	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Ducks										
Dabblers										
Mallard	576.5	295.1	773.7	671.8	1400.3	771.2	475.7	635.9	576.8	398.4
Am. black duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gadwall	34.3	9.6	24.4	39.9	69.9	42.7	24.5	30.7	19.0	27.0
Am. wigeon	694.8	394.0	983.7	687.2	952.8	677.5	666.4	627.4	812.4	516.8
Am. green-winged teal	605.5	281.7	440.2	616.4	810.4	954.8	671.0	744.2	727.0	739.4
Blue-winged teal	90.0	30.9	86.8	156.6	56.2	28.1	43.2	98.7	239.4	108.1
N. shoveler	65.0	41.7	90.9	306.9	140.6	148.9	102.7	213.8	244.5	133.3
N. pintail	88.4	38.3	175.1	173.1	162.9	209.5	169.1	171.7	151.5	171.4
Subtotal	2154.5	1091.3	2574.8	2651.9	3593.0	2832.6	2152.5	2522.4	2770.7	2094.4
Divers										
Redhead	6.6	5.5	26.7	17.4	11.9	7.8	6.2	16.1	9.9	16.1
Canvasback	109.6	45.6	66.7	39.1	116.9	72.9	37.9	95.0	71.3	84.4
Scaups	1657.9	1294.4	1473.4	1355.4	1926.6	1440.0	1266.9	1640.1	1597.8	1422.7
Ring-necked duck	125.1	99.3	359.5	285.4	303.9	450.3	224.9	154.7	285.7	184.7
Goldeneyes	31.0	22.9	17.5	55.7	44.2	56.1	30.0	27.5	35.7	18.1
Bufflehead	323.1	235.1	387.9	269.9	410.9	248.8	317.9	292.5	387.1	316.7
Ruddy Duck	15.2	10.4	24.0	16.1	70.5	14.7	8.8	44.5	36.1	18.2
Subtotal	2268.5	1713.2	2355.6	2038.8	2885.0	2290.5	1892.5	2270.5	2423.6	2061.0
Miscellaneous										
Long-tailed duck	93.7	47.1	107.7	50.5	111.6	48.2	57.3	104.3	83.2	116.3
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoters	407.2	359.9	679.0	282.9	525.2	549.0	531.1	503.6	695.2	635.3
Mergansers	59.5	30.6	49.1	47.3	86.7	172.5	90.4	74.5	114.3	41.3
Subtotal	560.4	437.6	835.8	380.6	723.6	769.6	678.9	682.4	892.7	792.9
Total Ducks	4983.4	3242.0	5766.1	5071.4	7201.6	5892.7	4723.9	5475.3	6087.1	4948.3
Canada Goose	162.4	151.8	79.1	82.2	163.8	115.9	165.0	189.8	129.8	120.2
Am. coot	5.6	3.6	10.6	91.7	17.1	67.0	38.3	198.1	44.7	66.6
<hr/>										
Species/Ponds	2005	2006								
Ducks										
Dabblers										
Mallard	166.4	260.6								
Am. black duck	0	0.0								
Gadwall	16.5	36.1								
Am. wigeon	530.5	525.8								
Am. green-winged teal	280.2	547.8								
Blue-winged teal	30.4	140.3								
N. shoveler	100.5	121.6								
N. pintail	91.8	96.8								
Subtotal	1216.2	1729.0								
Divers										
Redhead	18.6	11.8								
Canvasback	72.4	74.9								
Scaups	1218.5	1059.2								
Ring-necked duck	244.8	192.2								
Goldeneyes	13.6	205.0								
Bufflehead	399.1	346.7								
Ruddy Duck	22.1	24.7								
Subtotal	1989	1914.5								
Miscellaneous										
Long-tailed duck	69.4	59.3								
Eiders	0	0.0								
Scoters	371.2	409.7								
Mergansers	34.2	65.2								
Subtotal	474.9	534.3								
Total Ducks	3680.1	4177.8								
Canada Goose	136.7	147.7								
Am. coot	4.9	6.0								

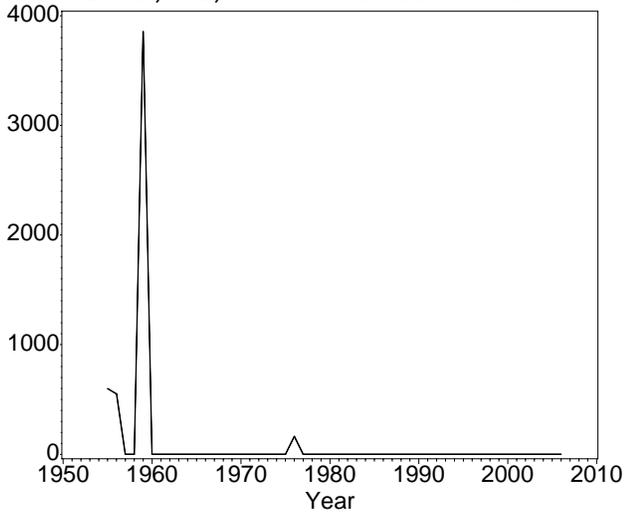
Strata 13-18, 20, 77 Mergansers



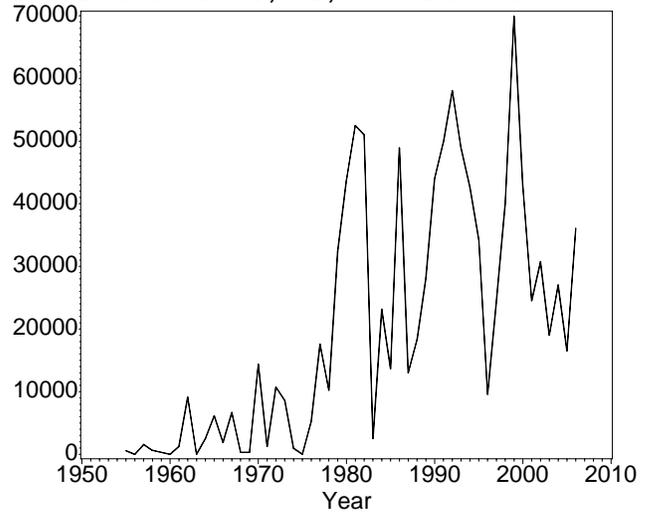
Strata 13-18, 20, 77 Mallard



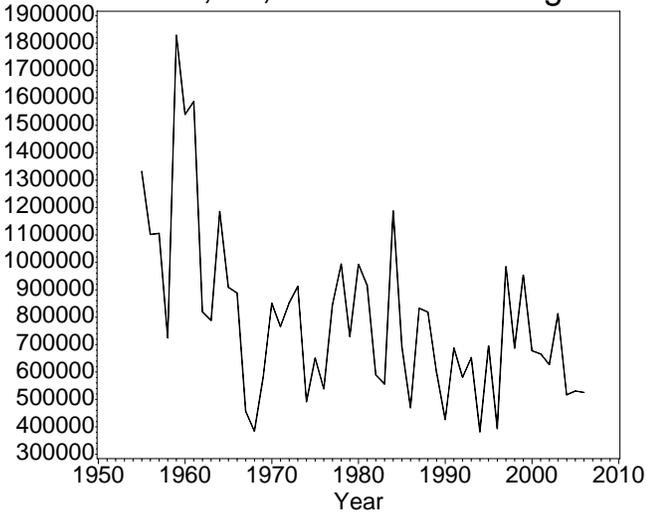
Strata 13-18, 20, 77 American black duck



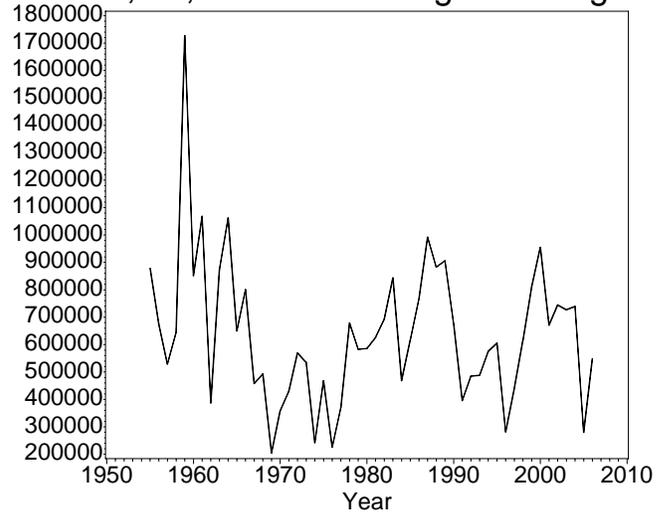
Strata 13-18, 20, 77 Gadwall



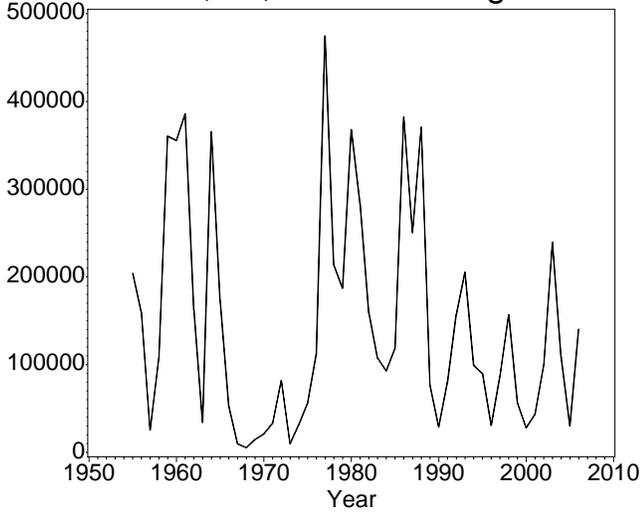
Strata 13-18, 20, 77 American wigeon



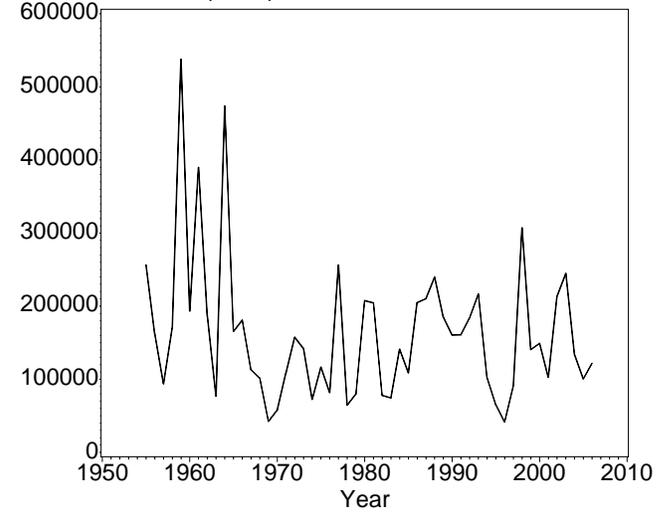
Strata 13-18, 20, 77 American green-winged teal



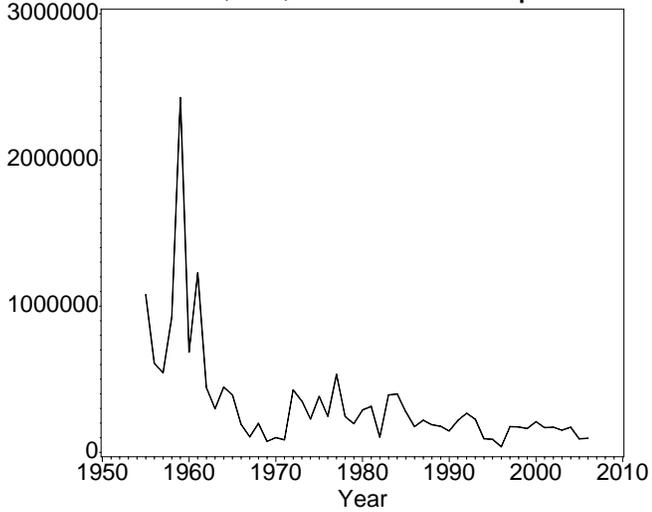
Strata 13-18, 20, 77 Blue-winged teal



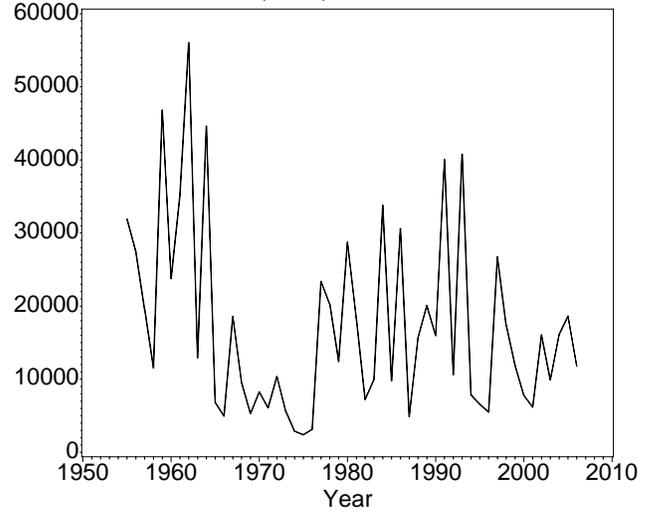
Strata 13-18, 20, 77 Northern shoveler



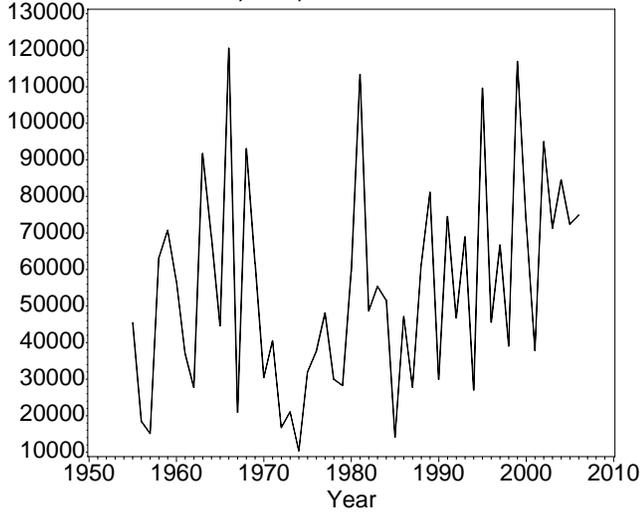
Strata 13-18, 20, 77 Northern pintail



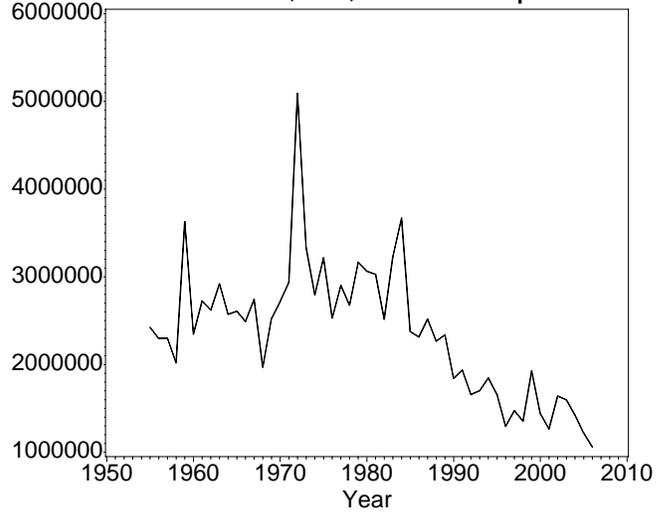
Strata 13-18, 20, 77 Redhead



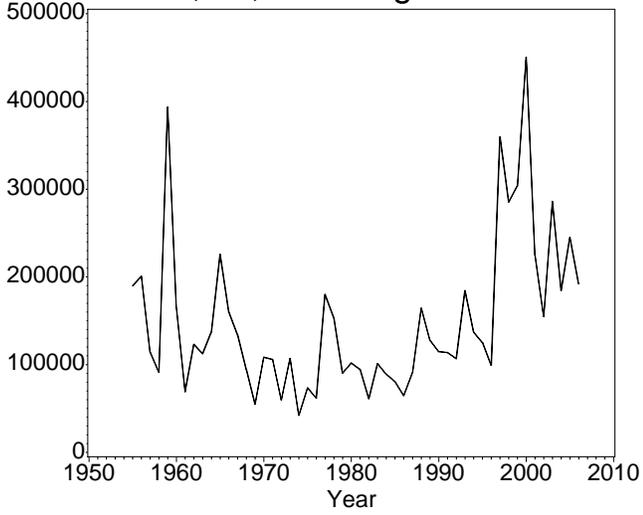
Strata 13-18, 20, 77 Canvasback



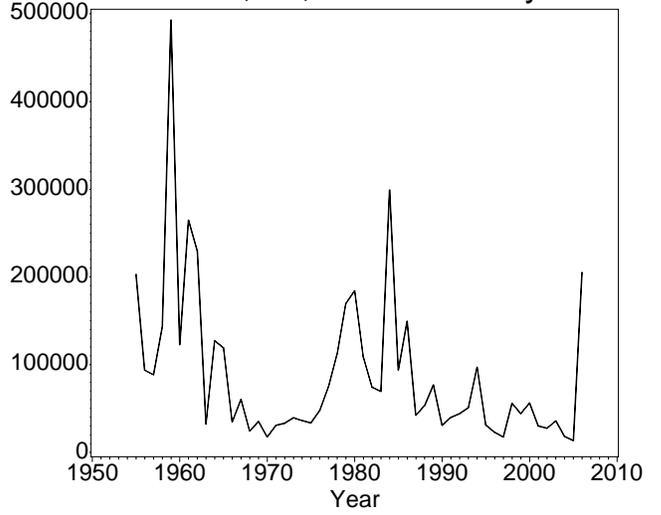
Strata 13-18, 20, 77 Scaups



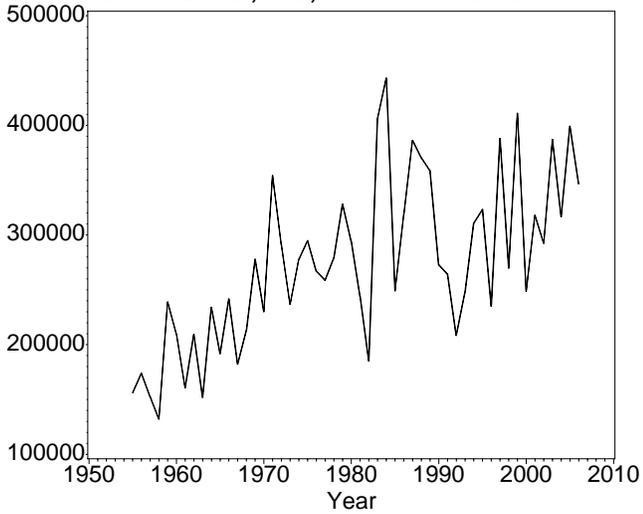
Strata 13-18, 20, 77 Ring-necked duck



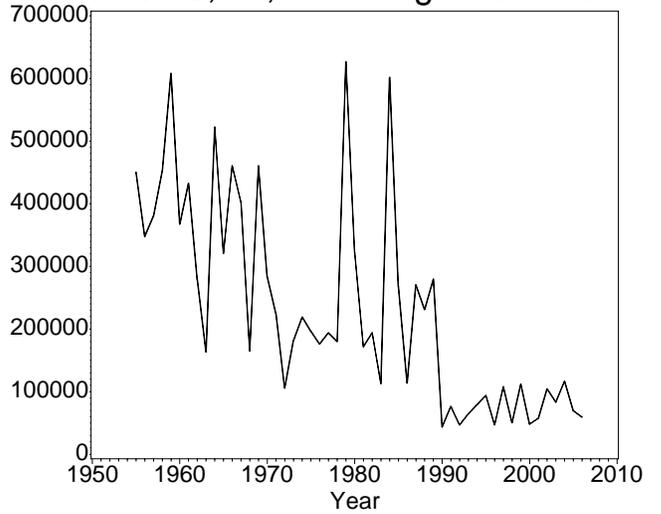
Strata 13-18, 20, 77 Goldeneyes



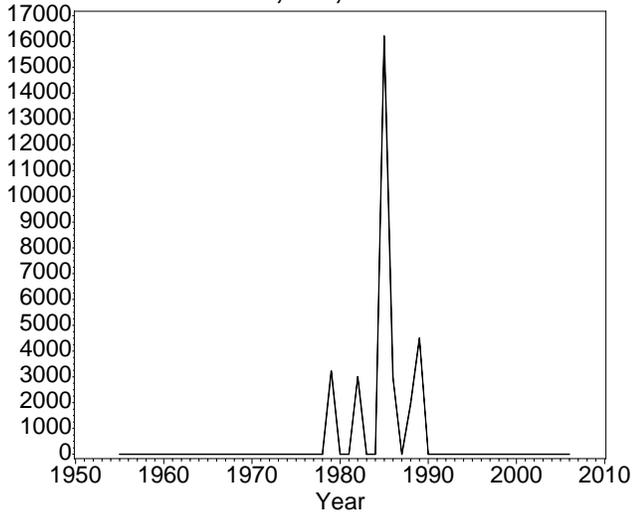
Strata 13-18, 20, 77 Bufflehead



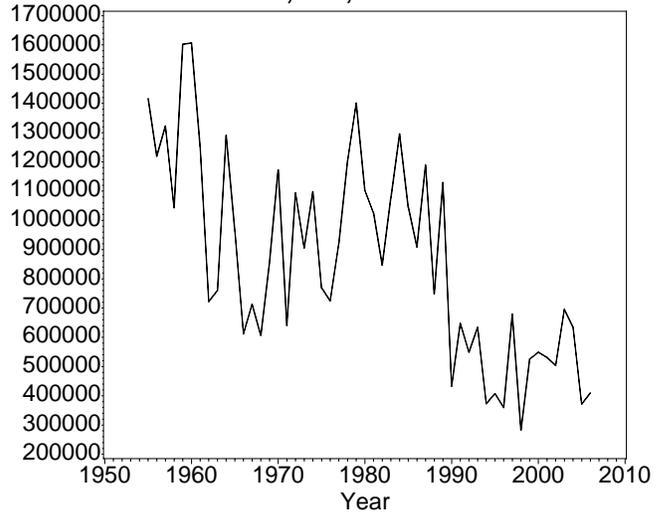
Strata 13-18, 20, 77 Long-tailed duck



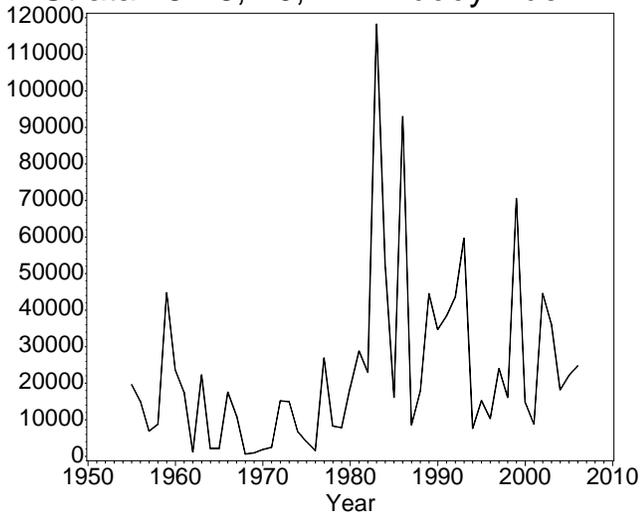
Strata 13-18, 20, 77 Eiders



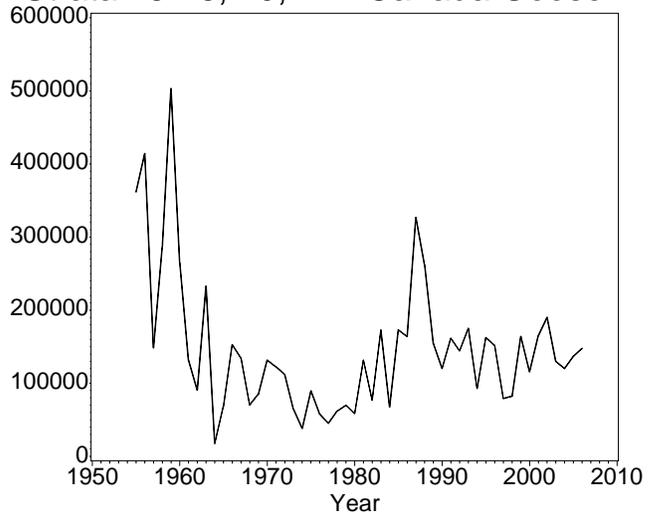
Strata 13-18, 20, 77 Scoters



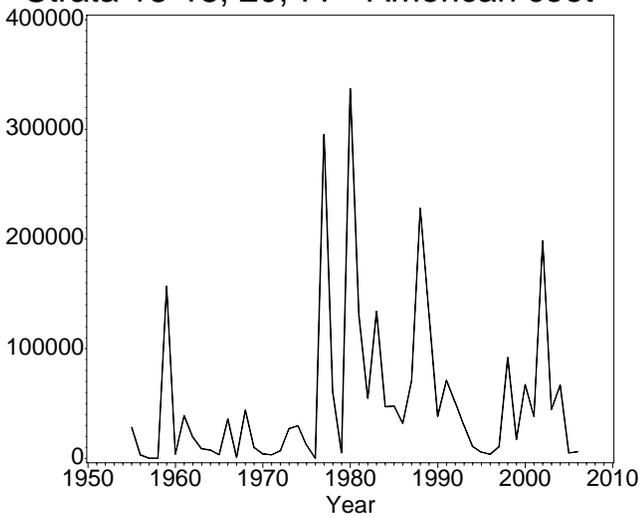
Strata 13-18, 20, 77 Ruddy Duck



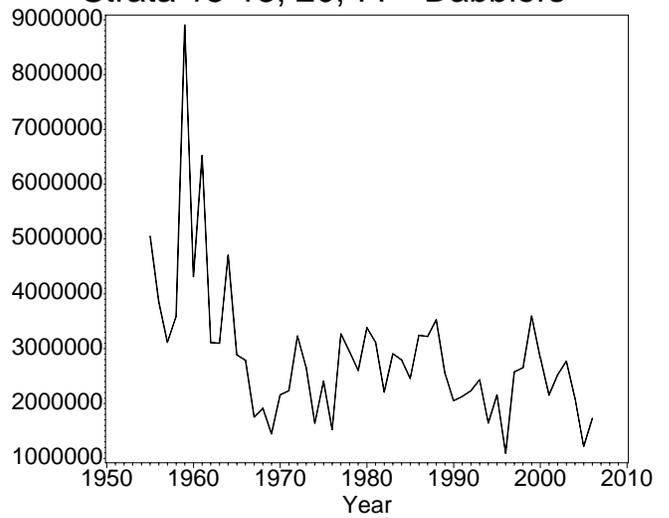
Strata 13-18, 20, 77 Canada Goose



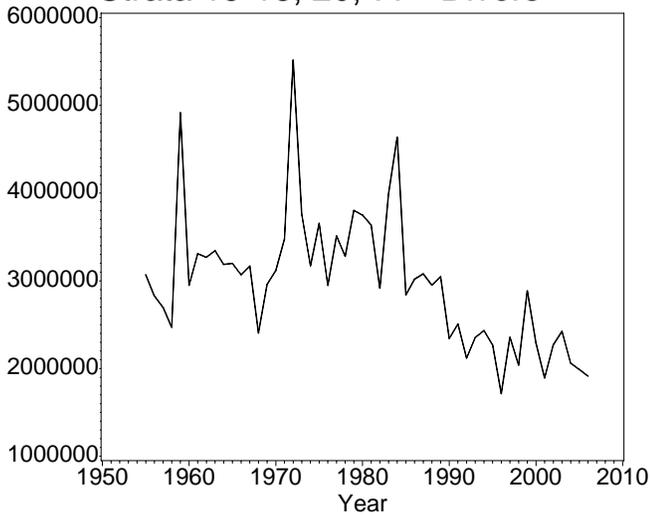
Strata 13-18, 20, 77 American coot



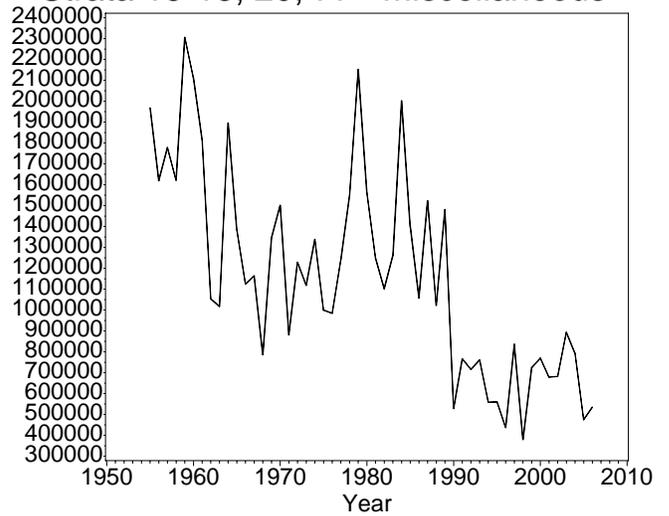
Strata 13-18, 20, 77 Dabblers



Strata 13-18, 20, 77 Divers



Strata 13-18, 20, 77 Miscellaneous



Strata 13-18, 20, 77 Total Ducks

