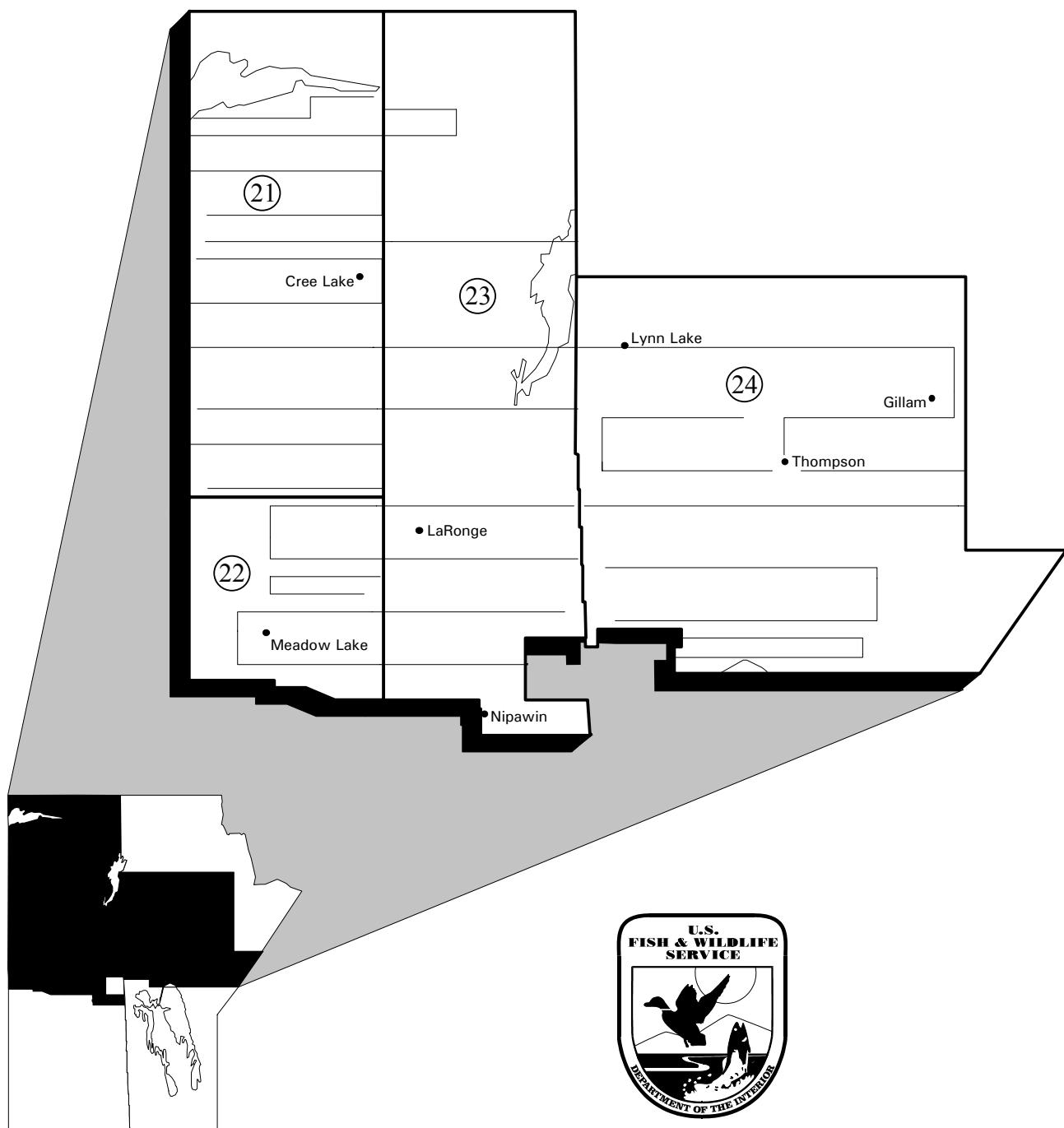


NORTHERN MANITOBA AND NORTHERN SASKATCHEWAN

Waterfowl Breeding Population Survey

2002



The data presented in this report are preliminary and subject to further editing. Final estimates will be available from the U.S. Fish and Wildlife Service, Office of Migratory Bird Management, Laurel, Maryland 20708

**Waterfowl Breeding Population Survey:
Northern Manitoba, Northern Saskatchewan**

<u>STRATA SURVEYED:</u>	21-24			
<u>DATES:</u>	May 21-June 12, 2002			
<u>DATA SUPPLIED BY:</u>	U. S. Fish and Wildlife Service			
<u>AERIAL CREW</u>				
Pilot/Observer		Fred Roetker, Flyway Biologist Lafayette, LA		
Observer		Pat Stinson, Wildlife Biologist Jackson, MS		
ABSTRACT: Waterfowl numbers were mostly up in northern Saskatchewan and northern Manitoba. Mallard numbers were 64% above 2001 values. Results from selected species are listed below:				
	Estimates in thousands	% change from 2001	% change from 10 yr. mean	% change from 1955-01 mean
Mallard	774.5	64.4%	-6.8%	-5.2%
Wigeon	175.1	106.5%	0.1%	-14.1%
GW-Teal	257.7	56.0%	6.3%	74.2%
Scaup	354.5	48.3%	-10.2%	-22.2%
Ringneck	527.8	85.1%	53.1%	118.1%

METHODS: The procedures followed in conducting this survey are contained in the Standard Operating Procedures for Aerial Breeding Population and Habitat Surveys in North America, Section III, revised 1987. Waterfowl data were collected using an aerial onboard computerized recording system designed to attribute each waterfowl observation with a respective latitude/longitude location. Observations were then logged along with sample details, i.e., strata transects, segments, time, and climatic conditions. This survey system began testing in Alaska during 1996 and has been gradually been implemented in each survey crew area since. During this transition, the Migratory Bird Management Office elected to redesign the sampling of stratum 25. This effort, effective during the 1998 and 1999 surveys, was intended to more appropriately sample the number and distribution of breeding waterfowl across the stratified habitat type. Historically, nine segments were concentrated in the Saskatchewan River delta and were not all oriented on latitude. Data from this stratum was included in the northern Manitoba report. In the new design, all thirty segments have been oriented on latitude with only five segments in the river delta area. There are now a total of five transects evenly distributed throughout the stratum, however, the sampling area is still identical to the historic survey. Direct comparisons of the 1998-2002 and historic data should be made only after evaluating this design change. Beginning with the May 2000 survey, the Migratory Bird Office elected to report Stratum 25 data in the Southern Manitoba Waterfowl Breeding Population Survey report since the southern Manitoba crew typically flies Stratum 25 and collects the data. Historic tables and graphs in this report have been adjusted to accommodate this change. However, the northern Manitoba crew flew Stratum 25 in 2002 during a temporary crew reassignment. These data will be reported in the southern Manitoba report consistent with the changes described above.

WEATHER AND HABITAT CONDITIONS: Northern Saskatchewan and Manitoba experienced one of the latest springs in recent history. Most areas received below normal precipitation over the winter. Cool temperatures persisted through May, and ice on the larger lakes was slow to break up. However, beaver ponds and riverine habitats attracted early nesting waterfowl several weeks prior to the larger lakes opening up. As a result, the nesting season was protracted, and a wide range of hatching dates are predicted. Some dry basins persist, especially in the southwestern portion of the survey area. However the reduced precipitation created more exposed shoreline habitat along permanent lakes and rivers. The absence of flooding along these expansive shorelines and associated upland meadows should offer stable nesting opportunities. Also, beaver pond habitat along small streams appeared ideal in most areas.

BREEDING POPULATION ESTIMATES: Table 1 presents breeding waterfowl population data along with comparisons to 2001, the 1992 to 2001 average, and the 1955-2001 average. Appendix 1 presents earlier waterfowl breeding estimates.

CONCLUSIONS: Breeding waterfowl numbers were mostly up from 2001 values. Habitat conditions ranged from poor in the most southwestern parts of northern Saskatchewan to good across northern Manitoba. Overall, most wetlands across the region, especially the small streams, beaver ponds, and bay shorelines, appear in ideal shape for production.

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 Saskatchewan and Northern Manitoba.

Species/Ponds	Stratum					% Change From					
	21	22	23	24	2002 Total	2001 Total	10-Year Mean	Long-Term Mean	2001	10-Year Mean	Long-Term Mean
Ducks											
Dabblers											
Mallard	129.9	133.5	204.8	306.3	774.5	471.1	830.8	817.0	64.4%	-6.8%	-5.2%
Am. black duck	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.7	--	-100.0%	-100.0%
Gadwall	0.7	3.7	3.6	6.1	14.1	6.9	11.9	16.1	104.2%	18.2%	-12.2%
Am. wigeon	25.8	20.9	50.0	78.5	175.1	84.8	175.0	203.9	106.5%	0.1%	-14.1%
Am. green-winged teal	43.7	35.6	79.8	98.7	257.7	165.2	242.3	147.9	56.0%	6.3%	74.2%
Blue-winged teal	21.4	58.4	62.2	59.2	201.2	111.7	142.6	176.7	80.1%	41.1%	13.9%
N. shoveler	0.0	6.8	4.1	8.2	19.1	11.9	33.5	23.4	60.1%	-43.2%	-18.6%
N. pintail	1.9	0.0	0.0	7.1	9.0	6.3	10.9	25.4	43.4%	-16.8%	-64.4%
Subtotal	223.4	258.8	404.4	564.1	1450.7	857.9	1447.9	1412.0	69.1%	0.2%	2.7%
Divers											
Redhead	0.0	4.9	1.8	0.0	6.7	0.8	6.5	11.8	718.0%	3.1%	-43.0%
Canvasback	4.6	3.8	0.0	6.1	14.5	13.5	22.6	26.2	7.6%	-36.1%	-44.7%
Scaups	89.9	60.3	65.9	138.4	354.5	239.0	394.9	455.4	48.3%	-10.2%	-22.2%
Ring-necked duck	94.3	87.0	188.2	158.4	527.8	285.1	344.7	242.0	85.1%	53.1%	118.1%
Goldeneyes	46.7	59.5	125.3	137.3	368.7	446.3	276.2	153.1	-17.4%	33.5%	140.9%
Bufflehead	28.1	40.6	121.3	45.9	236.0	191.1	217.0	131.0	23.5%	8.8%	80.1%
Ruddy Duck	1.4	0.0	1.7	4.0	7.1	5.1	3.4	5.7	40.6%	111.7%	24.9%
Subtotal	264.9	256.1	504.2	490.0	1515.3	1180.9	1265.2	1025.2	28.3%	19.8%	47.8%
Miscellaneous											
Long-tailed duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	--	-100.0%
Eiders	0.0	0.0	0.0	0.0	0.0	0.9	0.1	0.0	-100.0%	-100.0%	-100.0%
Scoters	12.4	0.0	16.1	27.2	55.7	29.0	52.9	56.4	92.1%	5.3%	-1.2%
Mergansers	59.7	8.9	114.0	126.1	308.5	172.3	210.3	172.9	79.1%	46.7%	78.4%
Subtotal	72.1	8.9	130.1	153.3	364.2	202.2	263.2	229.4	80.1%	38.4%	58.8%
Total Ducks	560.4	523.8	1038.7	1207.4	3330.2	2241.0	2976.4	2666.6	48.6%	11.9%	24.9%
Canada Goose	45.1	41.5	23.5	103.5	213.6	165.9	155.1	92.4	28.8%	37.7%	131.2%
Am. coot	20.7	43.0	27.5	10.3	101.5	43.0	30.4	58.6	136.1%	234.3%	73.3%

Table 2. Northern Saskatchewan, Northern Manitoba stratum data sheet, May 2002.

Survey Design	Strata				Total
	21	22	23	24	
Square miles in stratum	44,922	20,278	68,320	82,966	216,486
Square miles in sample	418.5	166.5	301.5	513.0	1,399.5
Linear miles in sample	1,674	666	1,206	2,052	5,598
Number of transects in sample	11	6	9	8	34
Number of segments in sample	93	37	67	114	311
Expansion factor	107.341	121.790	266.600	161.727	

Current Year Design	Strata				Total
	21	22	23	24	
Square mile in stratum	44,922	20,278	68,320	82,966	216,486
Square miles in sample	378	166.5	234	495	1,273.5
Linear miles in sample	1,512	666	936	1,980	5,094
Number of transects in sample	10	6	7	8	31
Number of segments in sample	84	37	52	110	283
Expansion factor	118.84	121.79	291.97	167.61	

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

Species/Ponds	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Ducks										
Dabblers										
Mallard	572.4	724.4	504.1	904.6	757.9	388.1	430.4	422.2	396.3	511.6
Am. black duck	0.0	0.0	0.0	0.0	2.7	3.6	2.4	10.1	1.6	13.4
Gadwall	1.0	1.0	5.6	0.0	25.7	1.0	34.3	9.9	9.4	8.5
Am. wigeon	105.4	22.9	45.8	23.6	86.6	123.2	104.0	112.4	103.8	147.2
Am. green-winged teal	53.0	35.6	12.3	0.0	76.2	10.7	7.8	27.2	26.5	75.2
Blue-winged teal	13.8	35.9	33.5	143.4	92.6	40.8	13.8	170.8	169.9	305.4
N. shoveler	4.2	1.9	0.0	2.6	19.7	0.0	0.0	9.0	5.8	55.4
N. pintail	21.0	48.0	17.8	9.4	44.6	11.4	111.7	12.8	32.3	33.3
Subtotal	770.7	869.8	619.2	1083.6	1105.9	578.8	704.2	774.4	745.6	1150.0
Divers										
Redhead	30.4	0.0	1.0	0.0	0.0	21.1	6.2	11.4	12.8	30.2
Canvasback	22.3	22.5	0.0	2.3	45.9	13.3	43.4	5.9	42.7	154.4
Scaups	449.2	228.2	779.6	359.9	449.5	131.5	215.2	239.2	277.3	312.5
Ring-necked duck	113.2	46.3	0.0	0.0	2.5	23.1	36.7	90.4	193.1	140.6
Goldeneyes	57.3	1.2	6.4	191.1	489.5	219.8	136.9	126.6	62.3	39.3
Bufflehead	45.9	15.7	18.8	27.4	26.9	124.8	28.0	54.6	39.8	30.0
Ruddy Duck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.8	9.9	0.1
Subtotal	718.3	313.8	805.9	580.7	1014.3	533.6	466.5	551.9	638.0	707.0
Miscellaneous										
Oldsquaw	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	12.1	6.8	71.8	26.7	100.5	5.5	44.4	33.9	13.9	39.5
Mergansers	160.2	51.5	35.7	89.3	77.2	75.0	40.6	99.7	125.7	73.7
Subtotal	172.3	58.3	107.6	116.1	177.7	80.5	85.0	133.7	139.5	113.2
Total Ducks	1661.4	1241.9	1532.6	1780.4	2297.9	1192.9	1255.7	1459.9	1523.2	1970.3
Canada Goose	71.3	65.5	48.7	53.1	147.2	26.5	94.8	17.4	15.7	42.6
Am. coot	0.0	0.0	0.0	0.0	22.5	7.9	0.0	5.5	17.3	6.3

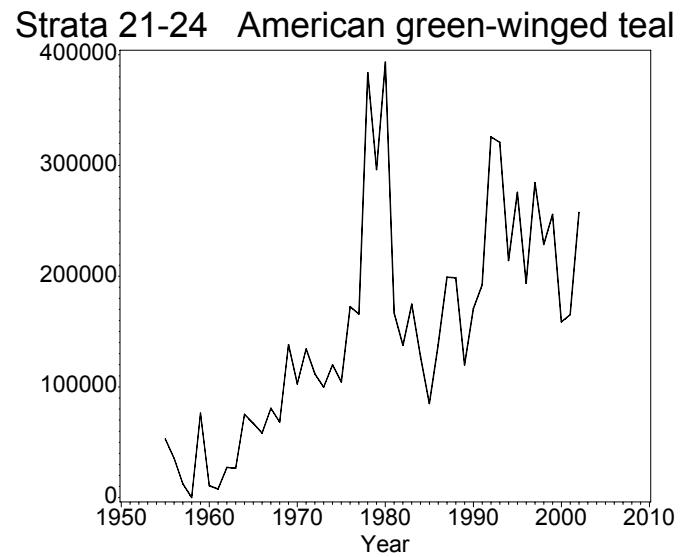
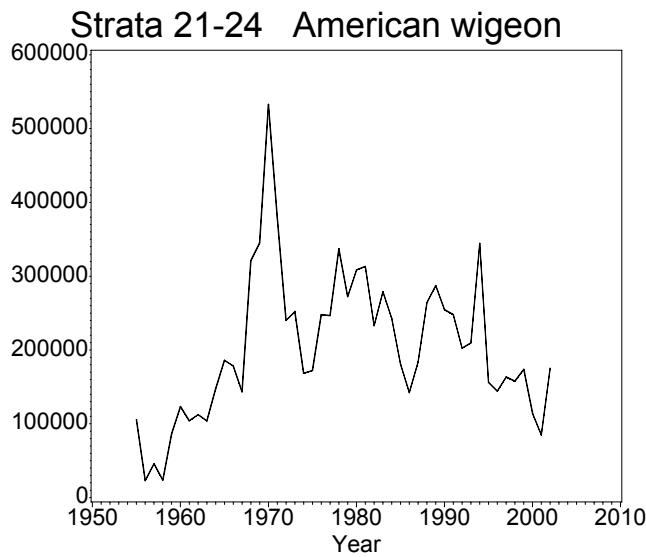
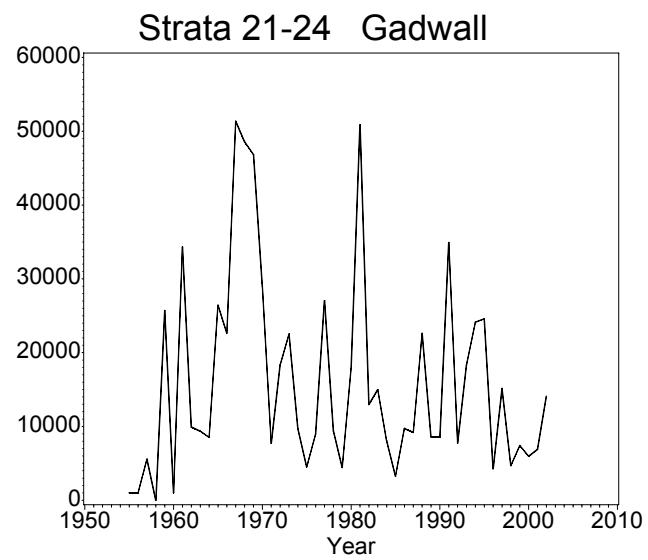
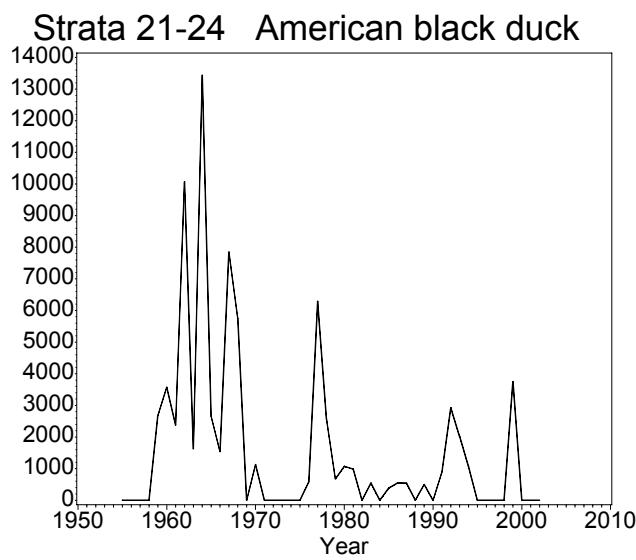
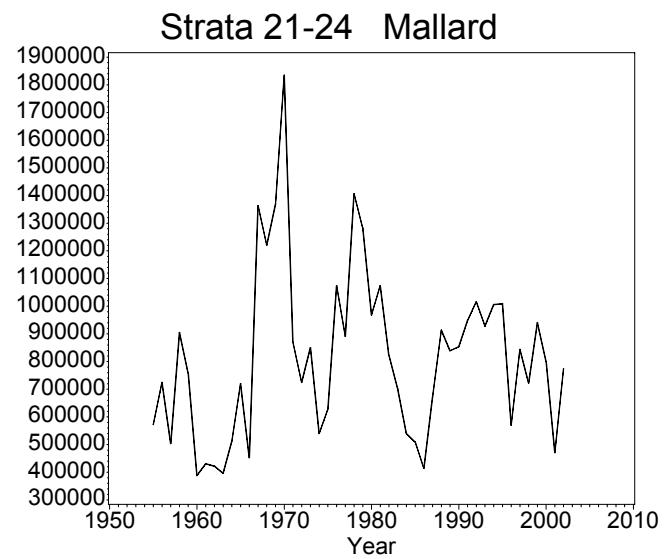
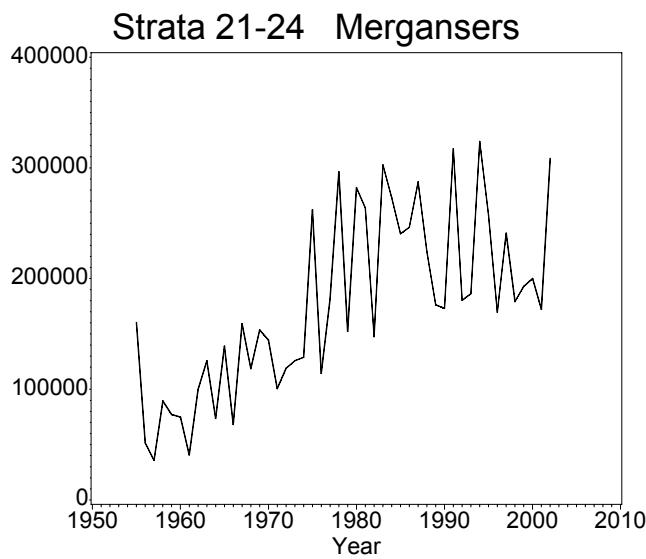
Species/Ponds	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Ducks										
Dabblers										
Mallard	719.7	453.0	1363.3	1221.0	1368.1	1834.2	869.6	724.6	849.6	540.0
Am. black duck	2.6	1.5	7.8	5.8	0.0	1.1	0.0	0.0	0.0	0.0
Gadwall	26.4	22.6	51.3	48.6	46.8	28.9	7.7	18.3	22.5	9.7
Am. wigeon	185.9	178.3	143.4	321.0	345.3	532.7	379.9	240.0	252.1	168.4
Am. green-winged teal	67.1	58.3	80.6	68.1	138.1	102.6	134.2	111.7	99.7	119.8
Blue-winged teal	88.6	65.3	170.9	613.5	392.2	421.7	49.9	78.4	83.6	39.6
N. shoveler	38.1	26.8	10.3	27.0	40.2	50.4	19.6	14.9	10.0	7.3
N. pintail	18.1	22.7	27.9	48.5	58.3	72.7	42.7	14.9	23.7	14.1
Subtotal	1146.6	828.5	1855.6	2353.4	2389.0	3044.3	1503.7	1202.8	1341.2	898.9
Divers										
Redhead	29.6	11.6	27.4	49.4	12.7	49.6	11.3	5.2	7.5	0.8
Canvasback	33.1	25.0	42.1	55.2	18.3	99.4	5.0	11.7	40.0	3.1
Scaups	388.7	232.9	395.7	481.9	537.6	693.3	357.6	652.4	521.4	628.0
Ring-necked duck	172.1	239.5	184.2	277.0	242.1	393.0	338.7	221.6	139.1	110.7
Goldeneyes	62.6	66.6	13.8	39.3	141.5	213.4	107.5	89.4	155.6	103.8
Bufflehead	30.7	42.3	57.5	150.0	107.0	122.6	172.7	148.7	111.9	128.1
Ruddy Duck	7.9	5.0	12.4	37.1	1.3	10.0	0.0	3.9	1.0	0.0
Subtotal	724.8	622.8	733.1	1089.8	1060.5	1581.4	992.8	1133.0	976.5	974.4
Miscellaneous										
Oldsquaw	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	17.2	39.6	33.2	81.0	126.7	35.5	46.3	92.3	60.0	37.2
Mergansers	138.9	68.1	159.3	118.6	153.5	144.4	100.6	118.9	125.8	128.8
Subtotal	156.0	107.7	192.5	199.6	280.2	179.9	146.9	211.2	185.7	166.0
Total Ducks	2027.4	1559.0	2781.2	3642.8	3729.6	4805.6	2643.5	2547.0	2503.4	2039.3
Canada Goose	96.3	44.6	77.8	69.7	119.7	48.2	57.9	48.7	29.6	29.1
Am. coot	15.5	8.2	29.3	193.7	20.5	47.9	17.3	13.6	41.7	7.8

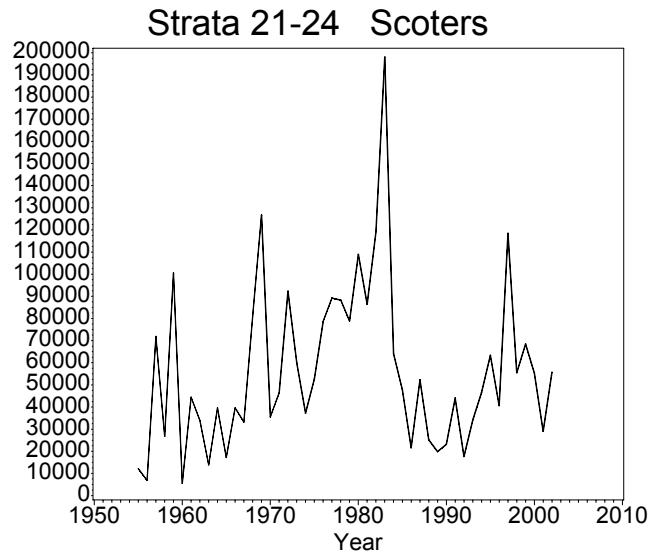
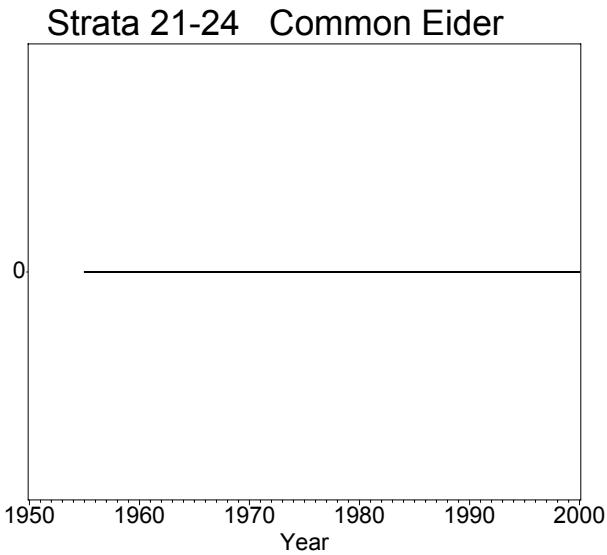
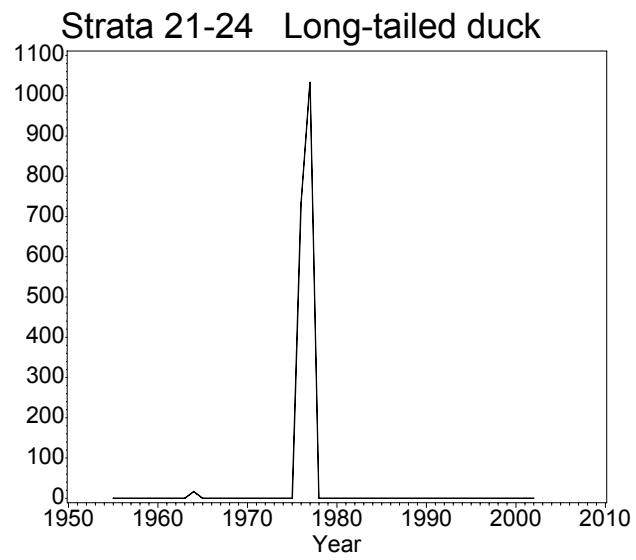
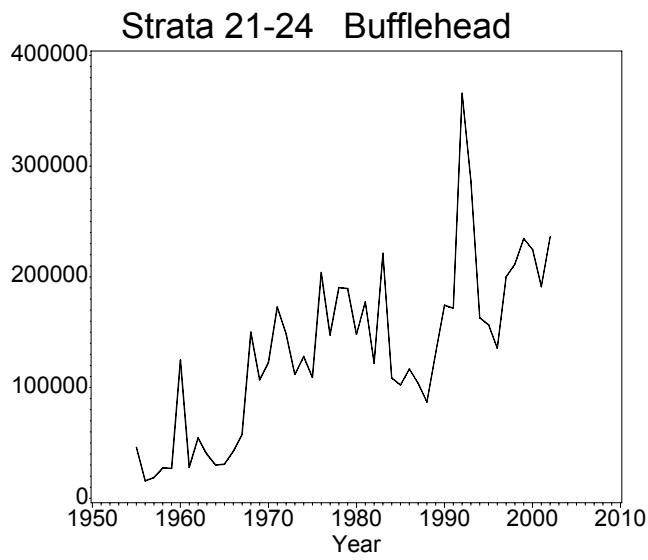
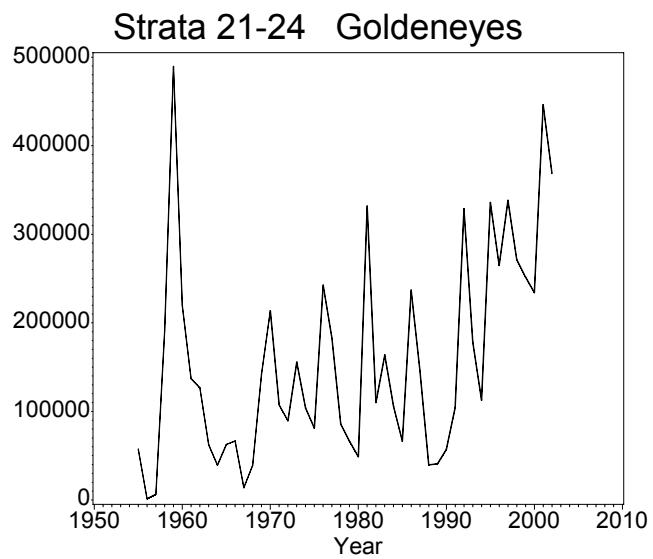
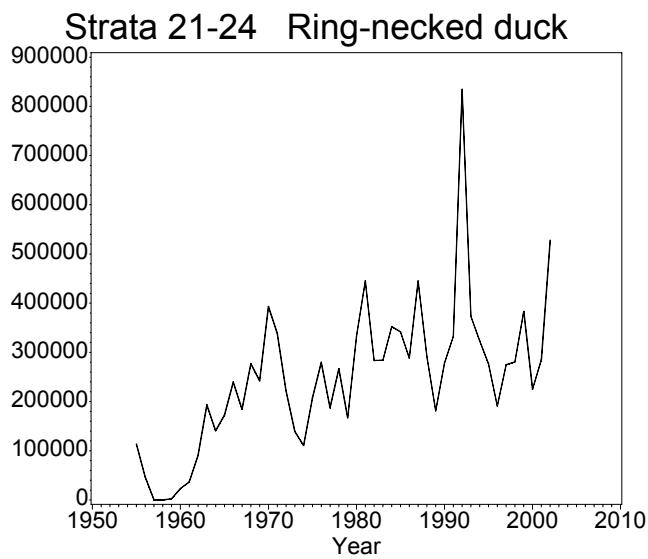
Appendix 1, continued. Long-term trend in adjusted waterfowl breeding population estimates (thousands).

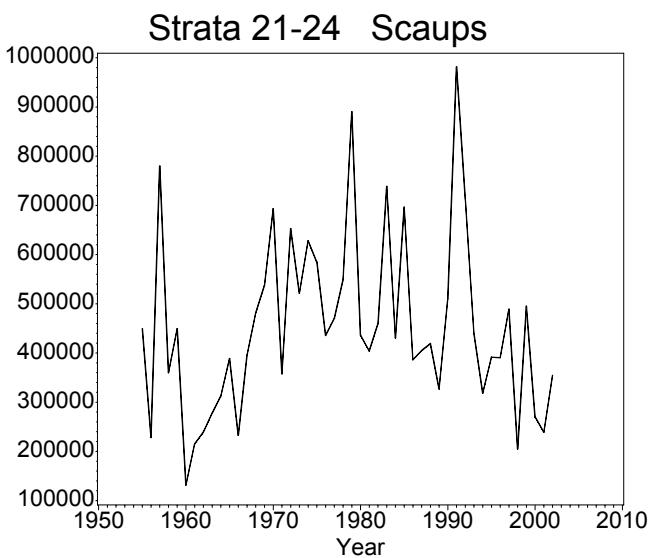
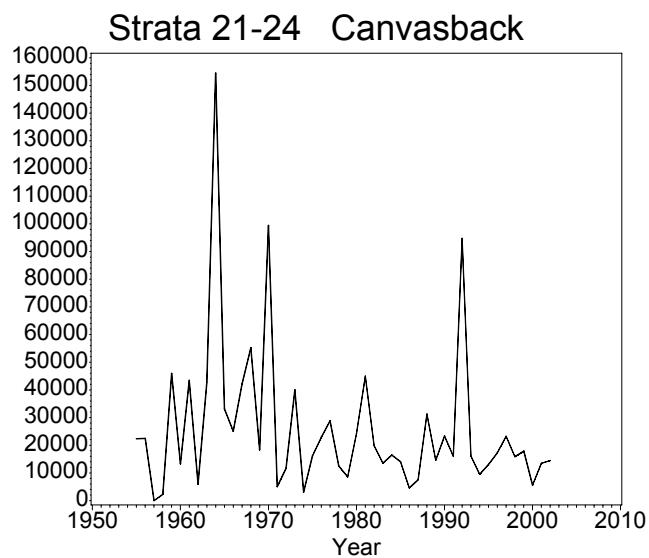
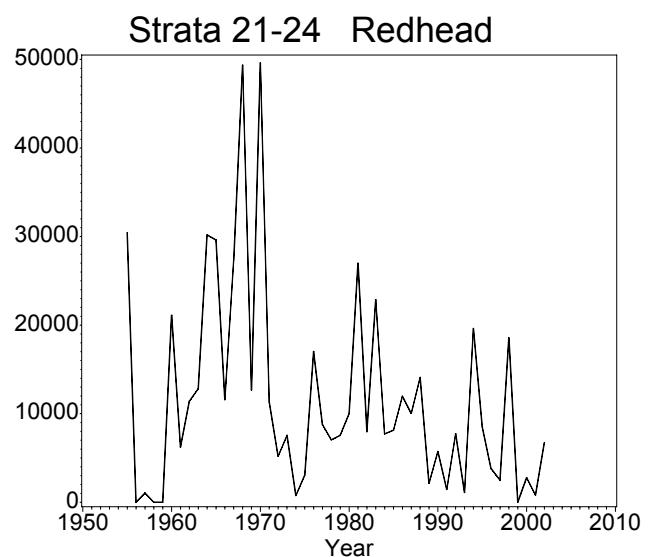
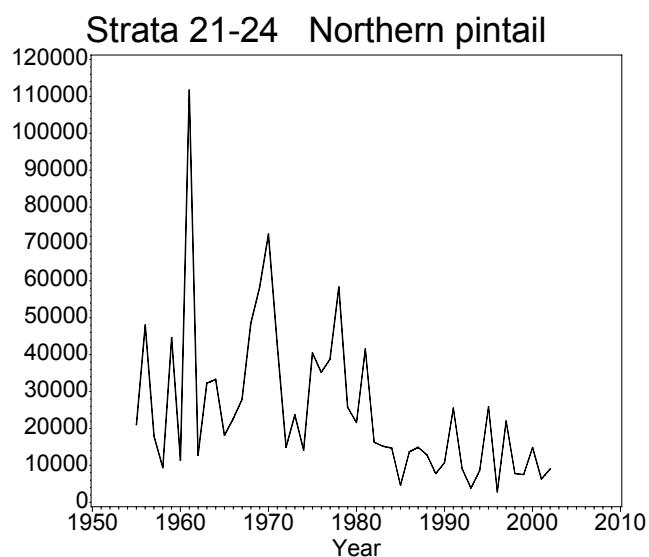
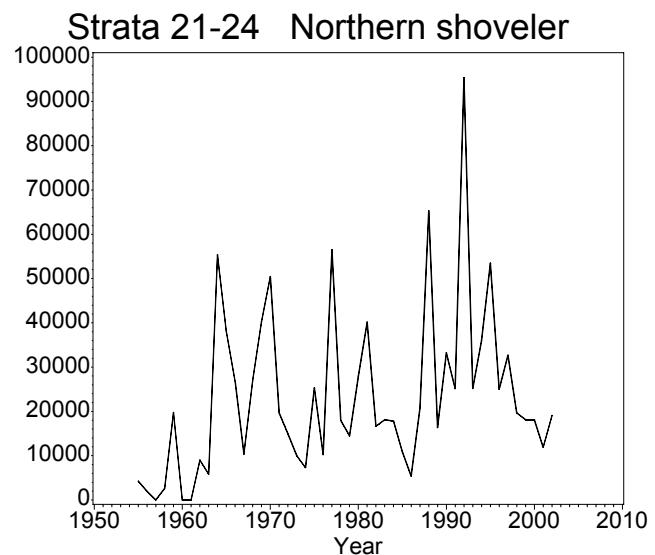
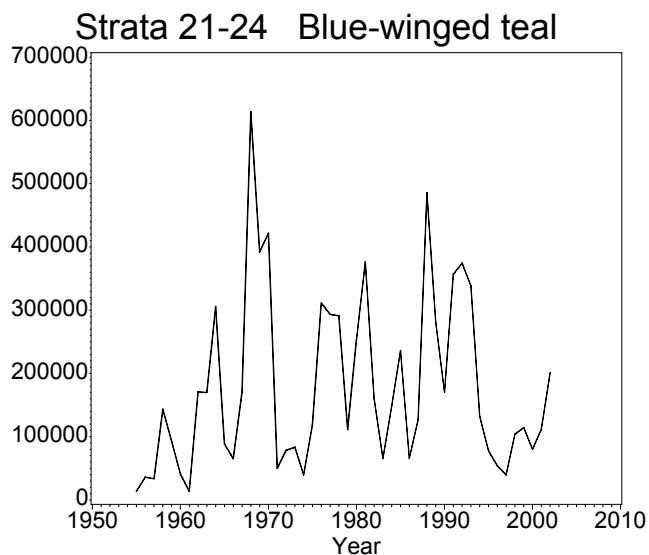
Species/Ponds	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Ducks										
Dabblers										
Mallard	628.2	1074.0	891.0	1406.0	1282.0	968.7	1074.3	821.5	700.9	539.7
Am. black duck	0.0	0.6	6.3	2.6	0.7	1.1	1.0	0.0	0.5	0.0
Gadwall	4.5	8.9	27.0	9.4	4.4	17.8	50.9	13.0	15.0	8.1
Am. wigeon	172.1	247.8	246.7	337.0	272.3	308.4	313.2	232.9	278.9	242.8
Am. green-winged teal	104.4	172.5	165.8	383.7	296.3	393.3	166.7	137.5	174.7	127.0
Blue-winged teal	119.3	311.4	293.4	291.3	111.2	253.6	376.3	160.1	65.5	148.5
N. shoveler	25.3	10.3	56.5	17.9	14.5	27.9	40.2	16.6	18.1	17.8
N. pintail	40.5	35.2	38.9	58.3	25.7	21.6	41.6	16.3	15.2	14.7
Subtotal	1094.3	1860.7	1725.6	2506.2	2007.1	1992.4	2064.0	1398.0	1268.9	1098.7
Divers										
Redhead	3.1	17.0	8.8	7.0	7.6	10.0	27.0	8.0	22.9	7.7
Canvasback	16.1	22.9	28.8	12.4	8.6	24.3	44.9	19.8	13.5	16.5
Scaups	584.6	435.6	470.4	548.8	889.9	435.8	404.1	459.3	738.4	430.5
Ring-necked duck	207.2	279.6	187.2	266.6	167.1	332.8	445.2	283.3	284.1	352.2
Goldeneyes	81.0	242.5	182.5	85.6	66.1	48.8	331.8	110.0	163.6	105.5
Bufflehead	109.2	203.8	147.5	190.2	189.4	148.0	177.5	121.9	221.3	108.6
Ruddy Duck	0.0	4.3	0.7	4.9	4.0	3.4	27.1	1.5	17.1	0.0
Subtotal	1001.1	1205.7	1026.0	1115.6	1332.7	1003.1	1457.6	1003.8	1460.9	1021.0
Miscellaneous										
Oldsquaw	0.0	0.7	1.0	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	52.6	78.6	89.2	88.3	78.9	108.9	86.4	119.2	198.0	64.0
Mergansers	262.1	114.3	181.3	296.3	152.3	282.0	263.8	147.5	302.6	273.0
Subtotal	314.7	193.6	271.6	384.6	231.2	390.9	350.2	266.7	500.6	337.0
Total Ducks	2410.1	3260.1	3023.2	4006.3	3571.0	3386.4	3871.8	2668.5	3230.4	2456.6
Canada Goose	31.1	66.3	50.5	168.1	116.4	80.3	96.8	52.6	93.6	64.9
Am. coot	21.0	50.2	228.5	55.9	12.6	324.3	526.1	33.3	24.5	94.8

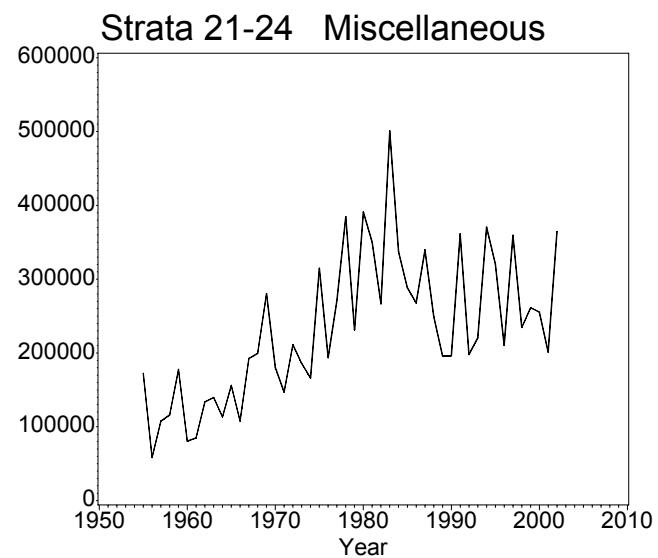
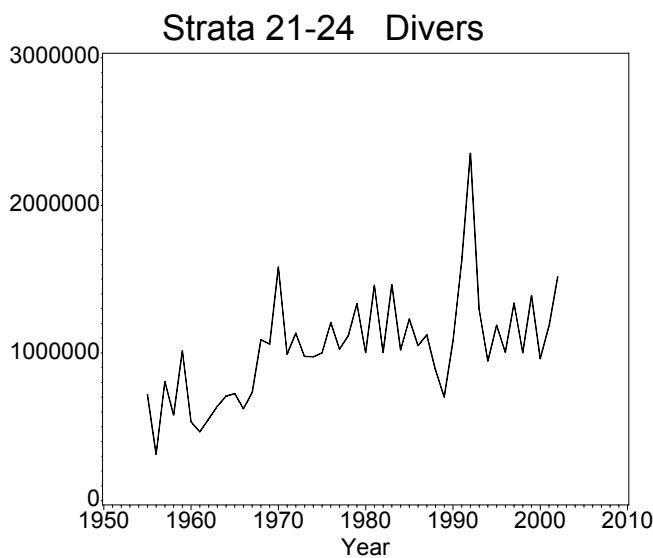
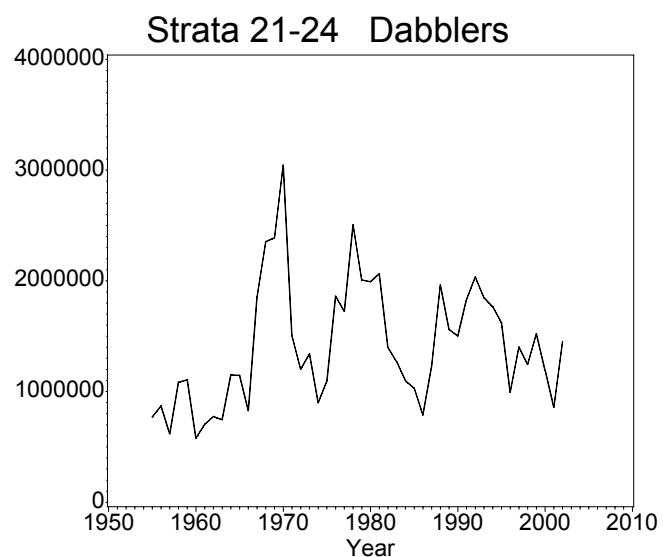
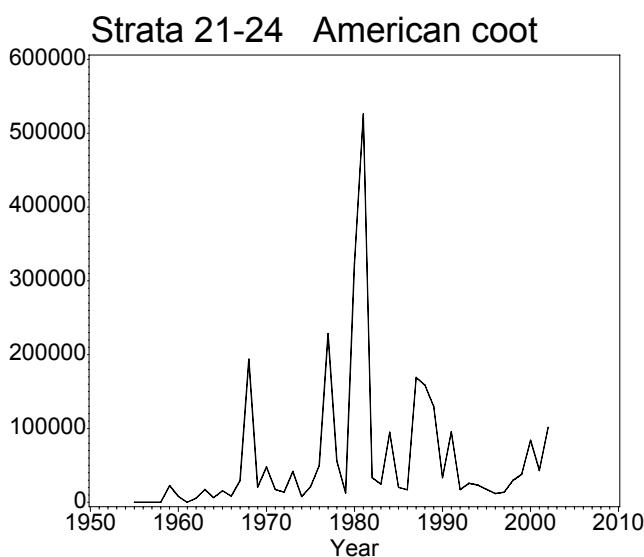
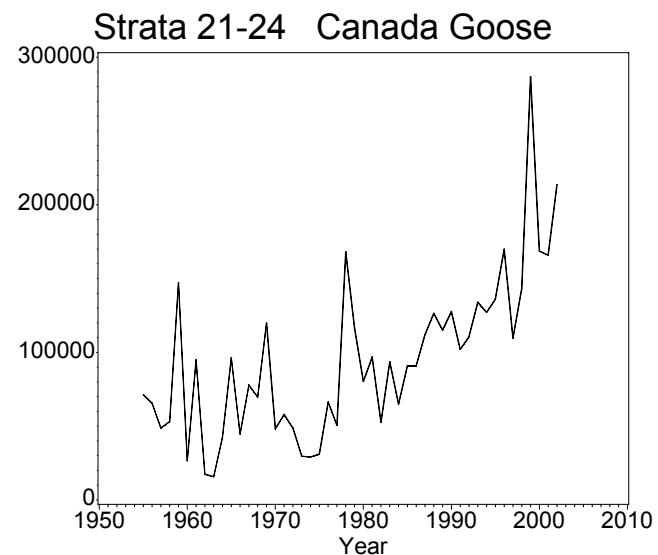
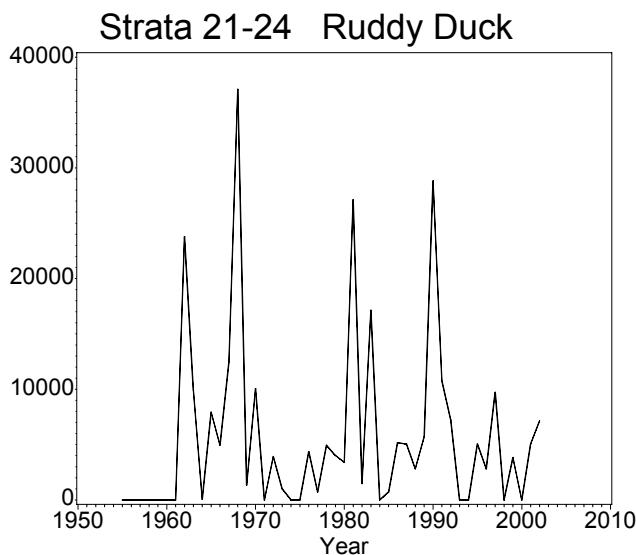
Species/Ponds	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Ducks										
Dabblers										
Mallard	509.6	413.9	673.5	913.1	839.1	853.9	947.9	1016.1	928.7	1005.7
Am. black duck	0.4	0.5	0.5	0.0	0.5	0.0	0.9	2.9	2.0	1.1
Gadwall	3.3	9.7	9.2	22.6	8.6	8.6	34.9	7.7	18.4	24.1
Am. wigeon	180.8	142.2	183.8	264.1	287.2	254.5	247.8	202.4	209.7	344.3
Am. green-winged teal	84.9	137.9	199.1	198.6	119.9	170.6	192.3	325.9	320.9	214.1
Blue-winged teal	236.1	65.9	127.0	485.6	281.1	170.4	357.0	374.4	338.0	132.2
N. shoveler	10.9	5.4	20.7	65.3	16.3	33.2	25.1	95.4	25.2	36.0
N. pintail	4.6	13.7	14.9	12.9	7.8	10.7	25.5	9.1	3.8	8.6
Subtotal	1030.5	789.3	1228.6	1962.1	1560.4	1502.0	1831.5	2033.8	1846.8	1766.1
Divers										
Redhead	8.1	12.0	10.0	14.1	2.1	5.7	1.4	7.7	1.1	19.6
Canvasback	14.1	4.6	7.5	31.2	14.6	23.3	16.1	94.7	16.1	9.5
Scaups	696.1	386.2	404.8	419.0	327.1	509.8	981.1	713.3	438.1	318.3
Ring-necked duck	341.5	288.5	445.0	291.2	181.0	278.3	332.6	834.5	373.0	323.1
Goldeneyes	66.4	236.8	145.7	39.6	40.9	57.1	104.4	328.7	178.4	112.6
Bufflehead	102.3	116.8	103.9	86.9	131.4	174.4	171.7	365.8	286.4	163.1
Ruddy Duck	0.7	5.2	5.1	2.8	5.7	28.8	10.7	7.2	0.0	0.0
Subtotal	1229.2	1049.9	1122.0	884.8	702.9	1077.4	1618.0	2351.9	1293.1	946.1
Miscellaneous										
Oldsquaw	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	47.8	21.6	52.3	25.1	19.8	23.2	44.0	17.6	34.1	46.6
Mergansers	240.4	246.2	287.3	224.1	176.2	173.1	317.2	180.3	186.4	323.8
Subtotal	288.2	267.8	339.5	249.2	196.0	196.3	361.2	197.9	220.5	370.3
Total Ducks	2548.0	2107.1	2690.2	3096.2	2459.3	2775.7	3810.8	4583.7	3360.3	3082.6
Canada Goose	90.7	90.8	112.0	126.3	115.1	127.6	102.1	110.5	133.9	127.1
Am. coot	20.1	16.9	169.1	158.8	129.9	33.2	95.6	17.1	25.7	23.5

Species/Ponds	1995	1996	1997	1998	1999	2000	2001	2002
Ducks								
Dabblers								
Mallard	1008.6	570.3	843.6	722.8	940.6	800.3	471.1	774.5
Am. black duck	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0
Gadwall	24.6	4.3	15.1	4.7	7.4	6.0	6.9	14.1
Am. wigeon	156.0	144.1	163.3	157.7	173.7	114.0	84.8	175.1
Am. green-winged teal	275.7	193.6	284.4	228.6	255.8	158.7	165.2	257.7
Blue-winged teal	77.7	53.9	39.6	103.9	114.3	80.0	111.7	201.2
N. shoveler	53.5	25.0	32.7	19.6	18.1	18.1	11.9	19.1
N. pintail	25.9	2.8	22.0	7.8	7.5	14.8	6.3	9.0
Subtotal	1621.9	994.1	1400.7	1245.1	1521.1	1191.8	857.9	1450.7
Divers								
Redhead	8.5	3.8	2.5	18.5	0.0	2.8	0.8	6.7
Canvasback	13.1	17.2	23.2	15.9	17.9	5.5	13.5	14.5
Scaups	391.3	390.6	488.9	204.9	494.9	269.7	239.0	354.5
Ring-necked duck	276.5	191.0	274.7	280.6	383.2	224.8	285.1	527.8
Goldeneyes	335.9	264.7	338.2	271.4	251.5	234.1	446.3	368.7
Bufflehead	156.9	135.5	200.0	211.7	234.6	224.7	191.1	236.0
Ruddy Duck	5.0	2.8	9.7	0.0	3.8	0.0	5.1	7.1
Subtotal	1187.1	1005.6	1337.3	1003.0	1386.0	961.4	1180.9	1515.3
Miscellaneous								
Oldsquaw	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	0.9	0.0
Scoters	63.4	40.6	118.4	55.5	68.4	55.3	29.0	55.7
Mergansers	257.3	169.6	241.0	179.1	192.9	200.0	172.3	308.5
Subtotal	320.7	210.2	359.4	234.6	261.3	255.3	202.2	364.2
Total Ducks	3129.7	2209.9	3097.4	2482.7	3168.4	2408.6	2241.0	3330.2
Canada Goose	136.1	169.8	109.6	143.3	286.6	168.6	165.9	213.6
Am. coot	17.6	11.8	13.6	29.6	38.0	83.9	43.0	101.5









Strata 21-24 Total Ducks

