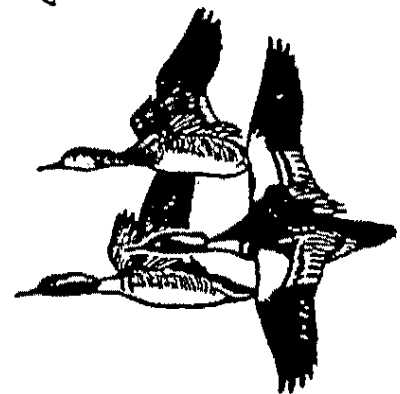
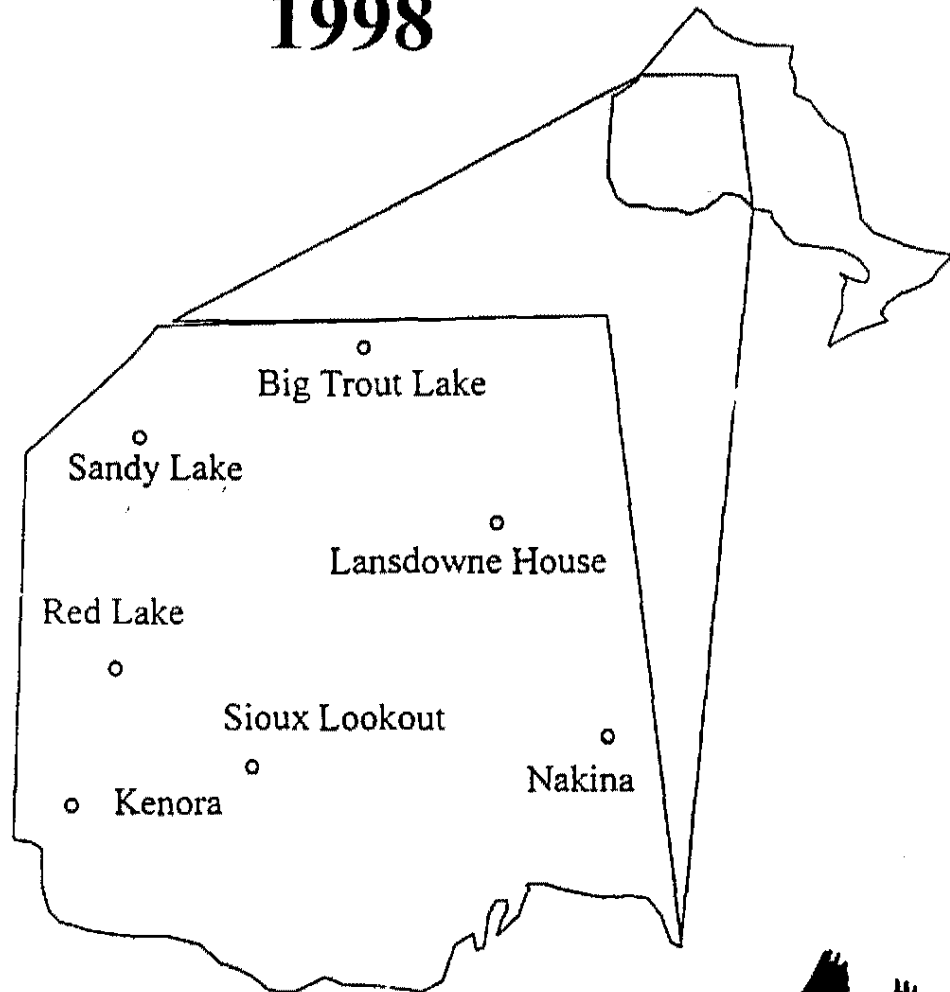


# WESTERN ONTARIO

## Waterfowl Breeding Population Survey

### 1998



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

# Waterfowl Breeding Population Survey for Western Ontario

## Stratum 50

14 May through 4 June 1998

United States Fish & Wildlife Service

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### Abstract

The earliest spring in recent history characterized habitat conditions and migration chronology though northwestern Ontario. Water conditions and vegetation cover were excellent for this time of year. Population estimates for almost all species of ducks were down though from 1997. Dabbler and diving duck species were all below the long-term average with the exception of the American black duck and ring-necked duck respectively.

### Methods

The procedure followed in conducting this survey are contained in the *Standard Operating Procedures for Aerial Waterfowl Breeding Population and Habitat Surveys in North America*, Section III, revised 1987. All segments except fourteen (do to weather) were flown in 1998. The survey was initiated 14 May and completed 4 June. An amphibious Cessna Model 206 was used in conducting the surveys during which 51.5 flight hours were flown.

Western Ontario was surveyed for breeding waterfowl from 1955 until 1973 with the exception of 1971. The survey was initiated again in 1986 and has continued since, utilizing the same transect lines and survey design. Prior to 1991, annual data was presented in this report and comparisons were made to the historic average (1955 - 1973) and the recent average (1986 - present). However, average values were used for the missing years of data to calculate long-term means and annual totals for the *Status of Waterfowl and Fall Flight Forecast* published annually by the Office of Migratory Bird Management, Laurel, Maryland. In an attempt to improve these estimates, a regression of stratum 50 and stratum 24 (northern Manitoba) was calculated for those years when both surveys were conducted. A strong correlation was found and the data from stratum 24 and the regression equation were used to estimate the missing data. We are now able to provide comparisons of annual data with a 10-year and long-term mean in this report.

## **Weather and Habitat**

Information obtained in Red Lake and Nakina, Ontario indicated that 1998 was the earliest spring in 30 years, contrary to 1996-97 which were both later than normal. Lakes normally ice-covered well into May the past two years were open by the end of April. As the survey proceeded northward no ice was present on any of the lakes in the stratum area. No flooding was observed and there was adequate water for nesting waterfowl.

The mild winter and uncharacteristically early spring made for excellent habitat conditions in central and northwestern Ontario. On arrival waterfowl had easy access to breeding nesting areas and could begin nesting quickly. Birds nesting farther north didn't have to congregate and wait for winter to leave central Ontario. This allowed early nest initiation with minimum energy loss or maximum reserve. The only negative side could be the lack of rainfall or dryness of the spring, effecting birds on beaver ponds during brood rearing.

## **Breeding Population Estimates**

Table 1 presents breeding waterfowl population data for 1998 along with comparisons to 1997, the 1988-1997 average, and the 1955-1997 average. Appendix 1 presents 1955-1998 waterfowl breeding estimates in both table form and in graphs showing trends. Breeding duck populations in western Ontario showed a decline from 1997 (-26.5%), also a decline in the 10 year mean (-18.0%) but was (19.1%) above the long term average. The American black ducks in the stratum were significantly higher this year than in 1997 compared with mallards that rose only slightly. The estimated breeding populations of American green-wing teal, scaup, goldeneyes, and buffleheads all declined from those calculated for 1997 (Table 1). Canada geese population indicated a (-35.2%) decline from 1997, a (-47.7%) decline from the 10 year average and a (2.8%) increase from the long-term average.

## **Conclusions**

Overall habitat conditions have been categorized as excellent. The decline in breeding populations from 1997 is probably a result of missed waterfowl do to early leaf out of vegetation. The early spring compared to the previous years has given way to an enormous area of prime nesting habitats. Looking at the overall status of waterfowl breeding population of 1998 to the long-term mean was still slightly higher than average.

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 Western Ontario.

Species/Ponds	Stratum (1996)				% Change From			
	50	1998 Total	1997 Total	10-Year Mean	Long-Term Mean	1997	10-Year Mean	Long-Term Mean
<b>Ducks</b>								
Dabblers								
Mallard	141.0	141.0	127.6	328.2	231.2	10.5%	-57.0%	-39.0%
Am. black duck	34.3	34.3	4.7	27.9	24.9	625.3%	22.9%	37.9%
Gadwall	0.0	0.0	0.0	0.9	1.2	--	-100.0%	-100.0%
Am. wigeon	0.0	0.0	15.2	28.5	22.2	-100.0%	-100.0%	-100.0%
Am. green-winged teal	13.7	13.7	76.9	54.2	27.5	-82.1%	-74.7%	-50.1%
Blue-winged teal	4.8	4.8	4.3	24.9	13.6	11.6%	-80.7%	-64.6%
N. shoveler	0.0	0.0	0.0	1.2	1.1	--	-100.0%	-100.0%
N. pintail	0.0	0.0	0.0	0.5	2.3	--	-100.0%	-100.0%
Subtotal	193.9	193.9	228.7	466.3	324.0	-15.2%	-58.4%	-40.2%
<b>Divers</b>								
Redhead	0.0	0.0	0.0	0.3	0.4	--	-100.0%	-100.0%
Canvasback	0.0	0.0	0.0	0.0	5.4	--	--	-100.0%
Scaups	11.3	11.3	13.3	84.8	86.5	-15.1%	-86.7%	-87.0%
Ring-necked duck	537.4	537.4	319.8	158.3	73.4	68.0%	239.5%	631.7%
Goldeneyes	75.5	75.5	171.2	158.6	114.9	-55.9%	-52.4%	-34.3%
Bufflehead	9.9	9.9	12.5	20.4	21.0	-20.3%	-51.2%	-52.7%
Ruddy Duck	0.0	0.0	0.0	1.0	1.8	--	-100.0%	-100.0%
Subtotal	634.1	634.1	516.7	423.4	303.5	22.7%	49.8%	108.9%
<b>Miscellaneous</b>								
Oldsquaw	0.0	0.0	0.0	1.5	0.6	--	-100.0%	-100.0%
Eiders	0.0	0.0	0.0	0.0	0.0	--	--	--
Scoters	0.0	0.0	95.6	22.4	14.1	-100.0%	-100.0%	-100.0%
Mergansers	116.3	116.3	442.8	238.6	150.5	-73.7%	-51.3%	-22.7%
Subtotal	116.3	116.3	538.5	262.4	165.2	-78.4%	-55.7%	-29.6%
<b>Total Ducks</b>	<b>944.3</b>	<b>944.3</b>	<b>1283.9</b>	<b>1152.2</b>	<b>792.7</b>	<b>-26.5%</b>	<b>-18.0%</b>	<b>19.1%</b>
Canada Goose	31.9	31.9	49.3	61.0	31.1	-35.2%	-47.7%	2.8%
Am. coot	0.0	0.0	0.0	0.0	1.0	--	--	-100.0%

Table 2. Survey design for western Ontario, Stratum 50, May 1998.

Survey Design

Square miles in stratum	176,609.0
Square miles in sample	607.5
Linear miles in sample	2430.0
Number of segments in sample	135.0
Expansion factor	290.7

Current Year Coverage

Square miles in stratum	176,609.0
Square miles in sample	544.5
Linear miles in sample	2,178.0
Number of segments in sample	121.0
Expansion factor	324.3

Waterfowl Breeding Population Survey

Western Ontario

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

Species/Ponds	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
<b>Ducks</b>										
<b>Dabblers</b>										
Mallard	41.2	183.8	69.4	144.0	127.3	196.9	163.6	362.1	185.7	220.0
Am. black duck	6.8	18.4	0.0	9.0	18.6	10.2	30.4	59.9	19.4	29.7
Gadwall	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	4.3
Am. wigeon	17.8	10.3	0.0	0.0	0.0	3.2	16.0	32.0	11.1	16.3
Am. green-winged teal	0.0	0.0	0.0	0.0	9.6	0.0	5.9	14.2	19.2	24.1
Blue-winged teal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4
N. shoveler	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
N. pintail	0.0	9.6	0.0	0.0	9.7	6.8	3.0	0.0	3.5	0.0
Subtotal	65.8	222.1	69.4	153.0	168.1	219.0	218.9	468.2	238.8	301.8
<b>Divers</b>										
Redhead	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0
Canvasback	0.0	0.0	0.0	32.3	0.0	121.5	7.3	0.0	1.7	1.9
Scaups	16.6	252.8	74.8	69.1	92.9	73.7	83.7	61.5	60.9	78.3
Ring-necked duck	40.2	1.5	0.0	0.0	0.0	1.9	1.9	99.2	67.6	34.2
Goldeneyes	13.5	39.1	0.0	41.4	227.1	42.8	71.8	190.0	124.0	77.2
Bufflehead	8.3	16.0	0.0	16.9	6.1	16.2	9.3	17.4	25.8	0.0
Ruddy Duck	0.0	0.0	0.0	0.0	0.0	0.0	25.0	10.0	0.0	0.0
Subtotal	78.6	309.3	74.8	159.7	326.0	262.2	198.8	378.1	280.0	191.6
<b>Miscellaneous</b>										
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	15.8	12.4	1.4	0.0	0.0	6.1	2.0	0.0	2.8	0.0
Mergansers	94.0	71.6	68.0	165.8	53.5	160.7	85.3	108.9	109.5	89.1
Subtotal	109.8	84.0	69.4	165.8	53.5	166.9	87.4	108.9	112.3	89.1
<b>Total Ducks</b>	<b>254.1</b>	<b>615.4</b>	<b>213.6</b>	<b>478.5</b>	<b>547.6</b>	<b>648.1</b>	<b>505.0</b>	<b>955.2</b>	<b>631.1</b>	<b>582.4</b>
Canada Goose	17.0	14.8	0.0	0.0	0.0	9.3	0.0	15.3	5.3	0.0
Am. coot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Species/Ponds	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
<b>Ducks</b>										
<b>Dabblers</b>										
Mallard	53.5	154.7	171.2	122.2	136.6	155.8	226.1	189.1	227.2	234.9
Am. black duck	17.4	7.1	18.6	45.7	34.2	15.5	25.9	46.6	43.8	25.7
Gadwall	0.0	0.0	11.2	0.0	0.0	0.0	1.9	0.0	1.8	1.9
Am. wigeon	19.8	18.5	4.2	35.7	10.0	0.0	28.2	10.3	24.9	31.1
Am. green-winged teal	0.0	11.0	12.5	5.0	0.0	50.4	21.8	7.6	7.4	26.0
Blue-winged teal	0.0	0.0	7.6	6.1	0.0	47.9	8.8	0.0	0.0	13.3
N. shoveler	0.0	0.0	5.2	0.0	0.0	0.0	0.5	0.0	0.0	1.0
N. pintail	0.0	1.7	0.0	4.8	3.1	4.6	3.0	5.6	6.2	2.8
Subtotal	90.8	193.1	230.6	219.5	183.9	274.3	316.3	259.1	311.3	336.8
<b>Divers</b>										
Redhead	0.0	0.0	0.0	0.0	1.8	0.0	1.0	0.0	0.0	1.0
Canvasback	0.0	0.0	1.9	0.0	0.0	0.0	5.9	0.0	0.0	5.6
Scaups	30.9	80.8	58.6	111.1	71.3	59.2	90.7	117.3	48.3	90.6
Ring-necked duck	35.6	162.0	60.0	2.0	18.3	35.6	46.8	16.9	32.7	56.2
Goldeneyes	5.0	70.2	53.4	347.3	102.7	65.0	101.0	153.4	181.3	102.2
Bufflehead	3.1	4.3	6.6	51.3	36.0	84.9	21.6	18.6	28.3	22.6
Ruddy Duck	0.0	0.0	0.0	3.5	0.0	3.5	1.8	0.0	3.5	1.8
Subtotal	74.6	317.3	180.4	515.2	230.1	248.1	268.9	306.1	294.1	280.0
<b>Miscellaneous</b>										
Oldsquaw	0.0	0.0	0.0	4.7	0.0	0.0	0.3	1.2	0.0	0.3
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoters	0.0	2.8	0.0	68.4	8.4	10.5	16.9	26.4	11.8	17.4
Mergansers	62.8	144.6	158.0	118.9	171.4	115.5	125.0	147.3	104.4	130.4
Subtotal	62.8	147.4	158.0	192.0	179.8	126.0	142.2	174.9	116.2	148.1
<b>Total Ducks</b>	<b>228.2</b>	<b>657.8</b>	<b>569.0</b>	<b>926.7</b>	<b>593.8</b>	<b>648.4</b>	<b>727.4</b>	<b>740.1</b>	<b>721.5</b>	<b>764.9</b>
Canada Goose	34.2	1.8	16.2	22.8	33.4	25.4	22.7	13.1	12.7	26.0
Am. coot	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	1.9

## Waterfowl Breeding Population Survey

## Western Ontario

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
<b>Ducks</b>										
<b>Dabblers</b>										
Mallard	238.4	242.5	246.8	251.1	255.2	259.0	262.3	265.1	267.5	269.7
Am. black duck	25.6	25.5	25.4	25.4	25.4	25.4	25.5	25.5	25.5	25.5
Gadwall	1.9	1.9	1.9	1.9	1.8	1.7	1.6	1.5	1.3	1.2
Am. wigeon	32.0	32.8	33.6	34.3	34.8	35.0	35.0	34.7	34.3	33.8
Am. green-winged teal	27.4	29.0	30.6	32.4	34.2	36.0	37.9	39.7	41.5	43.2
Blue-winged teal	15.0	16.7	18.3	20.0	21.5	22.9	24.2	25.3	26.3	27.1
N. shoveler	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	2.9
N. pintail	2.8	2.7	2.6	2.6	2.5	2.4	2.2	2.1	1.9	1.7
Subtotal	344.3	352.4	360.9	369.3	377.3	384.6	391.1	396.5	401.0	405.0
<b>Divers</b>										
Redhead	1.0	1.0	0.9	0.9	0.8	0.7	0.6	0.4	0.2	0.0
Canvasback	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.9	4.8	4.7
Scaups	90.6	90.7	90.8	90.9	91.1	91.3	91.6	91.9	92.3	92.7
Ring-necked duck	59.4	62.7	65.9	69.1	72.3	75.5	78.6	81.7	84.8	87.8
Goldeneyes	102.5	102.8	103.1	103.4	103.6	103.7	103.8	103.9	103.9	103.8
Bufflehead	23.0	23.5	24.1	24.7	25.3	25.8	26.3	26.6	26.8	26.9
Ruddy Duck	1.8	1.7	1.7	1.7	1.6	1.6	1.6	1.5	1.5	1.4
Subtotal	283.9	287.9	291.9	295.9	299.9	303.8	307.5	311.0	314.3	317.4
<b>Miscellaneous</b>										
Oldsquaw	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoters	17.2	17.0	16.9	16.7	16.5	16.3	16.0	15.5	15.0	14.2
Mergansers	132.3	134.3	136.3	138.4	140.5	142.7	144.9	147.1	149.3	151.6
Subtotal	149.9	151.7	153.5	155.4	157.4	159.3	161.2	162.9	164.6	166.1
<b>Total Ducks</b>	<b>778.1</b>	<b>792.0</b>	<b>806.3</b>	<b>820.7</b>	<b>834.6</b>	<b>847.7</b>	<b>859.7</b>	<b>870.4</b>	<b>879.9</b>	<b>888.5</b>
Canada Goose	27.2	28.4	29.6	30.9	32.2	33.6	35.0	36.5	38.0	39.6
Am. coot	2.3	2.6	2.9	3.2	3.5	3.8	4.1	4.4	4.6	4.8

Species/Ponds	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>Ducks</b>										
<b>Dabblers</b>										
Mallard	271.9	207.0	256.1	490.8	421.4	416.1	237.9	351.0	255.9	237.8
Am. black duck	25.6	11.0	17.3	24.6	15.5	18.3	27.4	24.3	52.2	49.9
Gadwall	1.1	0.0	1.8	1.8	3.5	0.0	0.0	0.0	3.5	0.0
Am. wigeon	33.3	0.0	6.6	36.5	44.8	23.2	33.2	36.5	33.2	36.5
Am. green-winged teal	44.8	27.0	2.5	63.9	50.4	66.4	24.6	32.0	55.9	46.6
Blue-winged teal	27.8	0.0	0.0	0.0	30.0	24.0	24.0	18.0	95.9	12.0
N. shoveler	3.1	2.0	2.0	0.0	2.0	4.1	6.1	0.0	0.0	0.0
N. pintail	1.4	0.0	3.1	0.0	0.0	4.6	0.0	0.0	0.0	0.0
Subtotal	408.9	247.0	289.4	617.6	567.7	556.6	353.2	461.8	496.6	382.9
<b>Divers</b>										
Redhead	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0
Canvasback	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scaups	93.0	158.0	83.3	77.0	144.8	162.1	193.7	171.5	36.3	27.6
Ring-necked duck	90.8	26.9	6.7	76.0	64.4	75.0	81.8	106.8	161.5	200.6
Goldeneyes	103.6	79.7	128.9	111.1	136.3	77.6	36.7	38.8	183.8	104.0
Bufflehead	27.0	12.2	12.9	28.3	15.4	20.6	23.2	19.3	34.7	11.6
Ruddy Duck	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	320.4	276.8	231.9	292.4	361.0	337.9	335.3	336.4	416.3	343.8
<b>Miscellaneous</b>										
Oldsquaw	0.3	0.0	1.2	0.0	0.0	0.0	0.0	0.0	1.1	0.0
Eiders	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scoters	13.3	2.9	1.7	18.9	1.7	2.5	0.0	2.5	8.9	11.4
Mergansers	153.9	101.1	127.0	156.6	138.1	105.5	111.1	180.9	209.8	305.9
Subtotal	167.5	104.0	129.8	175.5	139.8	108.0	111.1	183.4	219.8	317.3
<b>Total Ducks</b>	<b>896.8</b>	<b>627.9</b>	<b>651.1</b>	<b>1085.6</b>	<b>1068.4</b>	<b>1002.6</b>	<b>799.5</b>	<b>981.7</b>	<b>1132.7</b>	<b>1044.0</b>
Canada Goose	41.2	47.7	35.8	75.5	67.5	74.7	58.8	53.2	46.1	67.5
Am. coot	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

## Waterfowl Breeding Population Survey

Western Ontario

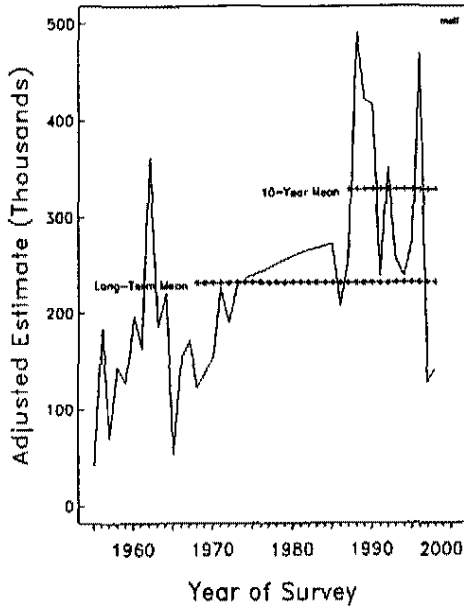
Appendix 1 (continued). Long-term trend in adjusted waterfowl breeding population estimates (thousands).

Species/Ponds	1995	1996	1997	1998
<b>Ducks</b>				
<b>Dabblers</b>				
Mallard	274.7	469.0	127.6	141.0
Am. black duck	40.7	21.8	4.7	34.3
Gadwall	0.0	0.0	0.0	0.0
Am. wigeon	7.1	18.4	15.2	0.0
Am. green-winged teal	12.3	113.0	76.9	13.7
Blue-winged teal	19.3	21.8	4.3	4.8
N. shoveler	0.0	0.0	0.0	0.0
N. pintail	0.0	0.0	0.0	0.0
Subtotal	354.1	644.0	228.7	193.9
<b>Divers</b>				
Redhead	0.0	0.0	0.0	0.0
Canvasback	0.0	0.0	0.0	0.0
Scaups	4.9	17.2	13.3	11.3
Ring-necked duck	257.0	240.0	319.8	537.4
Goldeneyes	23.5	702.9	171.2	75.5
Bufflehead	6.9	31.4	12.5	9.9
Ruddy Duck	0.0	10.4	0.0	0.0
Subtotal	292.3	1002.0	516.7	634.1
<b>Miscellaneous</b>				
Oldsquaw	0.0	13.4	0.0	0.0
Eiders	0.0	0.0	0.0	0.0
Scoters	0.0	82.2	95.6	0.0
Mergansers	224.6	510.8	442.8	116.3
Subtotal	224.6	606.4	538.5	116.3
<b>Total Ducks</b>	<b>871.0</b>	<b>2252.3</b>	<b>1283.9</b>	<b>944.3</b>
Canada Goose	82.6	34.4	49.3	31.9
Am. coot	0.0	0.0	0.0	0.0

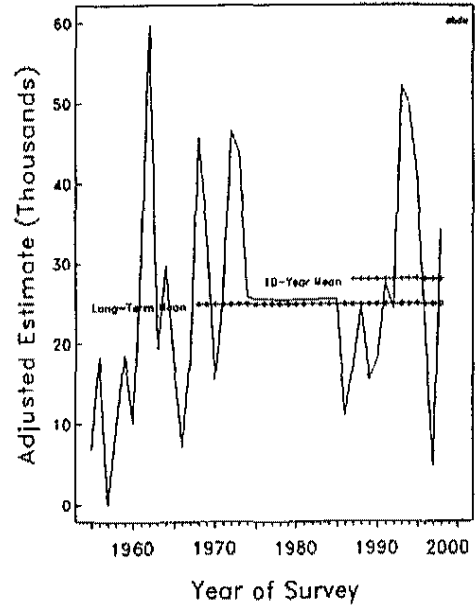


Dabbling Ducks

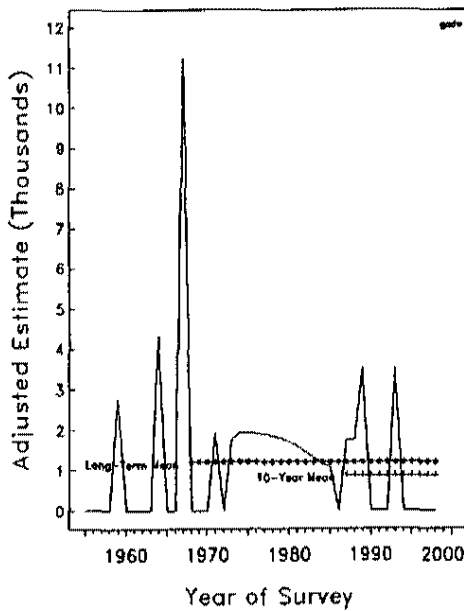
Trend Graph 1. Mallard



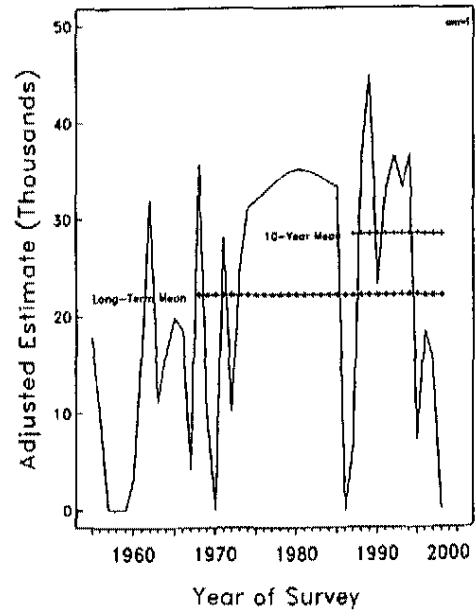
Trend Graph 2. Black Duck



Trend Graph 3. Gadwall

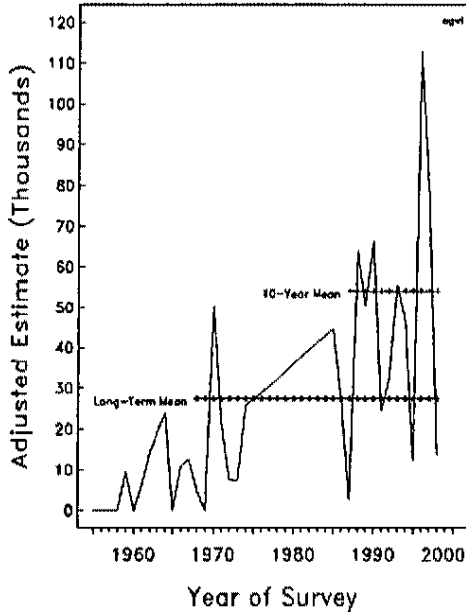


Trend Graph 4. American Wigeon

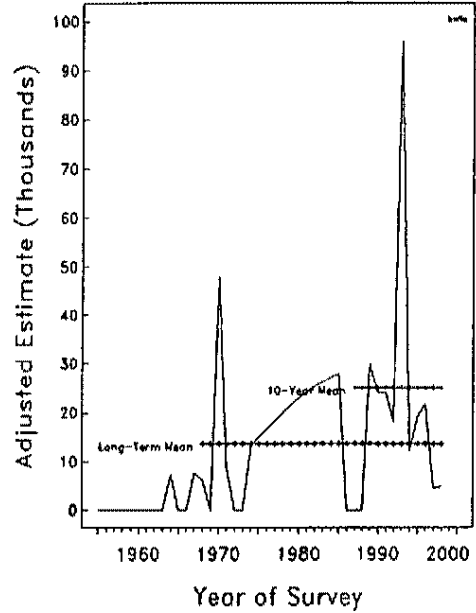


Dabbling Ducks Continued

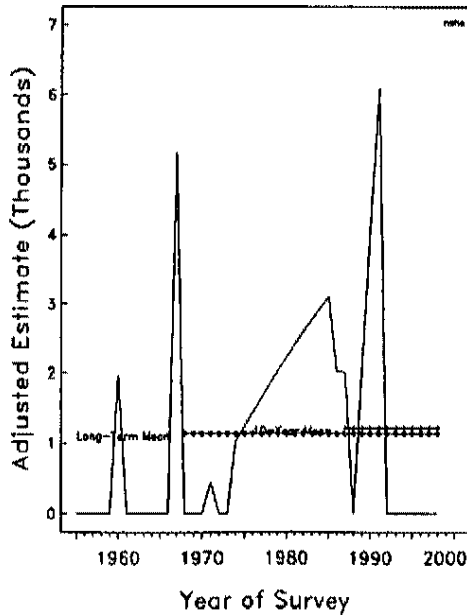
Trend Graph 5. Green-winged Teal



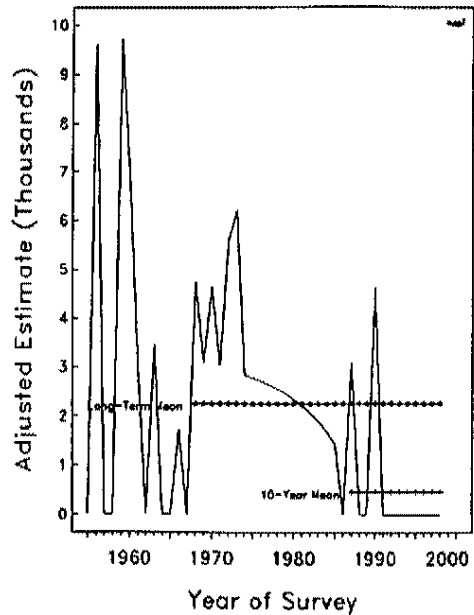
Trend Graph 6. Blue-winged Teal



Trend Graph 7. Northern Shoveler

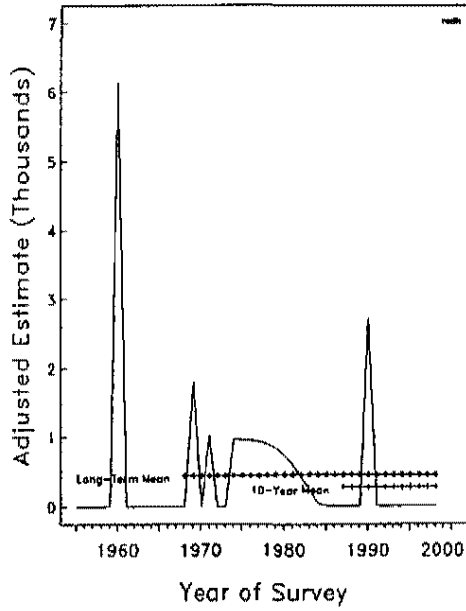


Trend Graph 8. Northern Pintail

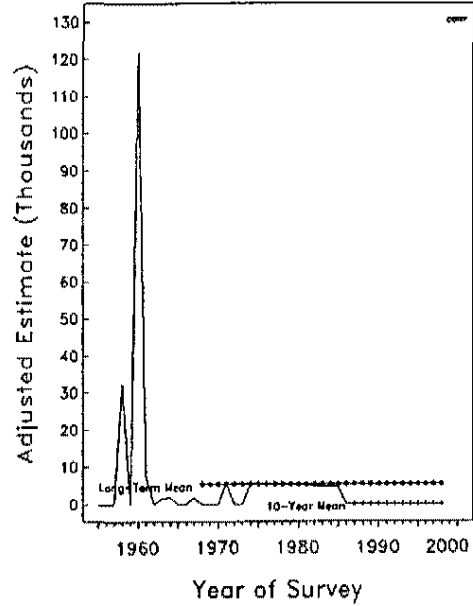


Diving Ducks

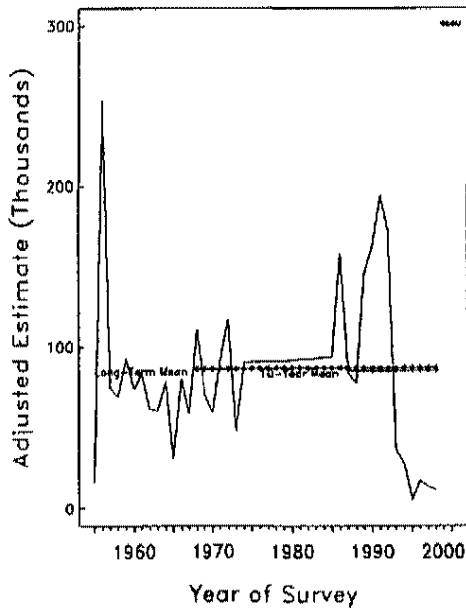
Trend Graph 9. Redhead



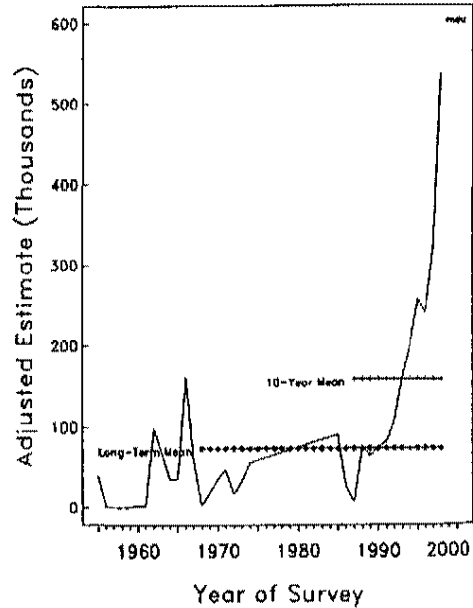
Trend Graph 10. Canvasback



Trend Graph 11. Scaups

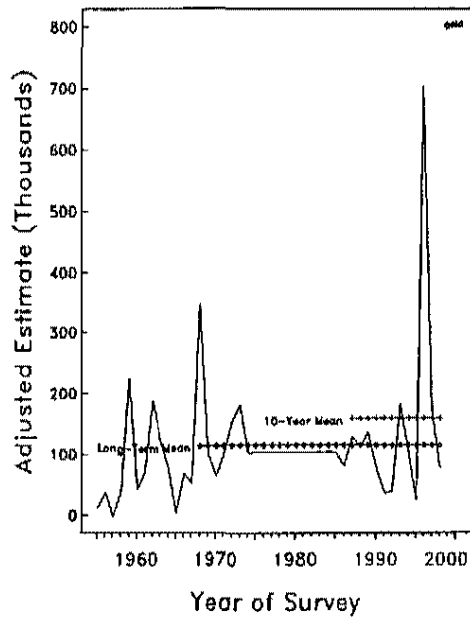


Trend Graph 12. Ring-necked Duck

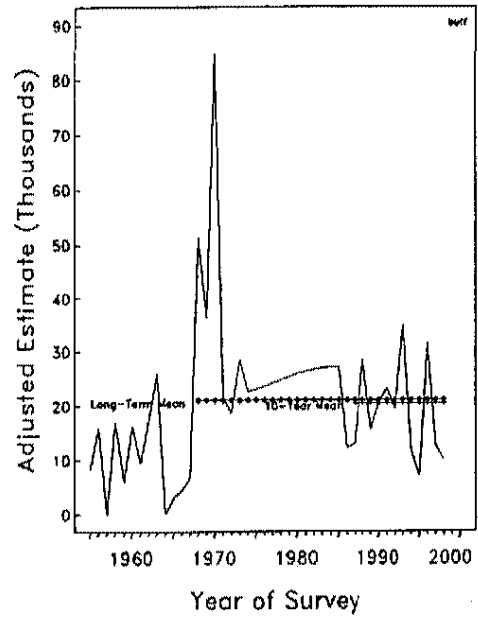


Diving Ducks Continued

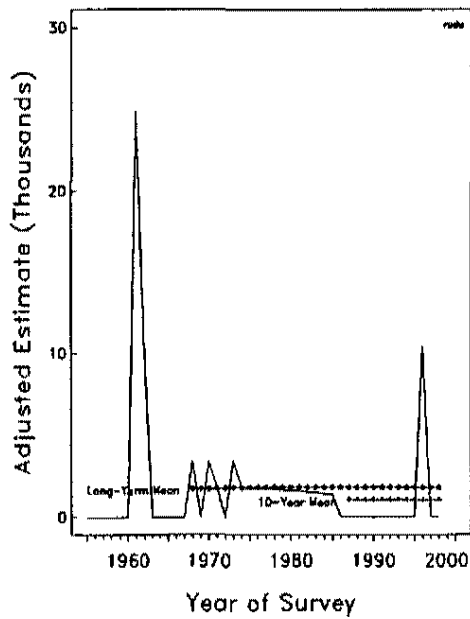
Trend Graph 13. Goldeneyes



Trend Graph 14. Bufflehead

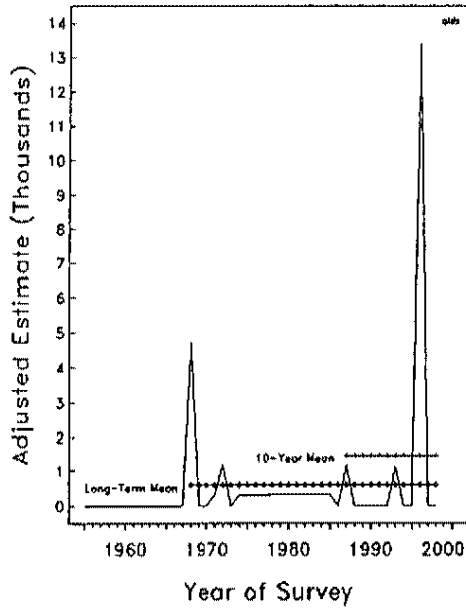


Trend Graph 15. Ruddy Duck

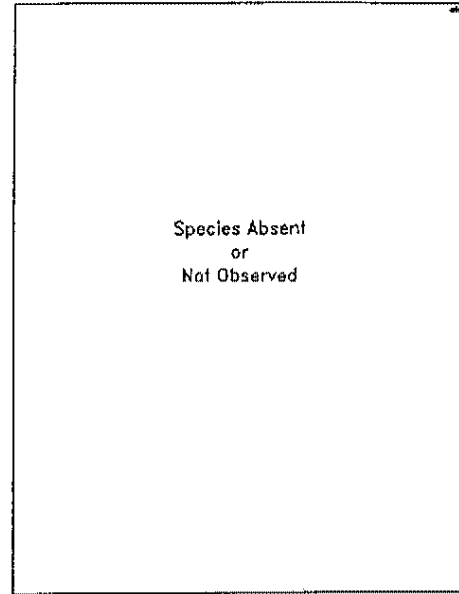


Miscellaneous Species

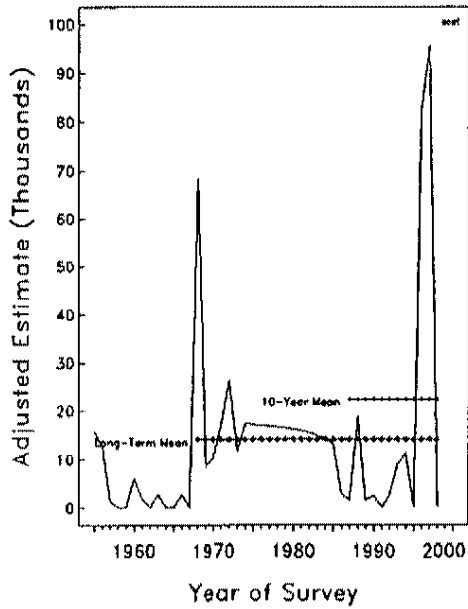
Trend Graph 16. Oldsquaw



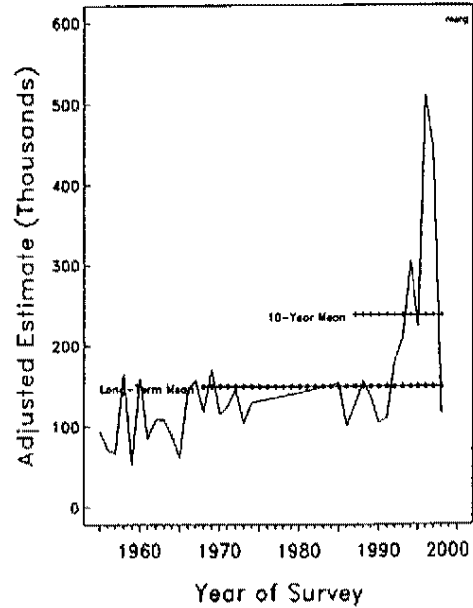
Trend Graph 17. Eiders



Trend Graph 18. Scoters

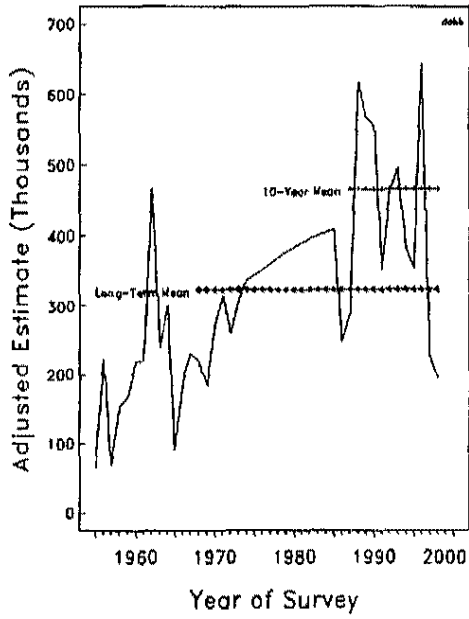


Trend Graph 19. Mergansers

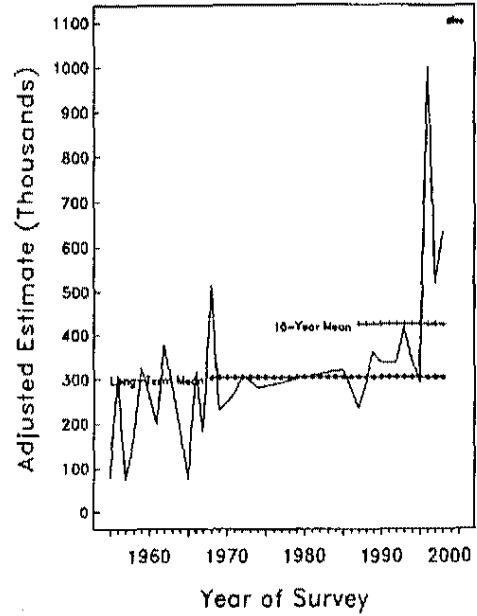


Species Groups

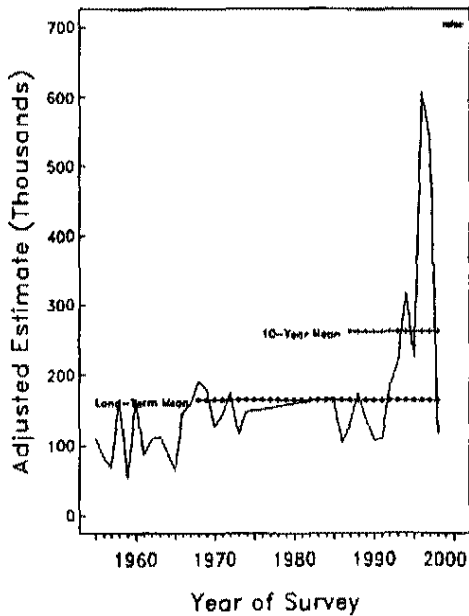
Trend Graph 20. Dabbling Species



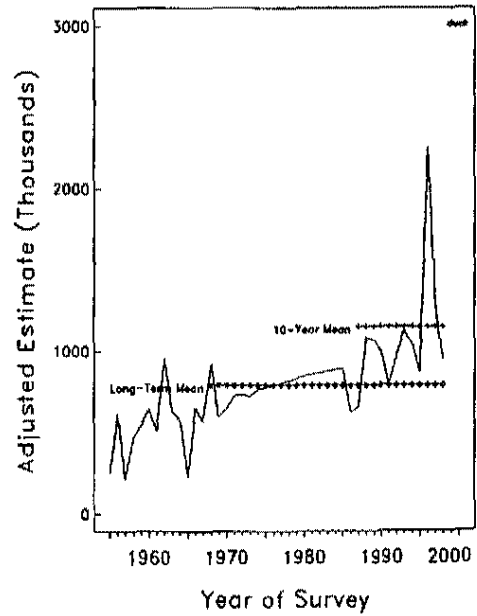
Trend Graph 21. Diver Species



Trend Graph 22. Misc. Species

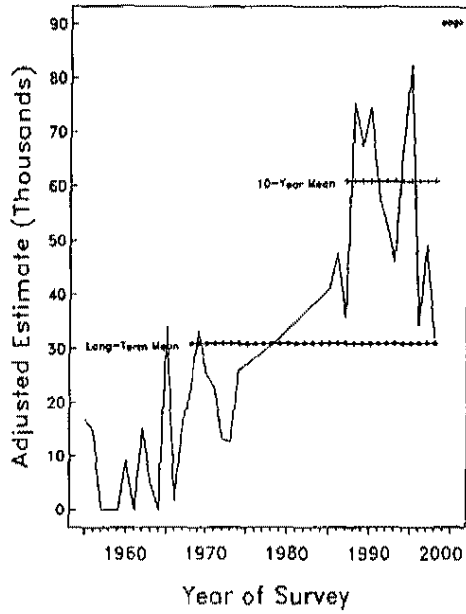


Trend Graph 23. Total Ducks



Canada Goose and American Coot

Trend Graph 24. Canada Goose



Trend Graph 25. American Coot

