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Chronology of Waterfowl Migration
March 18 to May 3, 1971

Dave Lake, John Lusby NWA, Amherst Point Sanctuary, Germantown NWA

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Chronology of Waterfowl Migration and Nesting in the Tintamarre, Missaquash and Germantown National Wildlife Areas and Cole's Island and Ram Pasture Salt Marsh

Final Report

Canadian Wildlife Service

Contract Number WE-71-72-7

Michael Jones

Introduction:

Waterfowl observations were conducted during the period of March 18 to April 27, 1971, to record the arrival and distribution of waterfowl on the Tintamarre and Missaquash National Wildlife Areas and to correlate waterfowl use of the above fresh water marshes with that of the salt marshes of Cole's Island and Ram Pasture.

Each of the above areas was visited at dawn, mid-day and dusk in accordance with a pre-set weekly schedule. During each observation period notes were taken concerning the total number and location of each species of waterfowl, number of paired birds and waterfowl activity.

A baiting exercise was undertaken in an attempt to attract and maintain waterfowl populations on the Tintamarre National Wildlife Area.

Samples of available spring foods were collected periodically from selected areas of the Tintamarre National Wildlife Area, which were frequented by Waterfowl.

The Germantown National Wildlife Area was visited twice weekly to determine the extent of waterfowl use.

Procedure:

Tintamarre National Wildlife Area

The procedure for observations on the Tintamarre marsh were dependent upon the location of open water areas

suitable for waterfowl use. From March 18 to April 1, such areas were restricted to Long Lake and Fillmore's Hole. The south-eastern section of Front Lake was free of ice on April 2, while all other areas remained covered with ice and snow until April 15. Large Lake remained covered with ice until approximately April 22.

From March 18 to April 15, all areas of open water were visited during each dawn, mid-day and dusk, observation period. Bi-weekly checks were made of the Paunchy Pond area to record spring break-up. After the break-up of Paunchy Pond and surrounding impoundments on or about April 15, the observer was obliged to either conduct a rough count of the waterfowl in all areas of the marsh or concentrate on one or two areas and record waterfowl abundance and activity.

The size, level topography and poor accessibility of areas suitable for waterfowl use within the Tintamarre marsh disallowed the observer from conducting a thorough count of the waterfowl and at the same time record undisturbed waterfowl movement.

To attract and maintain waterfowl populations selected areas within the Tintamarre National Wildlife Area were periodically baited with oats. Bait sites were selected on the basis of observations of waterfowl use. Baiting procedure is outlined in Table 1.

Cole's Island, Ram Pasture

Initial observations were conducted by walking either the Ram Pasture or Cole's Island and observing the waterfowl from vantage points along the dikes.

In addition to being time consuming this observation technique disrupted waterfowl activity, thus hampering accurate waterfowl counts.

To allow the observer to check Cole's Island, Ram Pasture and adjacent marshlands during each observation period, a series of observation points were established along the roads bordering the areas.

Missaquash National Wildlife Area

The Missaquash marsh was visited four times in the course of the six-week study. Observations were limited to the eastern end of the marsh in the area of Patten and Hackmatack Lake.

Germantown National Wildlife Area

Observations on the Germantown marsh were conducted by two observers. One observer walked or canoed the main canal and recorded the number of waterfowl located in the canal and on the marshlands. The second observer circled the marsh by car, stopping at selected vantage points to observe waterfowl activity in areas not visible from the main canal.

Results:

The results of observations on the Tintamarre National Wildlife Area are presented in Table 2. Figures 2, 3 and 4 represent the total number of black duck (Anas rubripes) and pairs of black duck observed on the Tintamarre marsh at dawn, mid-day and dusk repectively. A break-down of the number of pintail (Anas acuta) observed on a dawn, mid-day and dusk basis is in Figure 5. The highest number of black duck and pairs of black duck during each day of observation is shown in Figure 6. Figure 7 represents the largest number of green-winged teal (Anas carolinensis) observed during each day of observation.

The results of observations on Cole's Island, Ram Pasture and surrounding marshlands are presented in Table 3. The total number of black duck and black duck pairs at dawn, mid-day and dusk observation periods are presented in Figures 8, 9 and 10 respectively. Similarly Figures 11, 12 and 13 represent the number of Canada geese (Branta canadensis) observed at dawn, mid-day and dusk. Figures 14 and 15 represent the highest number of green-winged teal and red-breasted mergansers (Mergus serrator)observed during each day of observation.

The results of the four observation periods on the Missaquash National Wildlife Area are shown in Table 4.

The results of observations on the Germantown marsh are presented in Table 5. The total number of black duck and pairs of black duck are presented in Figure 16.

Results of Baiting Exercise

On two occasions black duck were observed feeding in baited areas and most probably on bait. On April 1, black duck were observed feeding in a section of Long Lake that had been baited with oats on March 31. Similarly on April 6 black duck were observed feeding in a baited area of Fillmore's Hole.

Discussion:

The graphs of the number of black duck on the Cole's Island, Ram Pasture area (Figures 8, 9 and 10) and the Tintamarre National Wildlife Area (Figures 2, 3 and 4) follow a similar pattern. All of the above graphs appear to reflect two periods of waterfowl influx or immigration, the first occurring in late March, early April and a second influx on or about April 17.

The initial immigration appeared to apply solely to the number of black duck on the fresh and salt water areas. The second immigration was reflected in an increase in the number of blacks, pintail and green-winged teal and the initial appearance of blue-winged teal (Anas discors), red-breasted mergansers on the salt or fresh water areas.

A total of 69 black duck were observed on Long Lake on April 5. Observations on all areas of open water in the Tintamarre marsh from April 7 to 15 showed a gradual decline in the total number of blacks. It was felt that the decline in the total number was a result of emigration. It is highly unlikely that the 69 blacks observed on April 5 constituted a significant portion of the 97 blacks observed in Impoundment 5 on April 17. The high counts of April 17 are believed to reflect an immigration of black duck into the Tintamarre marsh. The sudden increase in the number of pintail and green-winged teal would further suggest an immigration of waterfowl.

The total number of black duck, pintail and green-winged teal observed on the Tintamarre National Wildlife Area are in excess of the numbers observed on the salt marshes of Cole's Island and Ram Pasture. This would suggest that the waterfowl on the Tintamarre marshes are utilizing salt marshes other than those in or around Cole's Island and the Ram Pasture.

Canada Geese:

The total number of Canada geese utilizing Cole's Island, Ram Pasture and surrounding marshlands and agricultural fields appeared to steadily increase during the six weeks of observation. Prior to April 5 the area covered during each

observation period was restricted to either Cole's Island or the Ram Pasture. However, it soon was apparent that both geese and waterfowl were frequenting the marshlands and agricultural fields adjacent to the above areas. Observations after April 5 were conducted from selected vantage points along roads bordering the areas so that the counts during each observation period would include all areas where waterfowl could be present.

The fluctuations in the number of geese observed during successive observation periods, especially during the mid-day counts (Figure 12) may represent a fluctuation in the number of geese in the area, or may be a result of poor visibility or a lack of time for the observer to thoroughly check all areas. On several occasions geese were observed just beyond the dike wall of the Westcock marsh. Due to the limited amount of time the observer could not check the area immediately beyond the dike wall, an area which was not visible from the road, but where geese could have been present.

In light of this it is extremely difficult to interpret the movement of geese between each area and with respect to seasonal migration patterns.

The 312 Canada geese observed on April 12 were observed flying in a northerly direction over the Ram Pasture.

The observer was unable to determine if the geese had alighted from the Westcock marsh or if they had flown over the Cumberland Basin and were only visible once over the Westcock marsh. This was the first time the observer noted geese flying due north. On previous occasions when geese alighted from the Cole's Island, Ram Pasture area, they flew in an easterly or south-easterly direction along the edge of the Cumberland Basin. The northward movement of April 12 may represent an emigration of geese out of the area, while the high counts from April 17 to 28 reflect an immigration of geese from areas south of the Cumberland Basin.

Germantown National Wildlife Area

Observations on the Germantown marsh from March 26 to April 27 showed an almost steady increase in the number of black duck until April 27.

During the early part of the study (March 26 to April 6) waterfowl were entirely confined to the open water of the main canal. On April 9 spring break-up had caused flooding in the western section of the marsh creating a favourable area for waterfowl use. By April 16, the spring run-off had caused the water level in the canal to flood the canal banks, and cover almost all the western half of the marsh. Although the higher canal walls in the eastern section of the marsh contained the water rise, several large

bodies were formed in the fields as a result of break-up of accumulated snow and ice.

Spring break-up of the many small ponds scattered throughout the marsh and along the forest edge occurred on or about April 13. Prior to April 13 paired and single blacks were confined to the main canal and flooded areas. With the openings of the small ponds the waterfowl were given the opportunity to disperse and establish breeding territories. After April 13, paired and single blacks were frequently observed in isolated areas, however their use of the ponds did not appear to be consistent. On only three occasions were paired blacks located in the same pond on two consecutive days of observation. In most cases the appearance of waterfowl in a pond was sporadic, for they were present one week yet nowhere to be seen the next visit.

With the exception of the observations of April 27, there were no indications that the blacks had initiated nesting on established breeding territories. However on April 27 two blacks were observed in separate ponds. Both engaged in pursuit flights when foreign pairs approached their areas. One of the defending blacks was joined by another (presumably his mate) and then both left the pond.

Behavioural Observations:

Black duck

Behavioural observations among paired blacks were observed as early as March 22. However, most of the behavioural patterns observed were among paired and single blacks aggregated in areas such as Long Lake, Fillmore's Hole and Impoundment and were mainly of an intraspecific aggressive nature rather than courtship and nesting. The observer was unable to make any behavioural patterns among blacks that would positively indicate that they had initiated nesting or indicate the exact location of the nest.

Four separate pairs of blacks were consistently observed in specific areas of the Tintamarre marsh; one in Impoundment 5, one in Fillmore's Hole and two in Front Lake. Although behavioural observations were limited, the consistency with which the pairs were either seen or heard in their areas suggested that they had established a breeding territory. On several occasions pursuit flights were observed among three of the four pair indicating that the birds were defending the areas.

In two cases heavy drainage of the areas resulted in the pairs abandoning their territories. Changing water levels especially in Front and Long Lake and to a lesser extent in the Paunchy area continually altered the location and extent of open water areas suitable for black duck use and may have hampered or deterred black duck selection of breeding territories.

Single and paired blacks were frequently observed flying between Paunchy Pond and surrounding impoundments and the field on the opposite side of the road from the Tintamarre National Wildlife Area. However, because of the level topography of the Paunchy Pond the observer was unable to note the exact location from which the birds had alighted or their final destination.

Table 1. Baiting Procedure in the Tintamarre National Wildlife Area

Location	Date Bait Set	Type and Amount of Bait
Front Lake	April 7	1/2 bag of oats
Front Lake	April 14	1/2 bag of oats
Long Lake	March 21	1/2 bag of oats
Long Lake	March 25	1/2 bag of oats
Long Lake	March 31	1/2 bag of oats
Long Lake	April 4	1/2 bag of oats
Long Lake	April 7	1/2 bag of oats
Long Lake	April 14	3/4 bag of oats
Fillmore's Hole	March 25	1/2 bag of oats
Fillmore's Hole	March 26	1 bag of oats
Fillmore's Hole	March 31	1 1/2 bag of oats
Fillmore's Hole	April 19	1 bag of oats
Paunchy Pond	April 21	1 bag of oats 1 bag of corn
Impoundment 5	April 19	1 bag of oats
Impoundment 5	April 21	1 bag of oats
Impoundment 2	April 19	1/2 bag of oats
Impoundment 2	April 21	1/2 bag of oats

Table 2. Waterfowl observations of the Tintamarre National Wildlife Area at dawn, mid-day and dusk from March 18 to April 26, 1971.

Date	Black duck	Pintail	Green-winged teal	Blue-winged teal	Common merganser	Great blue heron	Canada geese	Brant	Mallard
Dawn									
21/3/71	4(2)*	--	--	--	--	--	26	--	--
22/3/71	3(1)	--	--	--	--	--	--	--	--
24/3/71	5(2)	--	--	--	--	--	--	--	--
1/4/71	21(8)	--	--	--	--	--	--	--	--
4/4/71	24(6)	--	--	--	--	--	--	--	--
7/4/71	18(3)	1	--	--	--	--	--	--	--
17/4/71	67(11)	4(2)	68	--	37	--	--	--	--
19/4/71	47(16)	7(3)	39	--	--	--	--	--	--
22/4/71	52(20)	10(4)	36(1)	--	--	5	--	--	--
28/4/71	42(14)	13(4)	33(15)	6(3)	-	--	--	--	--
Mid-day									
18/3/71	4(2)	--	--	--	--	--	--	--	--
25/3/71	12(5)	--	--	--	--	--	--	--	--
27/3/71	9(4)	--	--	--	--	--	--	--	--
29/3/71	11(4)	--	--	--	--	--	--	--	1
31/3/71	29(9)	--	7	--	--	--	--	--	--

Table 2. Waterfowl observations of the Tintamarre National Wildlife Area at dawn, mid-day and dusk from March 18 to April 26, 1971. (continued)

Date	Black duck	Pintail	Green-winged teal	Blue-winged teal	Common merganser	Great blue heron	Canada geese	Brant	Mallard
Mid-day									
5/4/71	69(20)	4(2)	--	--	--	--	--	--	--
8/4/71	45(14)	--	--	--	--	--	--	--	--
12/4/71	18(6)	--	7(3)	--	--	--	--	--	--
14/4/71	19(8)	3(1)	--	--	2(1)	--	4	--	--
15/4/71	12(5)	7(3)	23(2)	--	--	--	--	--	--
18/4/71	9(4)	--	2(1)	--	--	--	--	--	--
21/4/71	70(17)	6(3)	16(7)	2(1)	--	1	--	--	--
26/4/71	42(18)	6(2)	91(31)	16(8)	--	--	--	--	--
Dusk									
25/3/71	7(3)	--	--	--	--	--	--	--	--
1/4/71	15(7)	--	--	--	--	--	--	--	--
3/4/71	25 (4)	--	--	--	--	--	--	--	--
7/4/71	33(11)	--	--	--	1	--	--	--	--
8/4/71	30(11)	--	--	--	1	--	--	--	--
17/4/71	97(13)	18(9)	40	--	--	--	2	--	--
19/4/71	58(6)	2(1)	17	--	--	--	--	--	--
22/4/71	7(2)	3(1)	17	--	--	--	10	5	--

*Total Number of Birds (Total Number of Pairs)

Table 3. Waterfowl observed on the Ram Pasture, Cole's Island and adjacent marshlands at dawn, mid-day and dusk from March 19 to April 28, 1971.

Date	Canada geese	Black duck	Green-winged teal	Red-breasted merganser	Blue-winged teal	Great blue heron	Ring-necked duck	Common merganser	Pintail	Mallard
Dawn										
25/3/71	122	6(2)	--	--	--	--	--	--	--	--
31/3/71	66	16(7)	--	--	--	--	--	--	--	--
4/4/71	25	16(2)	10	--	--	--	--	--	--	--
8/4/71	147	11(2)	21	--	--	--	--	--	--	--
14/4/71	184	14(6)	47	40	15	4	--	--	--	--
15/4/71	21	20(8)	47	39	21	--	--	--	2(1)	--
Mid-day										
19/31/71	35	4(2)	--	--	--	--	--	--	--	--
1/4/71	261	24(7)	--	--	--	--	--	2	--	--
7/4/71	196	22(8)	18(1)	--	--	--	--	--	--	--
8/4/71	135	6(3)	--	--	--	--	--	--	--	--
18/4/71	306	16(7)	11(1)	112	--	4	--	2(1)	--	--
19/4/71	140	16(8)	10(3)	41	--	1	--	--	--	--
22/4/71	246	3(1)	24(4)	45	--	1	--	--	--	1

Table 3. Waterfowl observed on the Ram Pasture, Cole's Island and adjacent marshlands at dawn, mid-day and dusk from March 19 to April 28, 1971. (continued)

Date	Canada geese	Black duck	Green-winged teal	Red-breasted merganser	Blue-winged teal	Great blue heron	Ring-necked duck	Common merganser	Pintail	Mallard
Mid-day										
26/4/71	314	20(8)	82(32)	54(13)	--	2	--	--	--	1
28/4/71	353	50(14)	19(3)	21	--	--	1	--	--	--
Dusk										
23/3/71	85	27(7)	--	--	--	--	--	--	--	--
24/3/71	49	10(4)	--	--	--	--	--	--	--	--
4/4/71	11	29(7)	10	--	--	--	--	--	4(2)	--
5/4/71	245	2(1)	--	--	--	--	--	--	4(2)	--
12/4/71	312	22(10)	10	--	--	--	--	--	--	--
26/4/71	372	20(8)	50(15)	66(17)	1	--	--	--	2(1)	--

Table 4. Waterfowl observations on the Missaquash Marsh from March 27 to April 15.

Date	No. of each species observed		
	Black duck	Green-winged teal	Blue-winged teal
27/3/71	1	0	0
3/4/71	0	0	0
7/4/71	5(2)*	0	0
15/4/71	5(1)*	6(3)	2(1)

* (Total Number of Pairs)

Table 5. Waterfowl observations on the Germantown National Wildlife Area from March 26 to April 27 inclusive.

Date	Black duck	Green-winged teal	Blue-winged teal	Common golden eye	Common merganser	Hooded merganser	Pintail	Shoveler	Canada geese	Pied-billed grebe	Mallard	Ring-necked duck
26/3/71	2(1)*	--	--	--	--	--	--	--	--	--	--	--
30/3/71	20(4)	--	--	10	26	--	--	--	--	1	2(1)	--
2/4/71	18(4)	--	--	6(3)	10(1)	--	--	--	60	--	--	--
6/4/71	34(14)	2(1)	--	--	6(1)	2(1)	--	--	16	--	--	--
9/4/71	51(7)	--	--	--	--	4(2)	--	--	--	--	--	--
13/4/71	47(18)	--	--	--	--	--	--	--	--	--	1	--
16/4/71	39(13)	2(1)	--	--	--	--	--	--	24	--	--	6(1)
20/4/71	43(16)	31(2)	1	--	--	--	--	--	5	--	--	5(2)
23/4/71	61(26)	57(7)	7	--	--	--	--	--	63	--	--	5(1)
27/4/71	31(15)	31(7)	--	--	2(1)	--	2(1)	2(1)	--	--	--	2(1)

* Total Number of Birds (Total Number of Pairs)

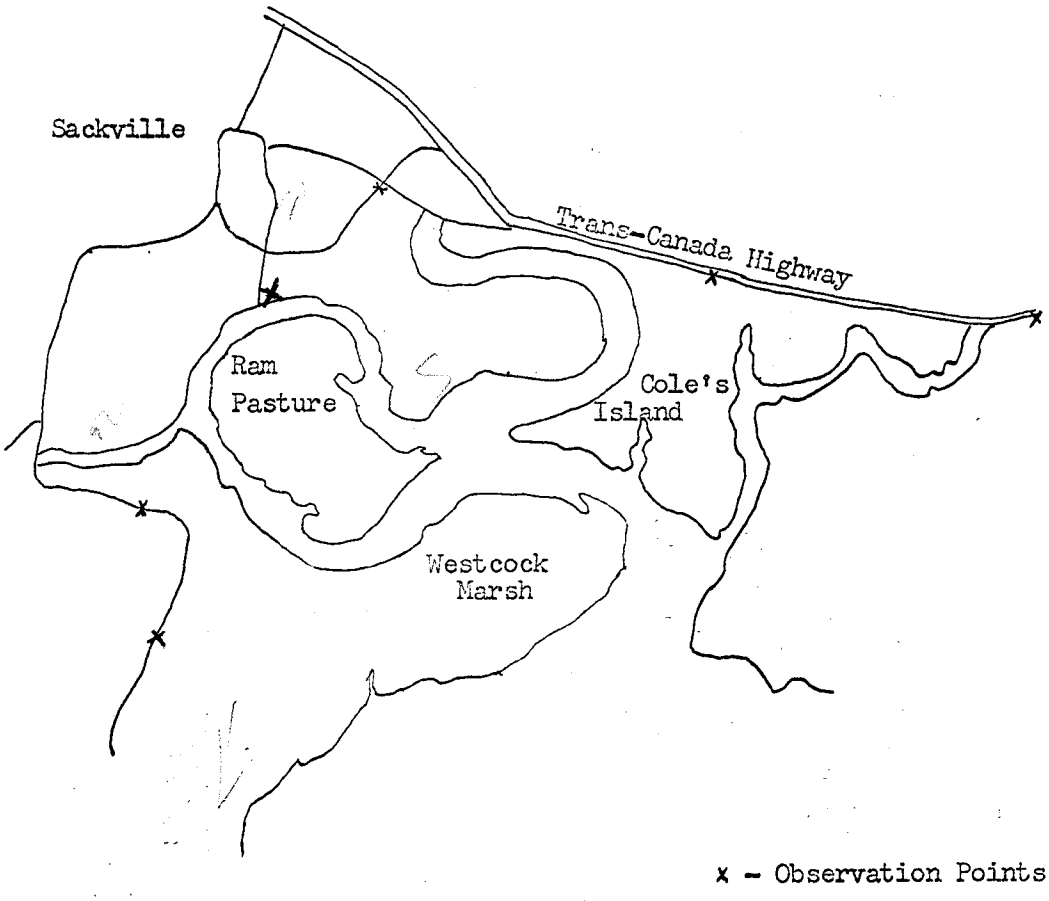


Figure 1. Observation points along roads bordering the Ram Pasture - Cole's Island Area

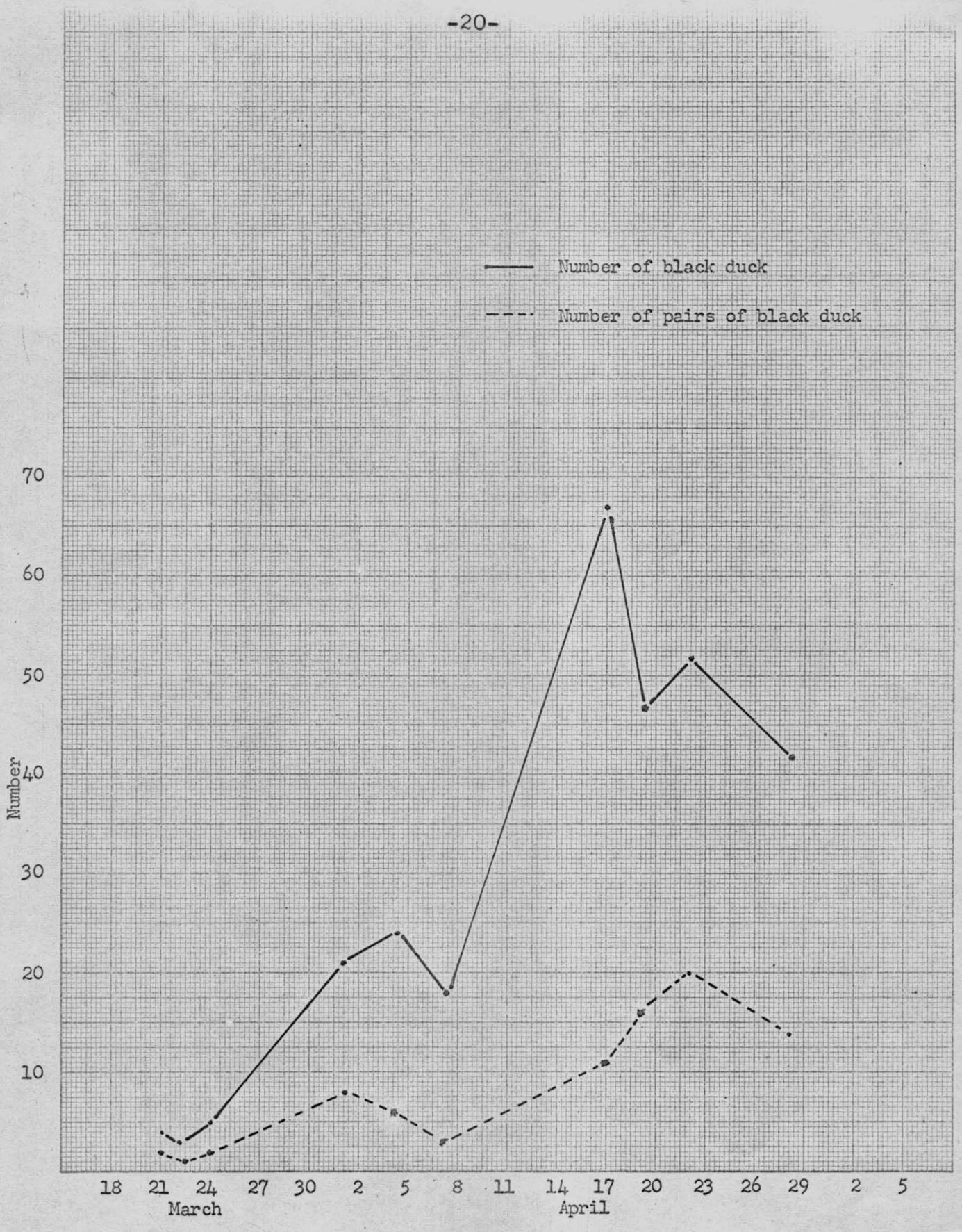


Figure 2. Dawn black duck counts on Tintamarre National Wildlife Area.

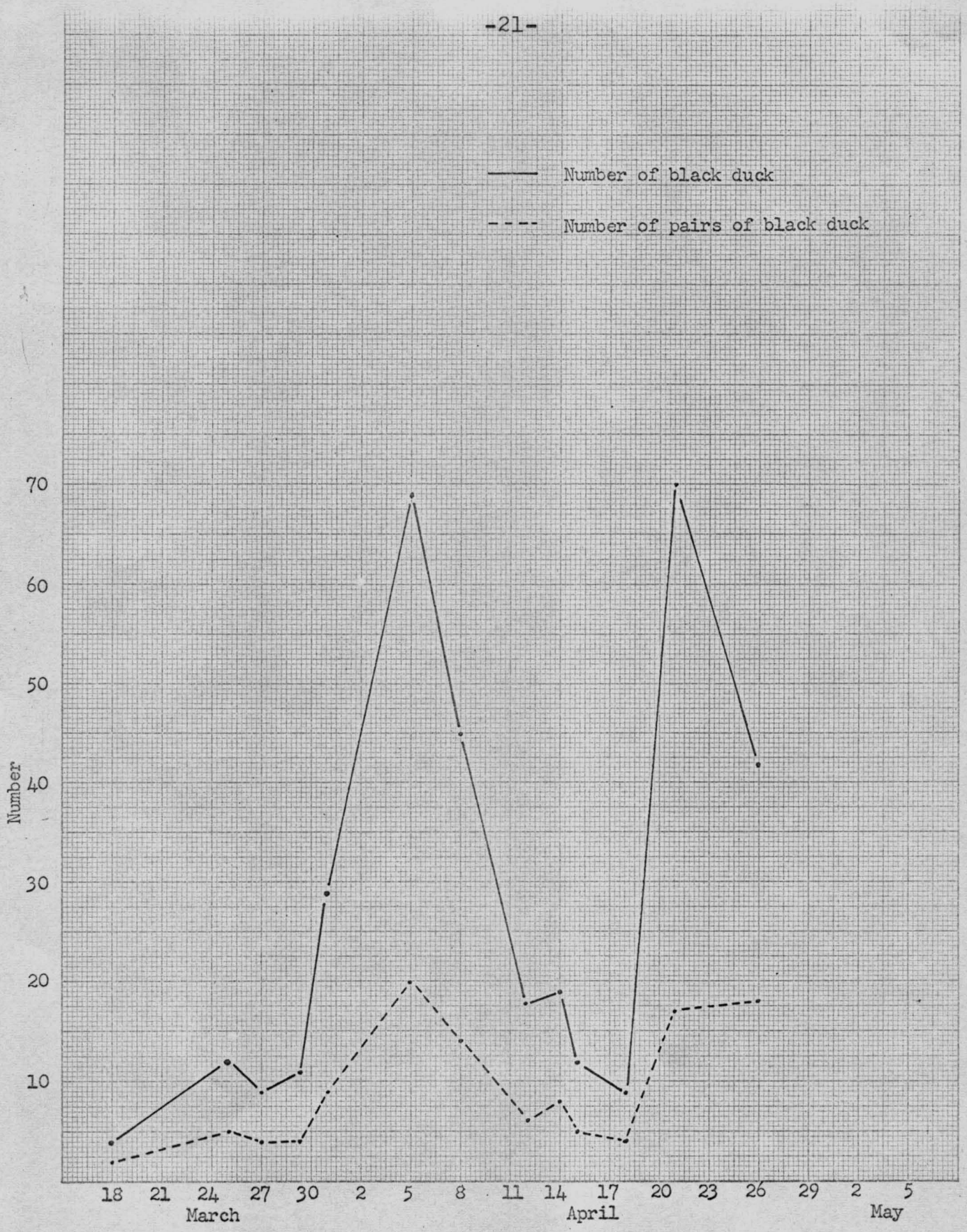


Figure 3. Mid-day black duck counts on the Tintamarre National Wildlife Area.

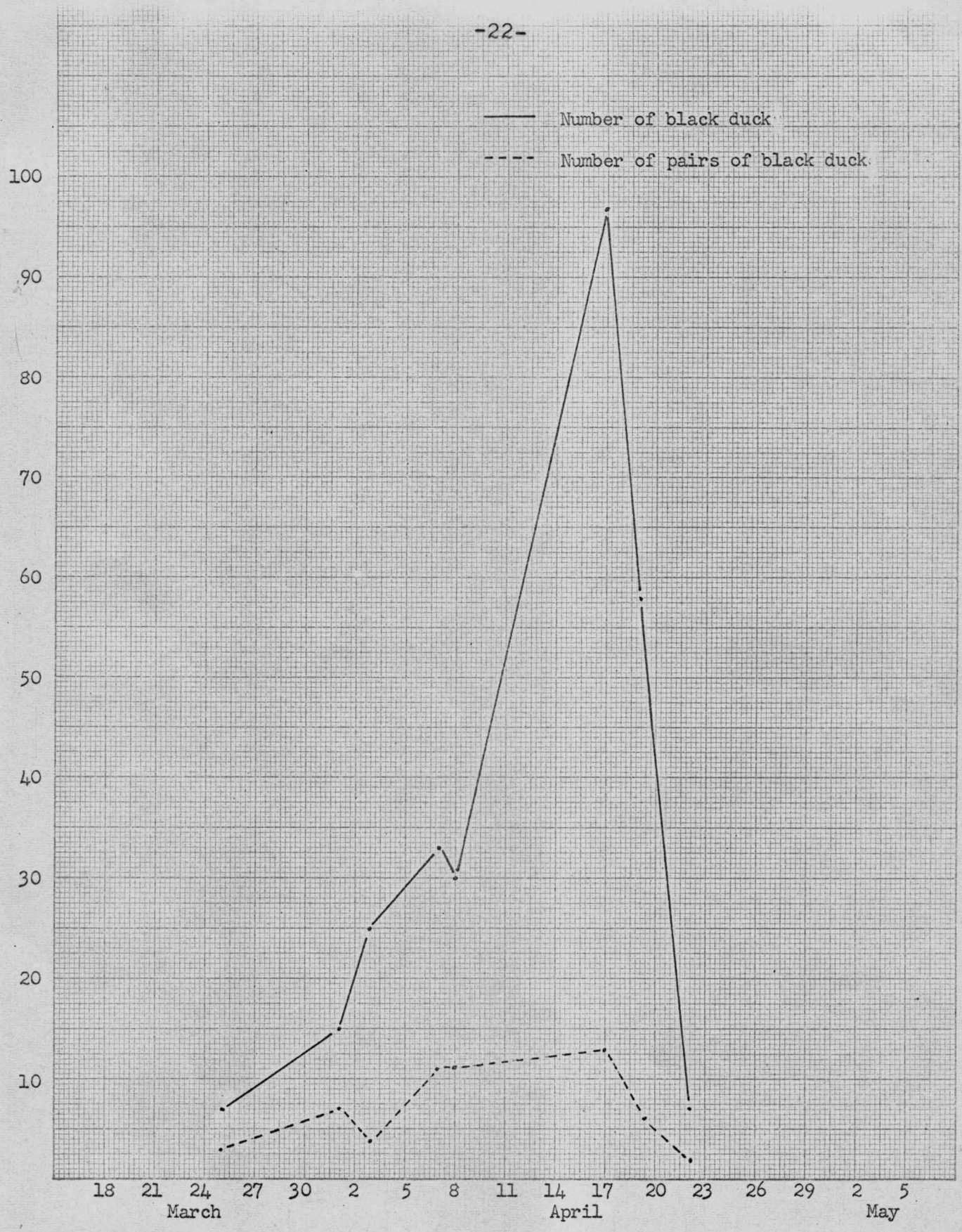


Figure 4. Dusk black duck counts on the Tintamarre National Wildlife Area.

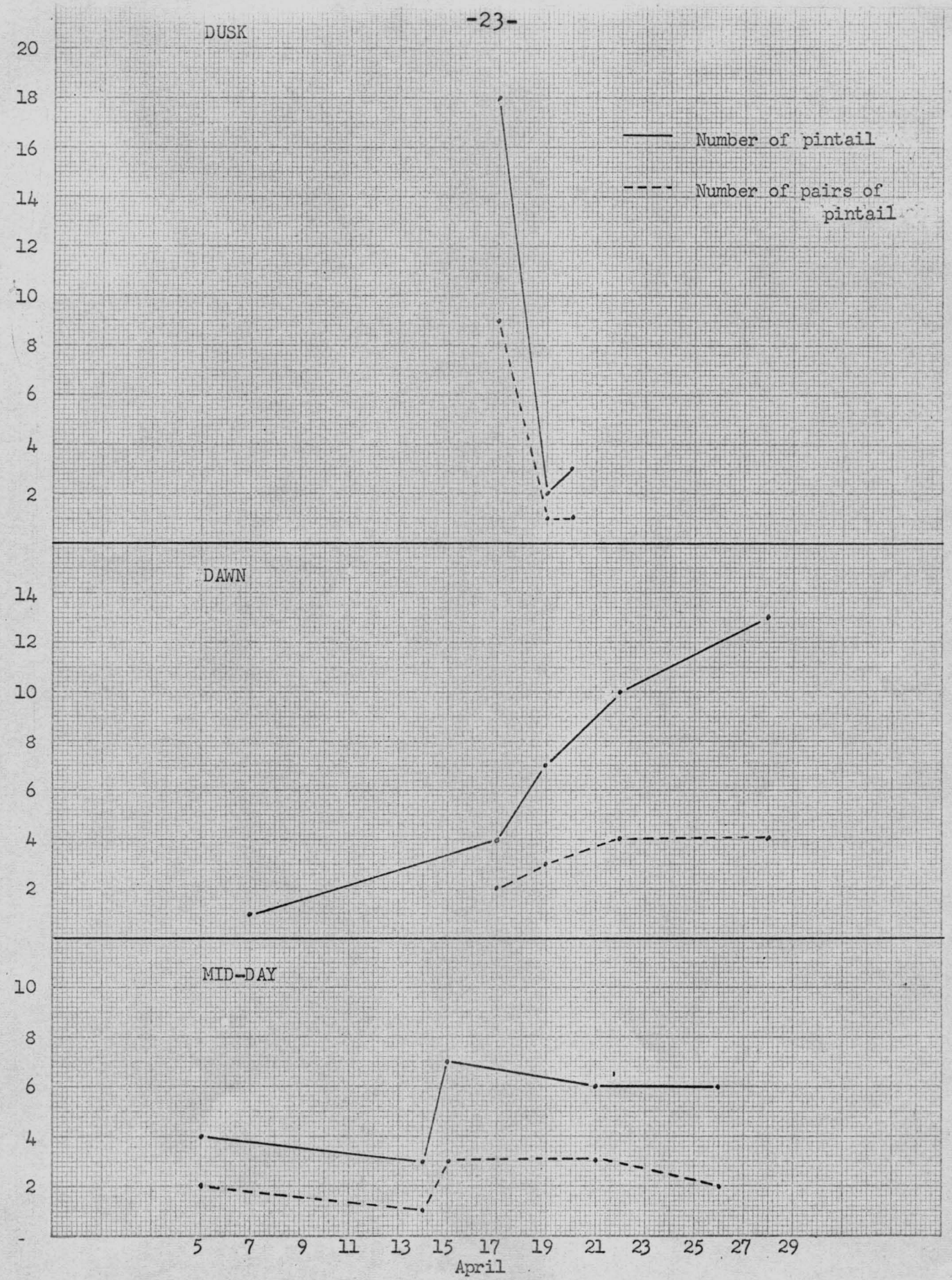


Figure 5. Number of pintail and pairs of pintail observed on the Tintamarre National Wildlife Area. (1) At dawn. (2) Mid-day. (3) Dusk.

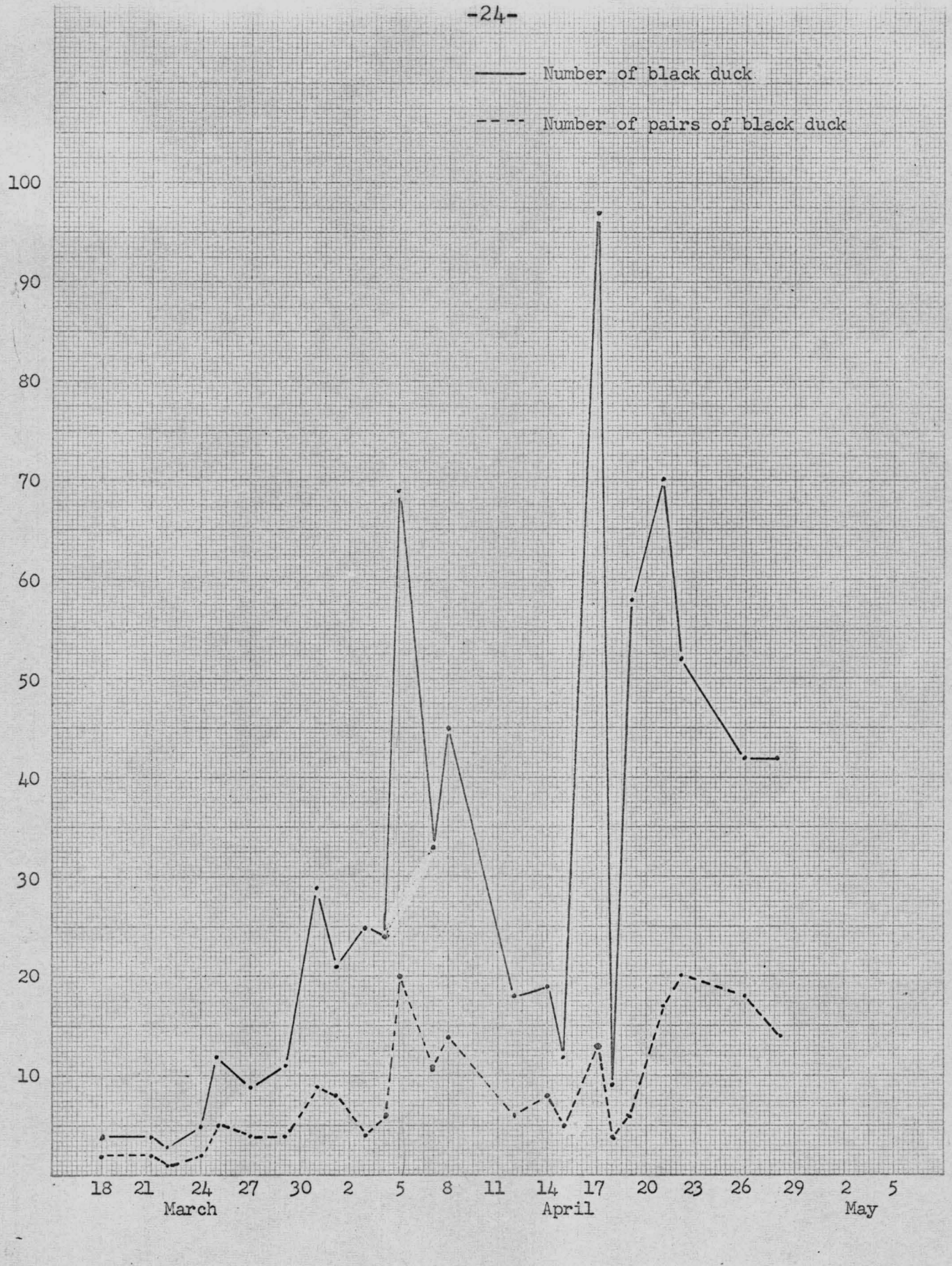


Figure 6. Highest count of black duck on each observation day in the Tintamarre National Wildlife Area

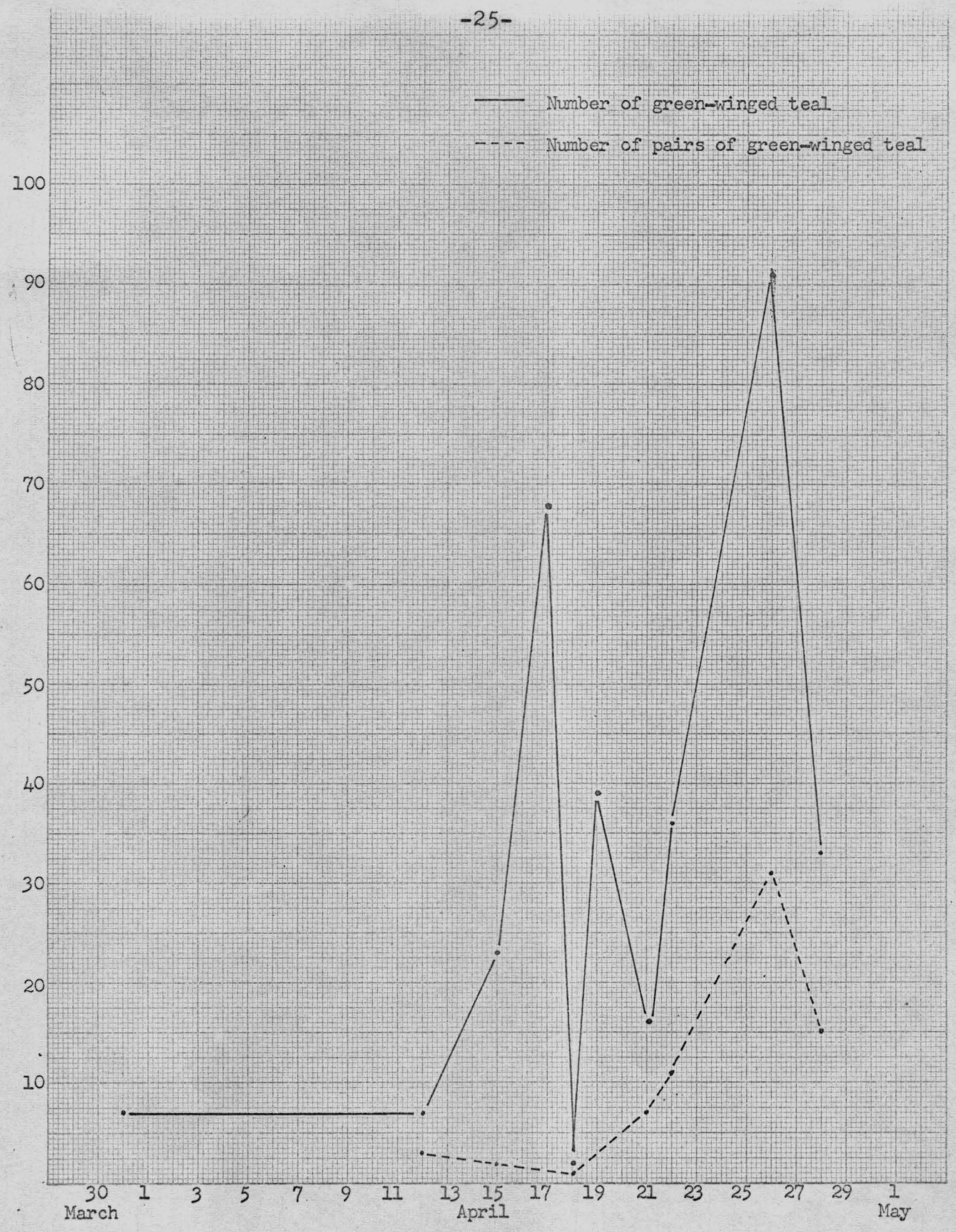


Figure 7. Highest count of green-winged teal on each observation day in Tintamarre National Wildlife Area

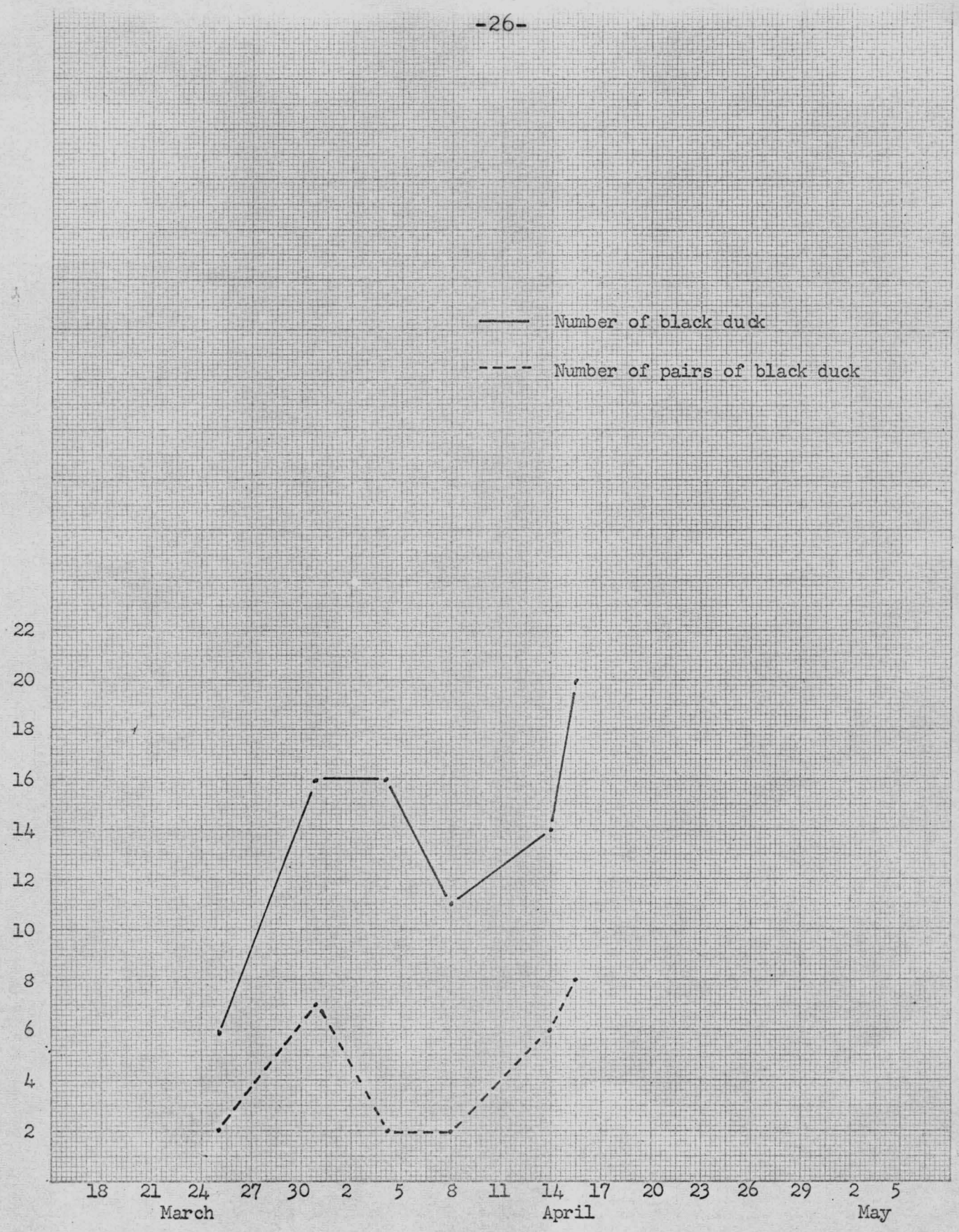


Figure 8. Dawn black duck counts on the Cole's Island-Ram Pasture Area

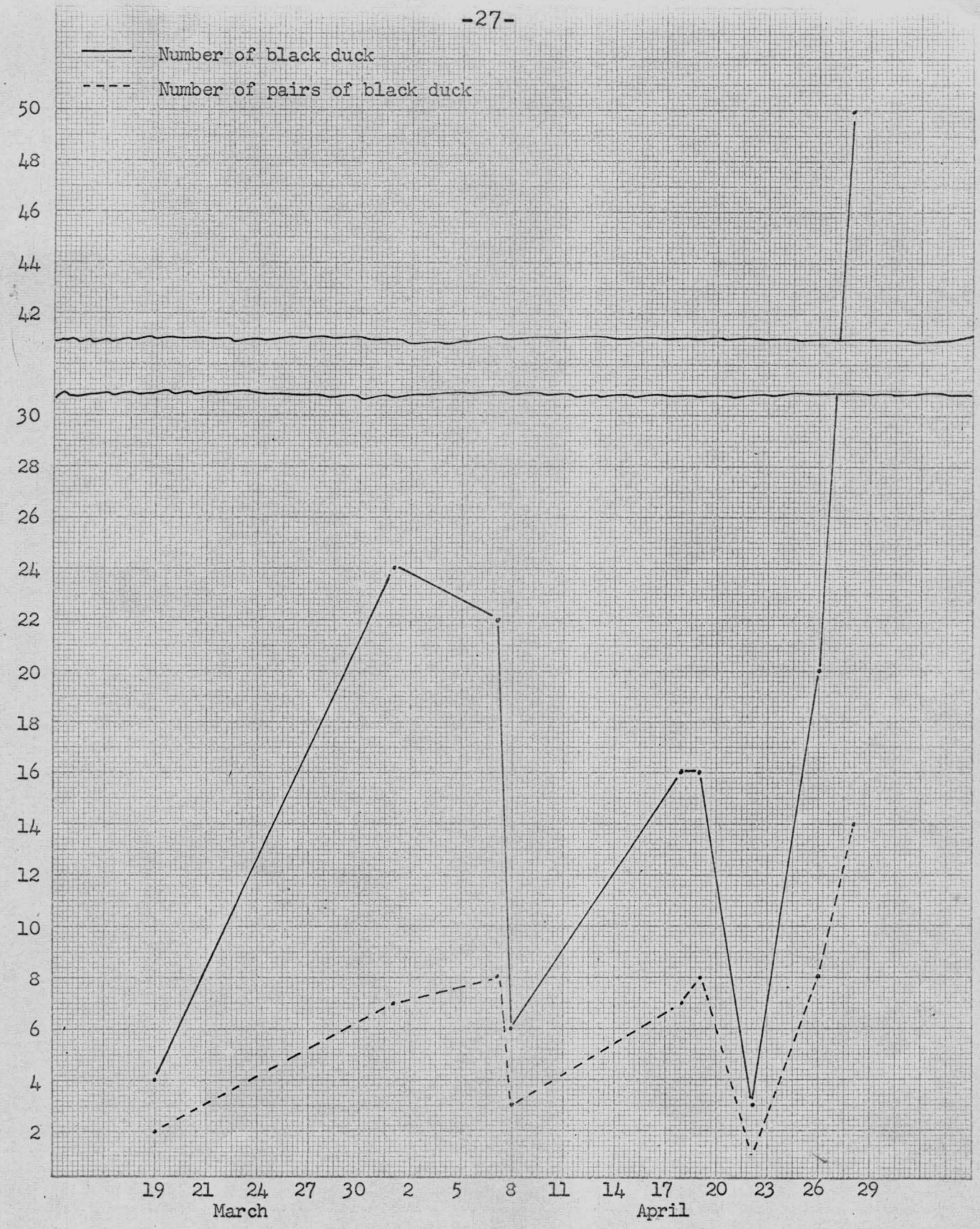


Figure 9. Mid-day black duck counts on the Cole's Island - Ram Pasture Area

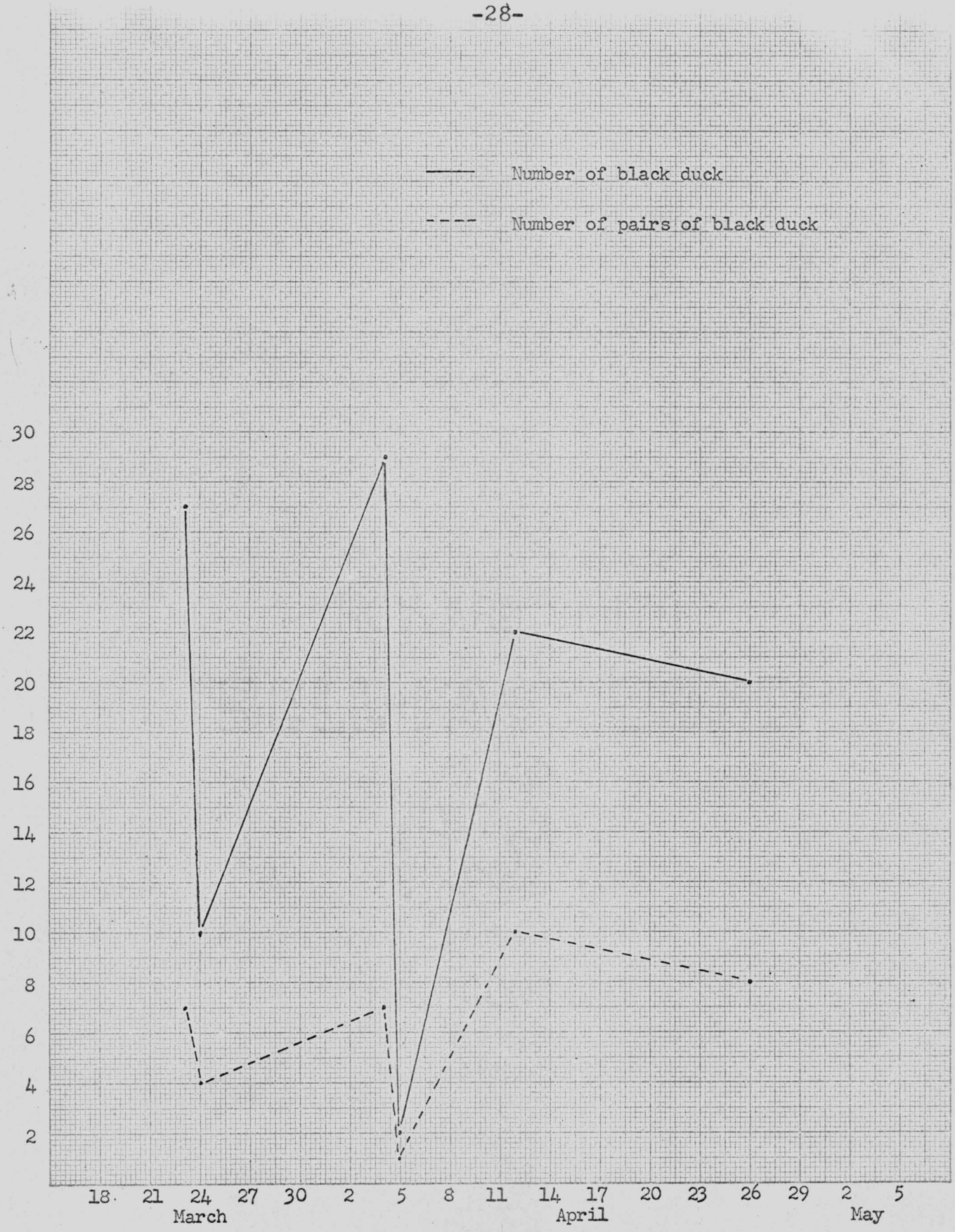


Figure 10. Dusk black duck counts on the Cole's Island - Ram Pasture area

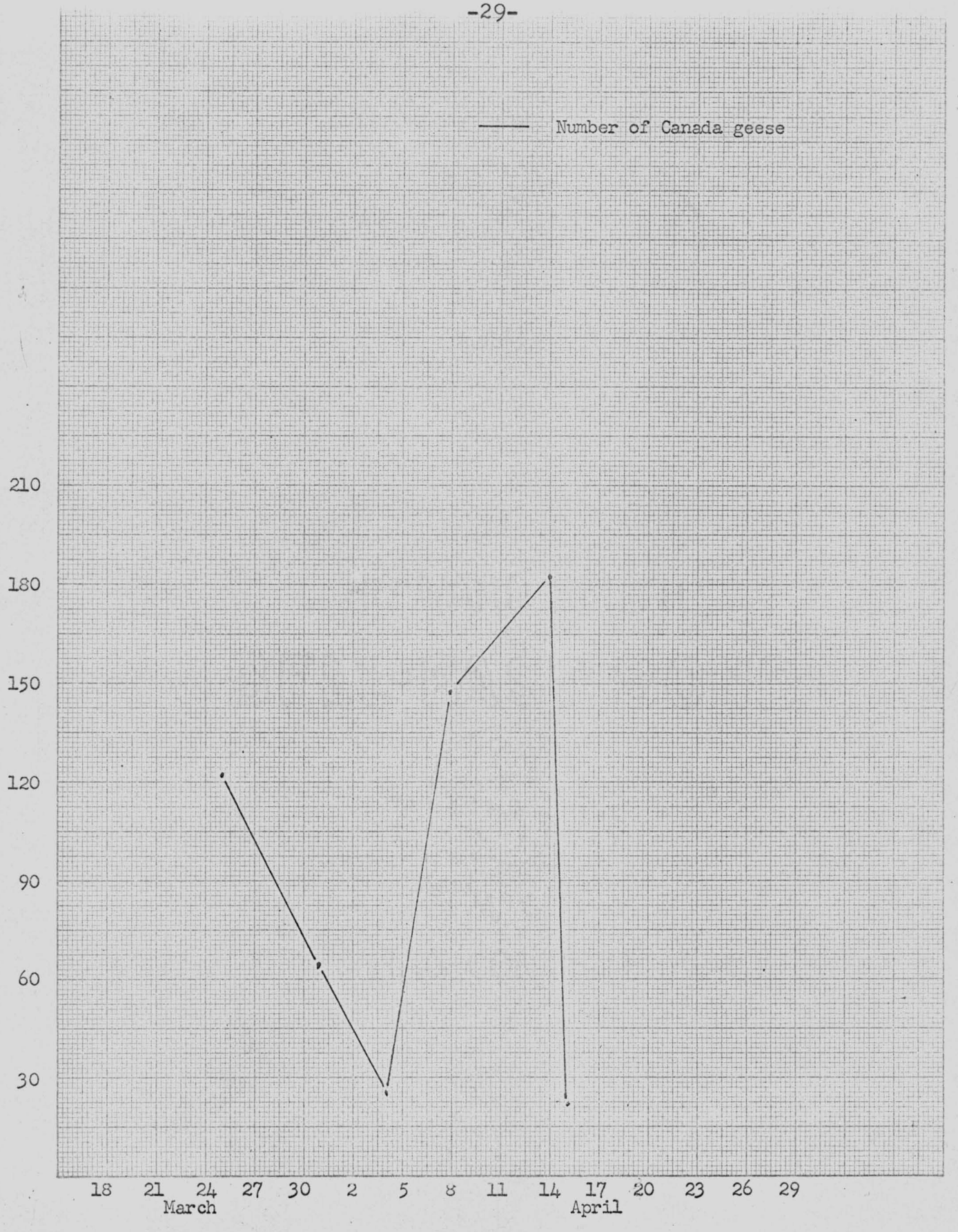


Figure 11. Dawn Canada geese counts on the Cole's Island - Ram Pasture area

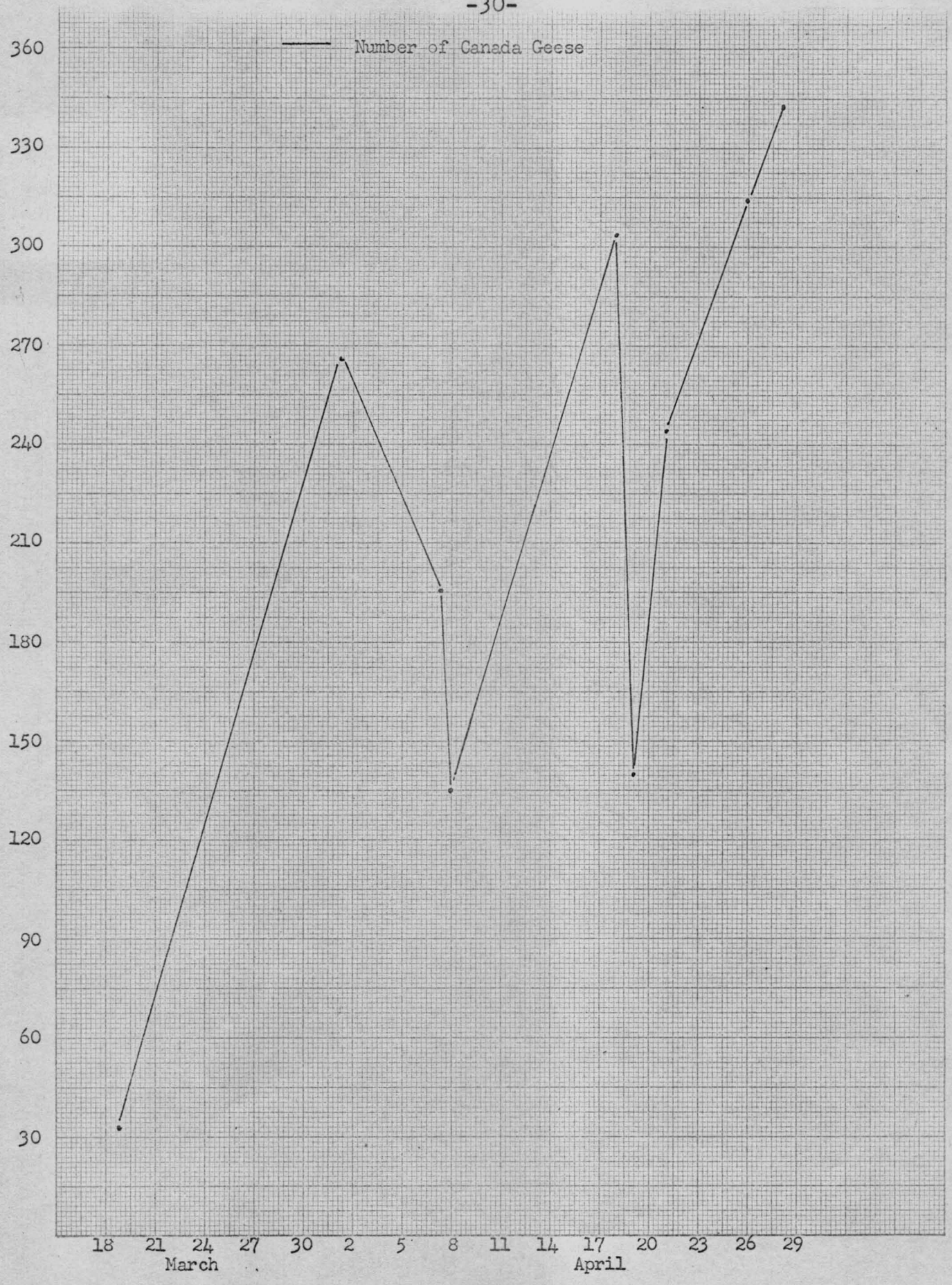


Figure 12. Mid-day Canada geese counts on the Cole's Island - Ram Pasture area

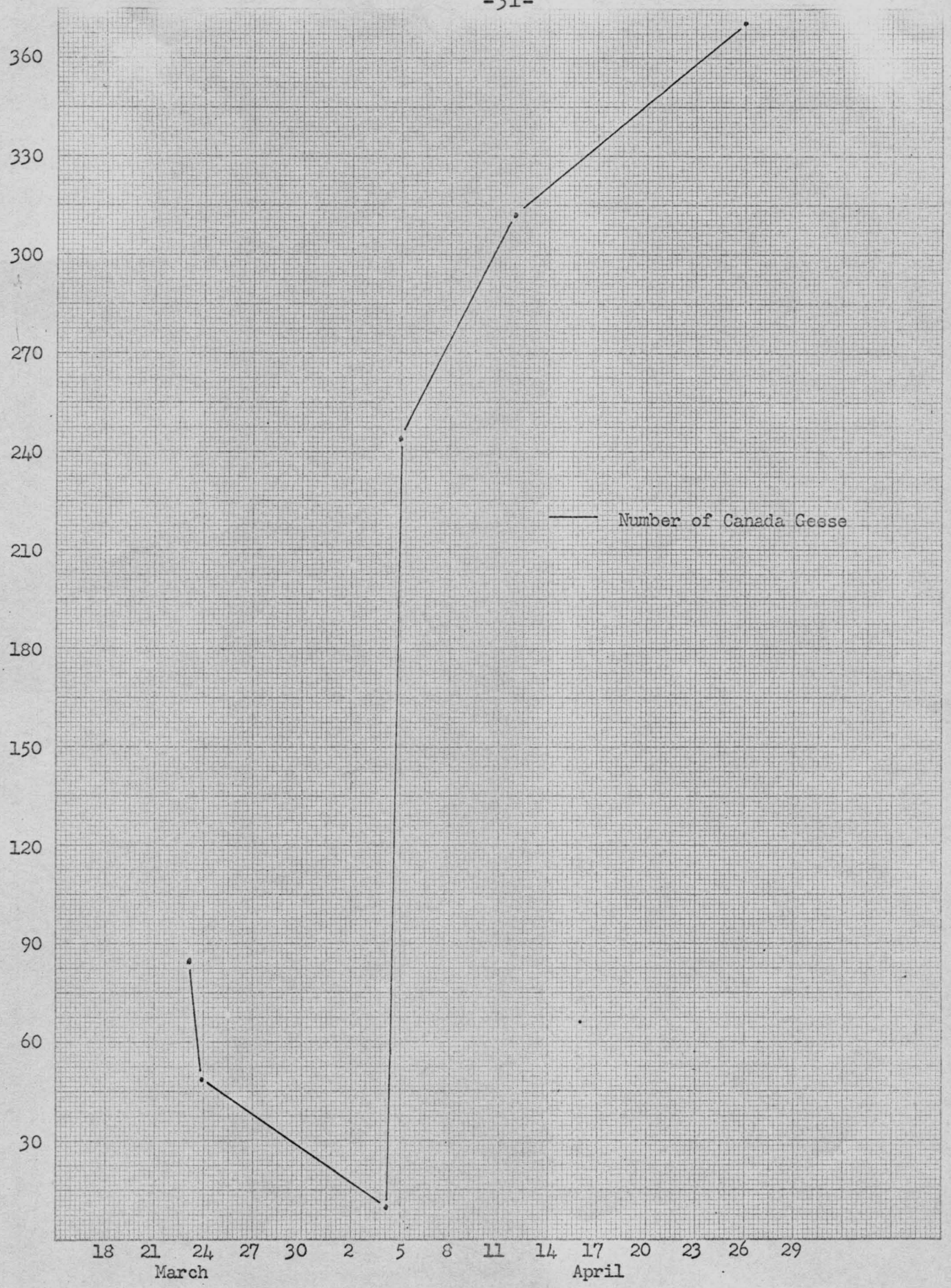


Figure 13. Dusk Canada geese counts on the Cole's Island - Ram Pasture area.

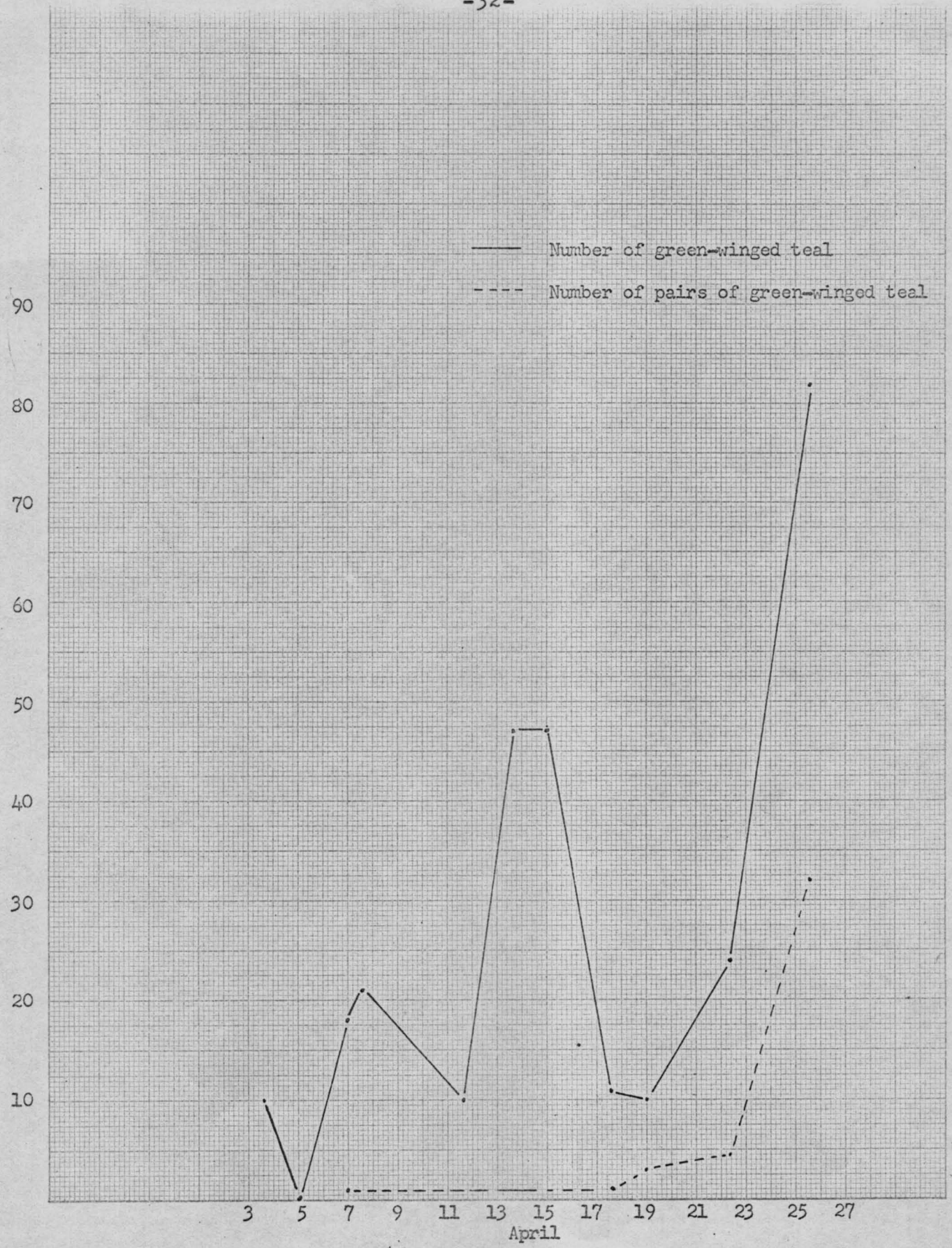


Figure 14. Highest count of green-winged teal on each observation day in the Cole's Island - Ram Pasture area.

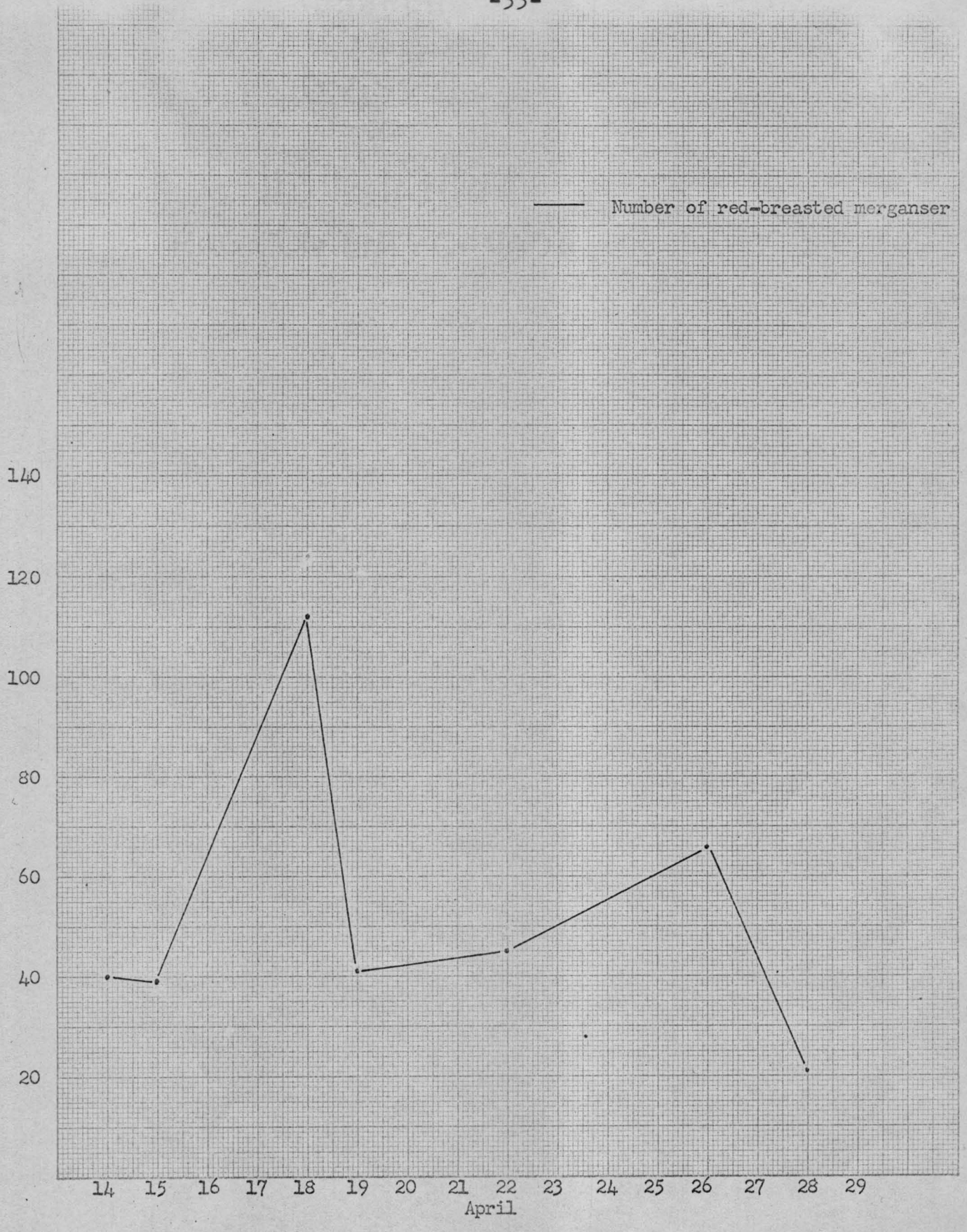


Figure 15. Highest count of red-breasted mergansers on each observation day in Cole's Island - Ram Pasture area

Figure 16. Black duck counts on the Germantown National Wildlife Area from March 26 to April 27

Chronology of Waterfowl Migration

March 18 to May 3, 1971

By

Ross Hall

Area

1. Dave's Lake
2. John Lusby NWA
3. Amherst Point Sanctuary
4. Germantown -- salt marsh and dykeland areas

Dave's Lake

Procedure

Dave's Lake was observed from the bridge and later also at the far end of the lake (Figure 1) when the ice on the lake began to break up. Usually no more than an hour was spent observing the area.

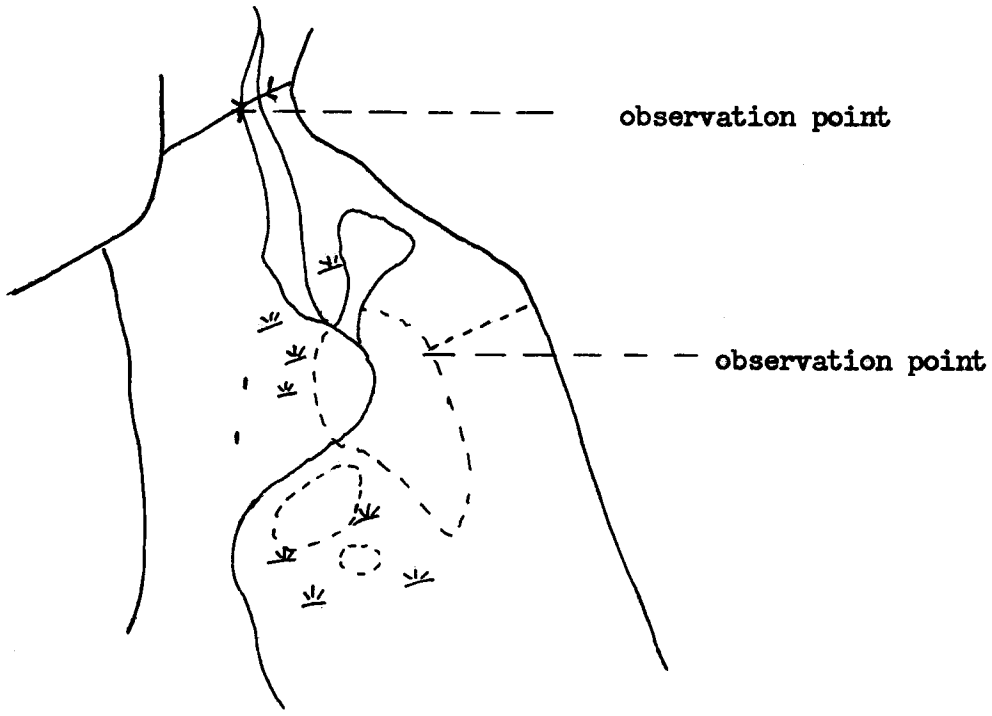


Figure 1. Dave's Lake and points of observation.

Results

Table 1 lists the ice conditions at Dave's Lake and the waterfowl observations. The ice did not begin to break up until April 14. Most ice was gone on April 28. On April 28 one pair of black duck was observed to fly over Dave's Lake.

Discussion

The availability of foods, particularly to dabbling ducks, I expect, was quite low until April 28. On April 21 there was much open water but along the edges and over marsh areas where currents were slower there was still ice.

Table 1. Ice conditions and the number of waterfowl observed at Dave's Lake, 1971

Date	Waterfowl	Ice Conditions
March 24	0	Completely ice covered
March 31	0	Completely ice covered
April 7	0	Snow on ice wet over parts. Small area open water under bridge.
April 14	0	Ice rotten. Two areas of open water where speed of channel faster.
April 21	0	Much open water. Still enough ice to prevent travel by canoe.
April 28	2 black duck (pair)	Ice mostly gone

John Lusby National Wildlife Area

Procedure

The majority of observations were made from two areas: one, the vantage point at the corner of the road near Ken Lusby's farm and, second, at the toe of the upland from the concealment of woods (Figure 1). From the two observation points the entire marsh could be observed. Observations from the woods were often quite close to birds which allowed an accurate count with regard to species, sex, etc.

Results

Table 1 presents the species and numbers of waterfowl that were observed on the different dates.

Figures 2, 3, 4 and 5 are graphs of Canada goose, black duck, pintail, blue-winged teal and green-winged teal numbers against date and day length.

Table 2 gives the number of black duck pairs in relation to total number on different observation dates.

Table 3 is a breakdown of the total number of pintail into pairs and sex.

Table 4 is a breakdown of the total number of green-winged teal into the number of pairs and sexes.

Table 5 compares Canada goose counts in 1971 with those of 1969 and 1970. Tables 6 and 7 does the same for black duck and green-winged teal respectively.

Observations relating to courtship behaviour of black duck, pintail, and green-winged teal are presented in Table 8.

Records of weather are given in Appendix I.

Discussion

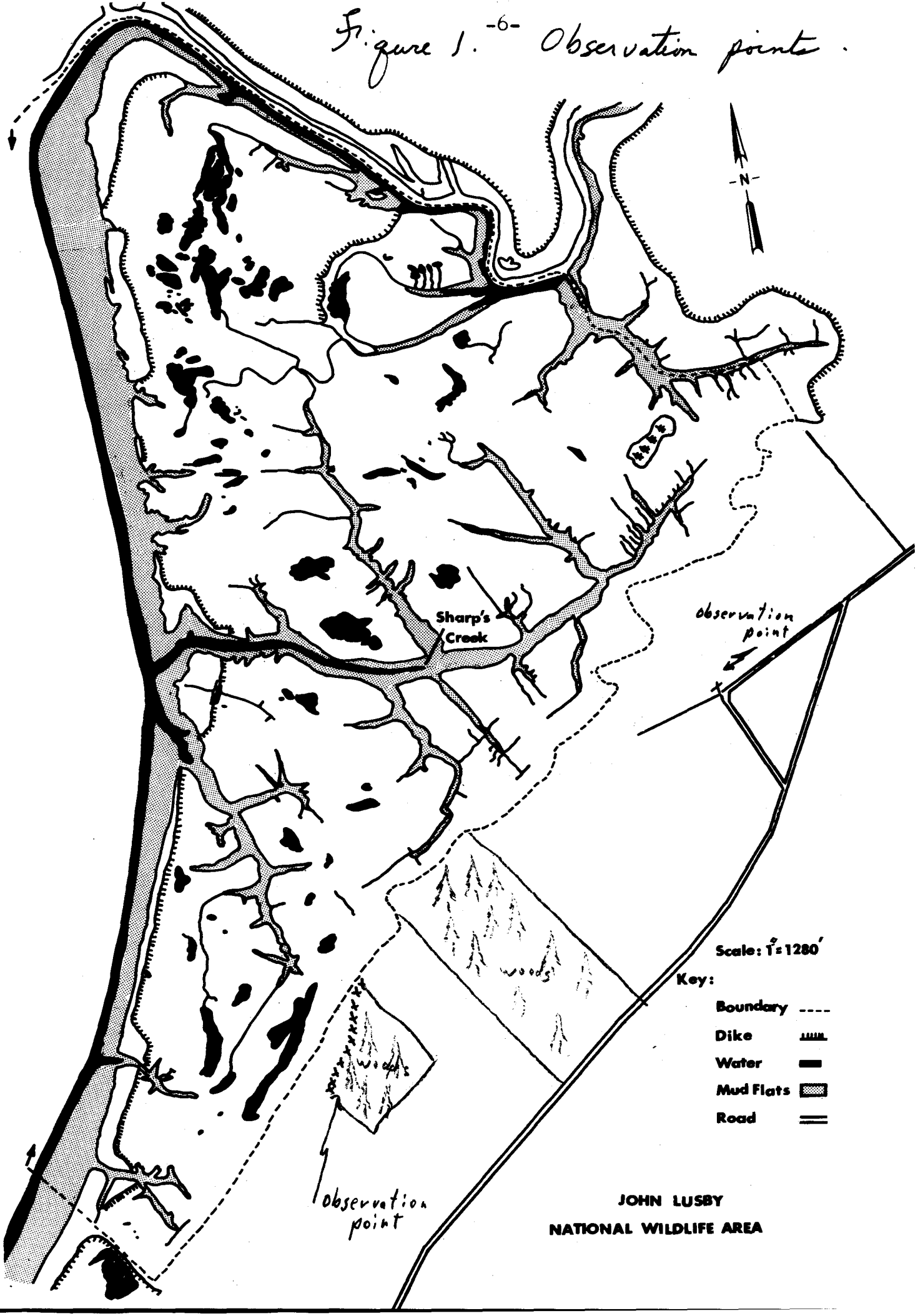
Canada geese reached their highest numbers March 18 to 27 with a high of 3500. After April 1 the number declined to about 1000 or less.

Black duck declined in numbers on the John Lusby April 1 to 5. This was the time that snow was melting on pastures and forming flooded areas. Ice on freshwater ponds and lakes was also beginning to break up. By April 15 water on most inland waterways was open. This corresponded with another decline in black duck numbers on the John Lusby on April 13 to 15.

The number of pintail also declined on the John Lusby after April 1 when freshwater areas became available.

From April 15 to 26 green-winged teal became abundant, reaching 400 in number.

Figure 1. Observation points.



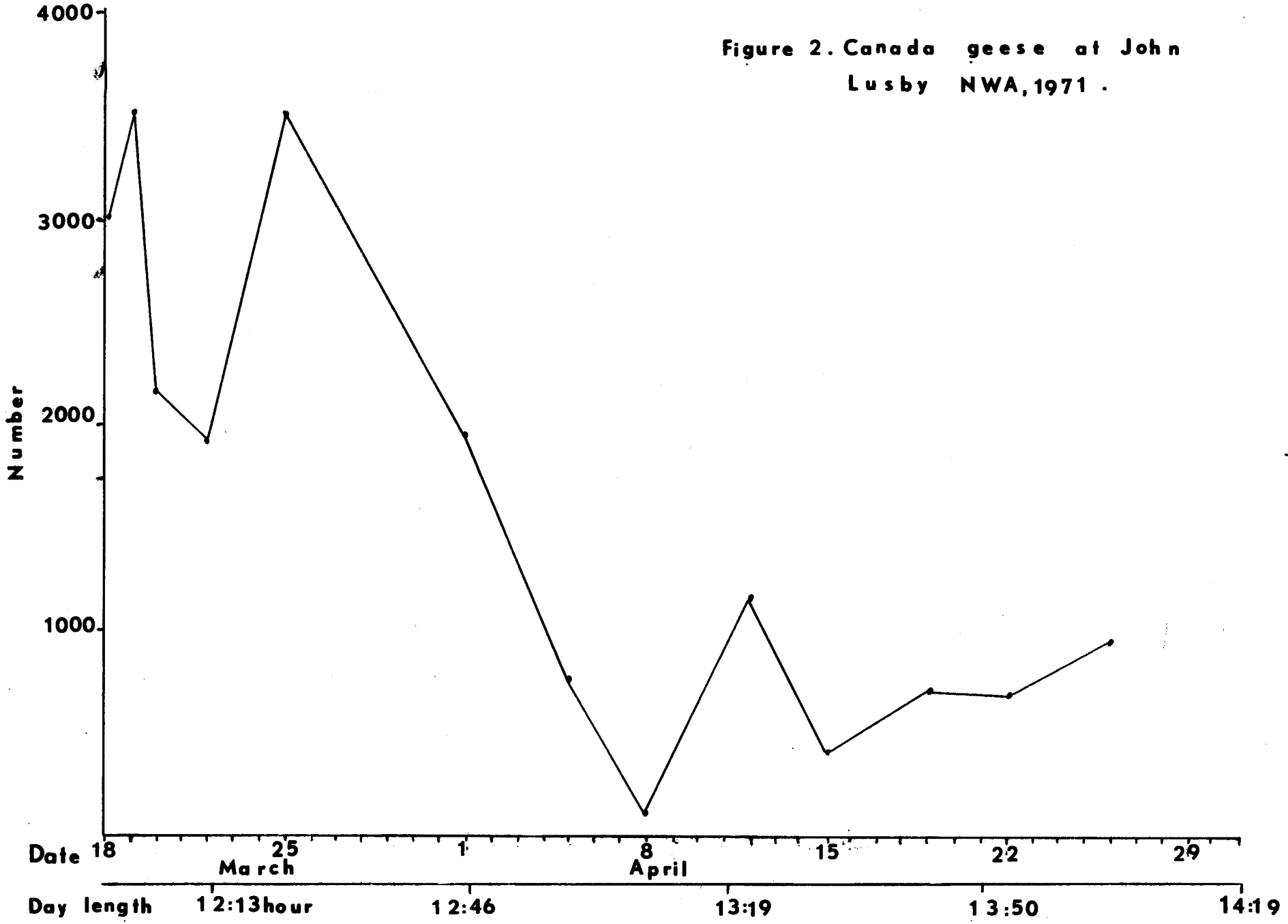


Figure 2. Canada geese at John Lusby NWA, 1971.

Figure 3. Black duck at John Lusby NWA, 1971.

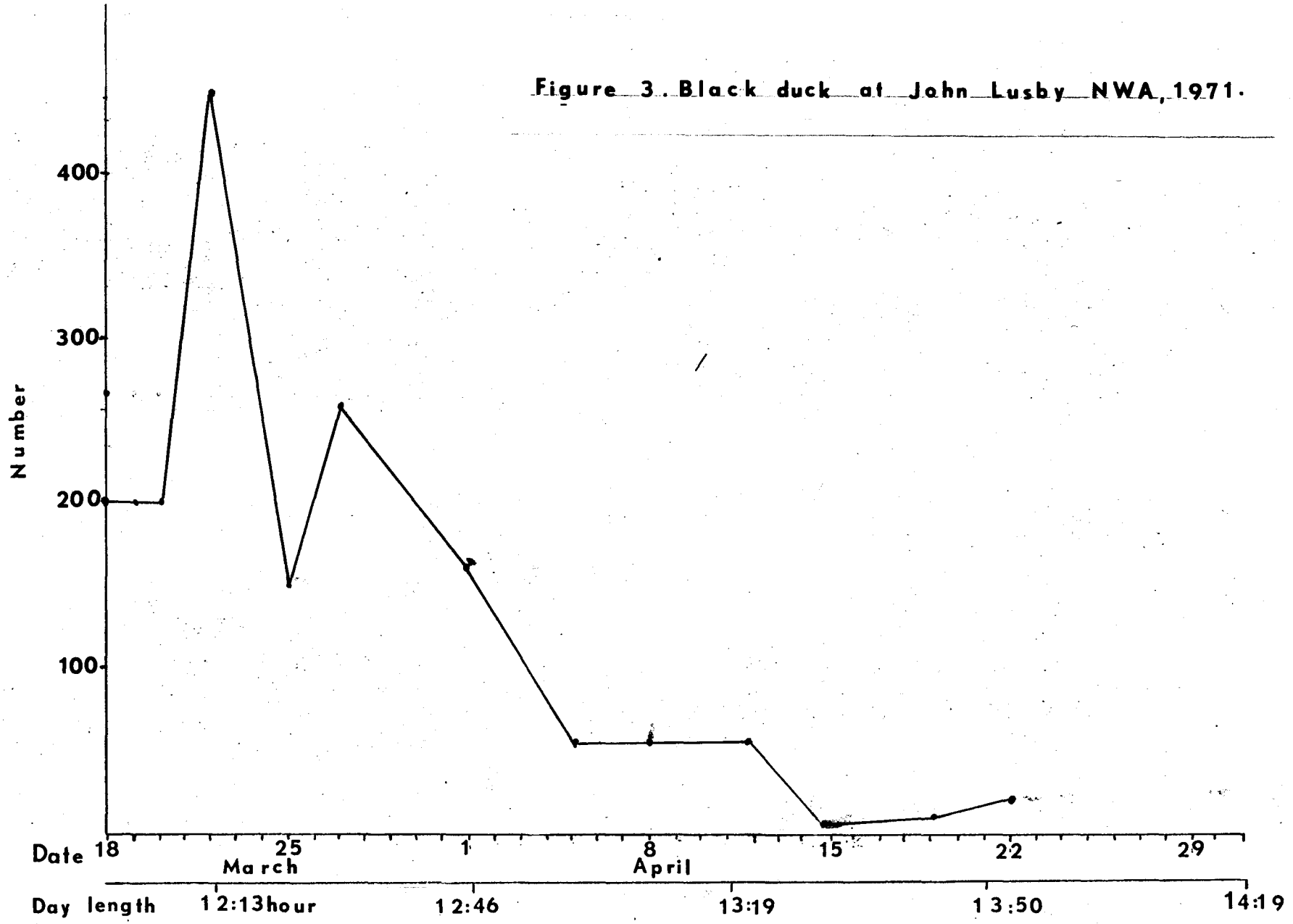


Figure 4. Pintail and blue-winged teal at John Lusby NWA, 1971.

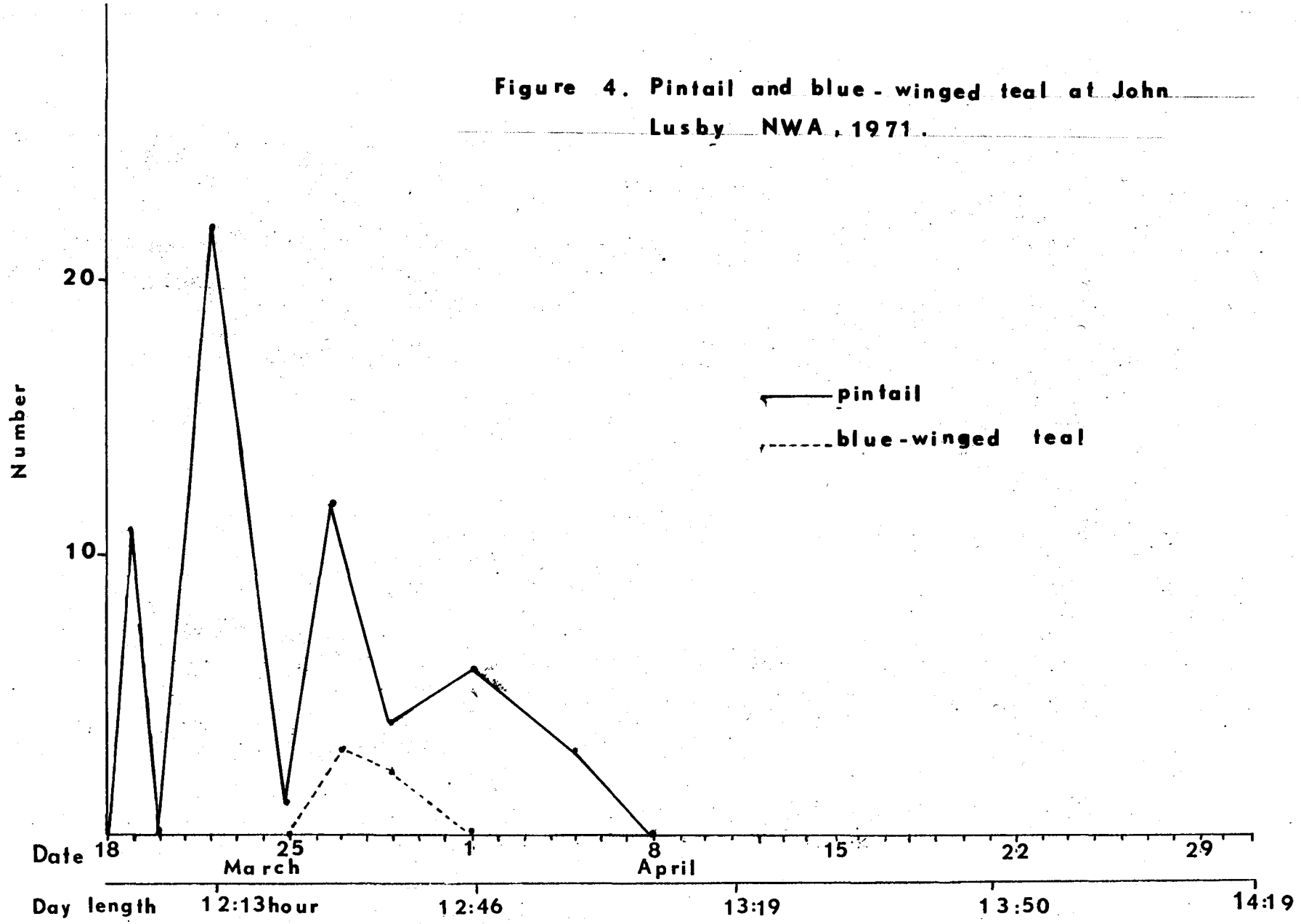


Figure 5. Green-winged teal at John Lusby NWA, 1971.

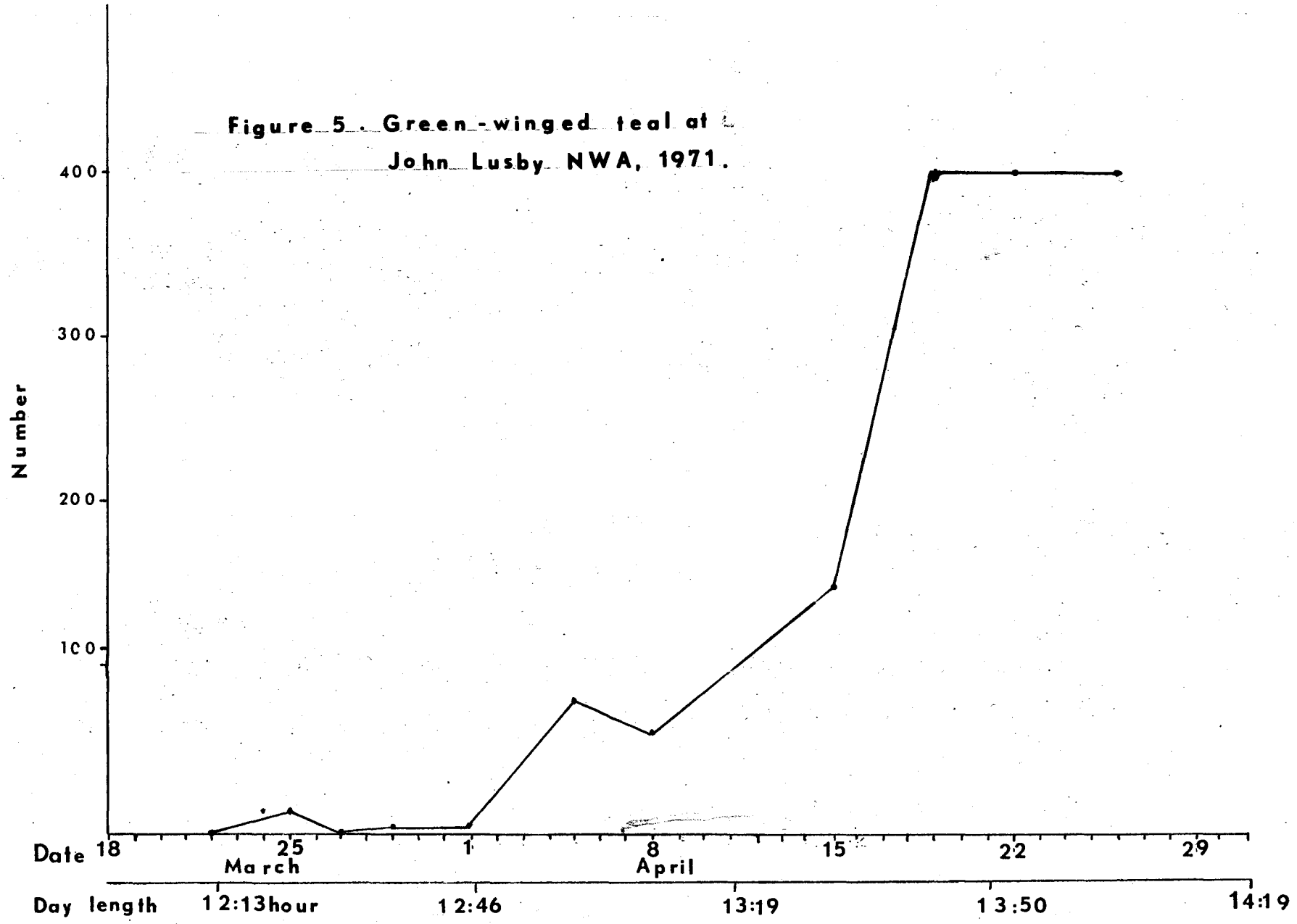


Table 1. Species and numbers of Waterfowl at John Lusby NWA 1971

Species	March 18	19	20	22	25	27	29	April 1	5	8	12	15	19	22	25
Canada goose	3000	3500	2150	1900	3455	2393	--	1930	750	100	1180	410	700	690	950
Black duck	200	200	200	445	150	259	--	160	56	58	56	6	10	18	--
Pintail	0	0	0	22	1	12	4	6	3	0	0	0	0	0	0
Blue-winged teal	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0
Green-winged teal	0	0	0	0	14	0	5	6	80	62	85	150	400	400	400
American Widgeon	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0

Table 2. Total number and number of pair of black duck on each observation date at John Lusby, 1971

Date	Total Number	Number of pair	Percent paired
March 18	200	--	
19	200	--	
20	200	--	
22	445	--	
25	150	53	70
27	259	49	37
29	--	--	
April 1	160	38	47
5	56	18	64
8	58	20	68
12	56	16	57
15	6	3	100
19	10	2	40
22	18	6	40
26	--	--	

Table 3. Total number, number of pair and sex of pintail on each observation date at the John Lusby, 1971

Date	Total Number	Number of pair	Male	Female
March 18	0			
19	11	0	10	1
20	0			
22	22	2	19	3
25	1	0	1	0
27	12	5	7	5
29	4	2	2	2
April 1	6	2	4	2
5	3	0	3	0
8	0			
12	0			
15	0			
19	0			
22	0			
26	0			

Table 4. Total number, number of pair and sex of green-winged teal on each observation date at the John Lusby, 1971

Date	Total Number	Number of pair	Male	Female
March 18				
19				
20				
22				
25	14	1	11	3
27				
29	5	0	5	0
April 1	6	0	5	1
5	80	10	--	--
8	62	8	--	--
12	85	--	45	40
15	150	--	--	--
19	400	--	--	--
22	400	190	200	200
26	400	--	--	---

Table 5. Comparison of 1969, 1970 and 1971 Canada goose counts at the John Lusby

Date	Number		
	1969*	1970*	1971
March 12	--	26	--
13	--	35	--
17	--	40	--
18	0	51	3000
19	--	--	3500
20	--	--	2150
21	300	--	--
22	455	--	1900
23	--	691**	--
24	800	--	--
25	--	2200	3455
26	--	3500	--
27	--	--	2392
28	1500**	4067	--
29	1500	--	--
30	--	2410	--
31	--	4430**	--
April 1	--	1647	1930
4	1200	--	--
5	2200	1094	750
6	--	1630**	--
8	--	1440	100
9	1879**	--	--
10	--	1490	--
12	--	--	1180
13	--	1115**	--
15	--	--	410
16	585**	--	--
19	--	--	700
20	--	1062**	--
21	500	--	--
22	1000	--	690

Table 5. Comparison of 1969, 1970 and 1971 Canada goose counts at the John Lusby (continued)

Date	Number		
	1969*	1970*	1971
April 23	655	--	--
24	1300**	--	--
25	1100	--	--
26	--	--	950
28	1313	707**	--
29	755	614	--
30	801	--	--

* Van Zoost

** Aerial Count

Table 6. Comparison of 1969, 1970 and 1971 black duck counts at John Lusby

Date	Number		
	1969*	1970*	1971
March 12	--	--	--
13	--	51	--
17	--	--	--
18	--	45	200
19	--	--	200
20	--	--	200
21	50	--	--
22	150	--	455
23	--	418**	--
24	500	--	--
25	--	--	150
26	--	500	--
27	--	--	259
28	--	600	--
29	--	--	--
30	--	--	--
31	--	290**	--
April 1	--	--	160
4	--	--	--
5	50	--	56
6	--	36**	--
8	--	--	58
9	150	--	--
10	--	--	--
12	--	--	56
13	--	336**	--
15	--	--	6
16	42**	--	--
19	--	--	10
20	--	203**	--
21	30	--	--
22	35	--	18
23	9	--	--

Table 6. Comparison of 1969, 1970 and 1971 black duck counts at John Lusby (continued)

Date	Number		
	1969*	1970*	1971
April 24	22**	--	--
25	20	--	--
26	--	--	--
28	20	49**	--
29	4	--	--
30	4	--	--

* Van Zoost

** Aerial count

Table 7. Comparison of 1969, 1970 and 1971 green-winged teal counts at John Lusby

Date	Number		
	1969*	1970*	1971
March 12	--	--	--
13	--	--	--
17	--	--	--
18	--	--	0
19	--	--	0
20	--	--	0
21	--	--	--
22	--	--	0
23	--	0**	--
24	--	--	--
25	--	--	14
26	--	--	--
27	--	--	0
28	--	--	--
29	--	--	5
30	--	--	--
31	--	56**	--
April 1	--	--	6
4	--	--	--
5	--	--	80
6	--	20**	--
8	--	--	62
9	--	--	--
10	--	--	--
12	--	--	85
13	--	27**	--
15	--	--	150
16	15**	--	--
19	--	--	400
20	--	60**	--
21	--	--	--
22	--	--	400

Table 7. Comparison of 1969, 1970 and 1971 green-winged teal counts at John Lusby (continued)

Date	Number		
	1969*	1970*	1971
April 23	15	--	--
24	236**	--	--
25	92	--	--
26	--	--	--
28	96	0**	400
29	8	--	--
30	18	--	--

* Van Zoost

** Aerial Count

Table 8. Observations of courtship behaviour of black duck, pintail and green-winged teal at John Lusby NWA

Date	Observation
BLACK DUCK	
March 18 to 22	Flocks of black duck varying in size from 30 to 200. The birds in the flocks did not appear paired. Several pairs separated or in small groups apart from flocks.
March 23	In a group of 3 pairs one bird was twice observed to "thrust" or give a short chase to another bird.
March 27	Courtship behaviour in a group of 14 and a group of 10 birds. The birds were swimming as a group on a salt pan or occasionally briskly walking together as a group when on land. Heads were often held high (neck stretch). "Wing flaps" were frequent. "Bill dip", "sneaks" and "thrusts" were common. One group performed this behaviour for about 15 minutes and began feeding. The other group continued throughout the observation period which was 2½ hours.
April 1	A pair was closely followed by 9 males (bill colour evident). There was an occasional "bill dip", "sneak" and "neck stretch". This behaviour lasted 10 minutes and then the unmated males began to feed.
April 8	Observed a group of 14 birds for several minutes. Behaviour was mostly feeding. "Wing flaps" and "thrusts" were common.
PINTAILS	
March 22	19 male and 3 female pintail on a salt pan. Two pairs somewhat separated at edge of salt pan. Males constantly performing "head throws" and giving a peeping note. One female amongst 17 courting males.

Table 8. Observations of courtship behaviour of black duck, pintail and green-winged teal at John Lusby NWA (continued)

Date	Observation
GREEN-WINGED TEAL	
April 1	13 male, 2 female on a salt pan. One female appeared paired. Birds gave loud peeping notes. "Wing flaps" were common. "Thrusts" were common. An apparently mated male twice "thrust" at other males but for the most part seemed tolerant of them.
April 5	70-100 birds on or about salt pans. Loud peeping noise and, "thrusts" were prevalent.
April 12	70-100 birds on or about salt pans. There appeared to be a 1:1 ratio males to females and most birds appeared paired. "Pairs" however were close together. Peeping notes and quacking were constantly heard. "Bill-to-chest and tail rise" were frequently done. Areas of courtship in the flock seemed to be a mosaic with "hot spots" and other areas where birds fed.
April 22	400 birds. Ratio ♂ to ♀ about 1:1 and most appeared paired. A lone male or a lone female were infrequently scattered amongst the pairs. Sun came out briefly at 9:15 and courtship activity increased. "Peeping", "quacking", short chases (thrusts) "bill-to-chest and tail lift" evident. When pairs approached too closely it appeared that females began to "incite". Agonistic behaviour by the male then followed.

Amherst Point Sanctuary

Procedure

No fixed route was followed at Amherst Point. As ice left areas of water, vantage points were chosen which best allowed observation of waterfowl and a minimum of disturbance to waterfowl.

The cat-tail marsh area along the railroad tracks was not examined as frequently as the main pond area. In addition to the pond area, observation along the tracks were made on March 24, April 7 and April 14.

Bottom samples were collected from areas where birds had been observed feeding. The samples were appropriately labelled and placed in the CWS freezer. On April 8 a bottom sample, including many floating seeds, was collected at a flooded area where blackduck, pintail, and teal had previously been observed. On April 15, bottom samples were taken from an area where 40 black duck had been observed loafing and feeding and a sample was taken from an area where about 30 green-winged teal had been observed feeding. The black duck sample was in the cat-tail marsh area amongst sedges and cat-tail. The green-winged teal sample was along the edge of a flooded area where pond weeds, submerged grass, duckweed (Lemna) were evident. A fourth sample was collected on May 3 from the

edge of one of the main ponds near the bridge. The sample included aquatic plants and amphipods. Ring-necked duck mallard, shoveler, teal, and black duck were observed feeding in this pond.

Results

Table 1 lists species and numbers of waterfowl observed at Amherst Point on different dates.

Figures 1 to 7 graph numbers of black duck, pintail, green-winged teal, blue-winged teal, goldeneye, widgeon, and ring-necked duck respectively against date and day length.

Tables 2 to 8 list the sex, number of pair and total number of black duck, pintail, green-winged teal, blue-winged teal, goldeneye, widgeon and ring-necked duck respectively on different observation dates.

Table 9 presents observation of courtship and nesting behaviour.

Table 10 describes the ice conditions at Amherst Point.

Appendix I presents weather records.

Discussion

On April 5 the ice left the cat-tail marsh area at Amherst Point. This left a flooded area of at least

one square mile. On this date there was a great influx of waterfowl. Seeds were very abundant on the surface of the water and appeared to be the main food that the waterfowl were eating. There was little or no green vegetation.

The second major event occurred about April 19 when the ice left the ponds at Amherst Point. The number of waterfowl (black duck and green-winged teal in particular) decreased on the flooded cat-tail marsh area. Ring-necked duck and other waterfowl then began to utilize the ponds. On April 26 and May 3, thirteen different waterfowl species were observed on the ponds. The water level on the flooded cat-tail marsh area dropped about two feet but still much water remained. By April 26 vegetation over the flooded cat-tail marsh area was taking on a green colour.

A number of successive observations of a pair of black duck suggested that they were at some stage of nesting in the vicinity of the ponds. Perhaps other pairs were nesting at the far end of the cat-tail marsh area but they were not observed.

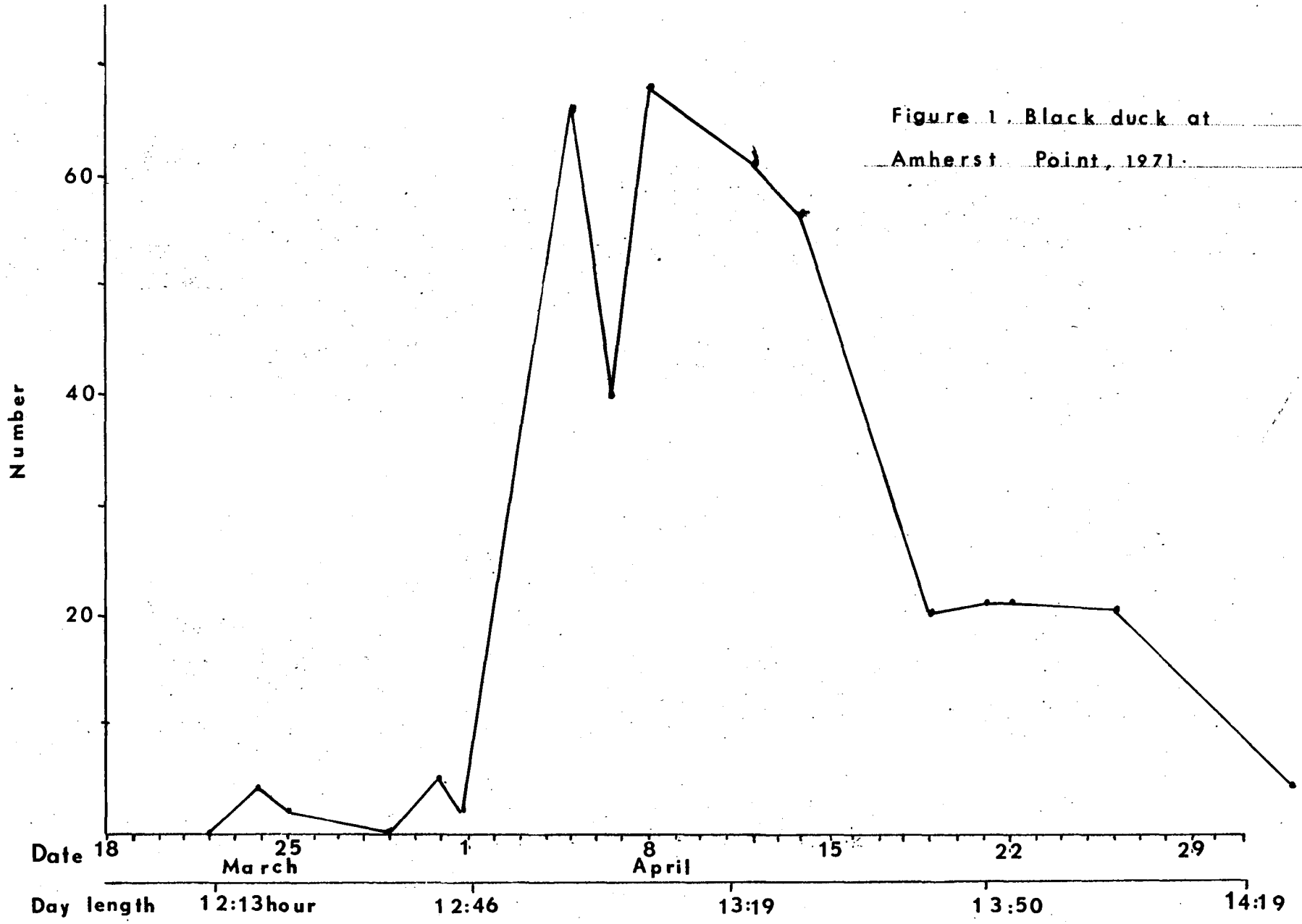


Figure 1. Black duck at Amherst Point, 1971.

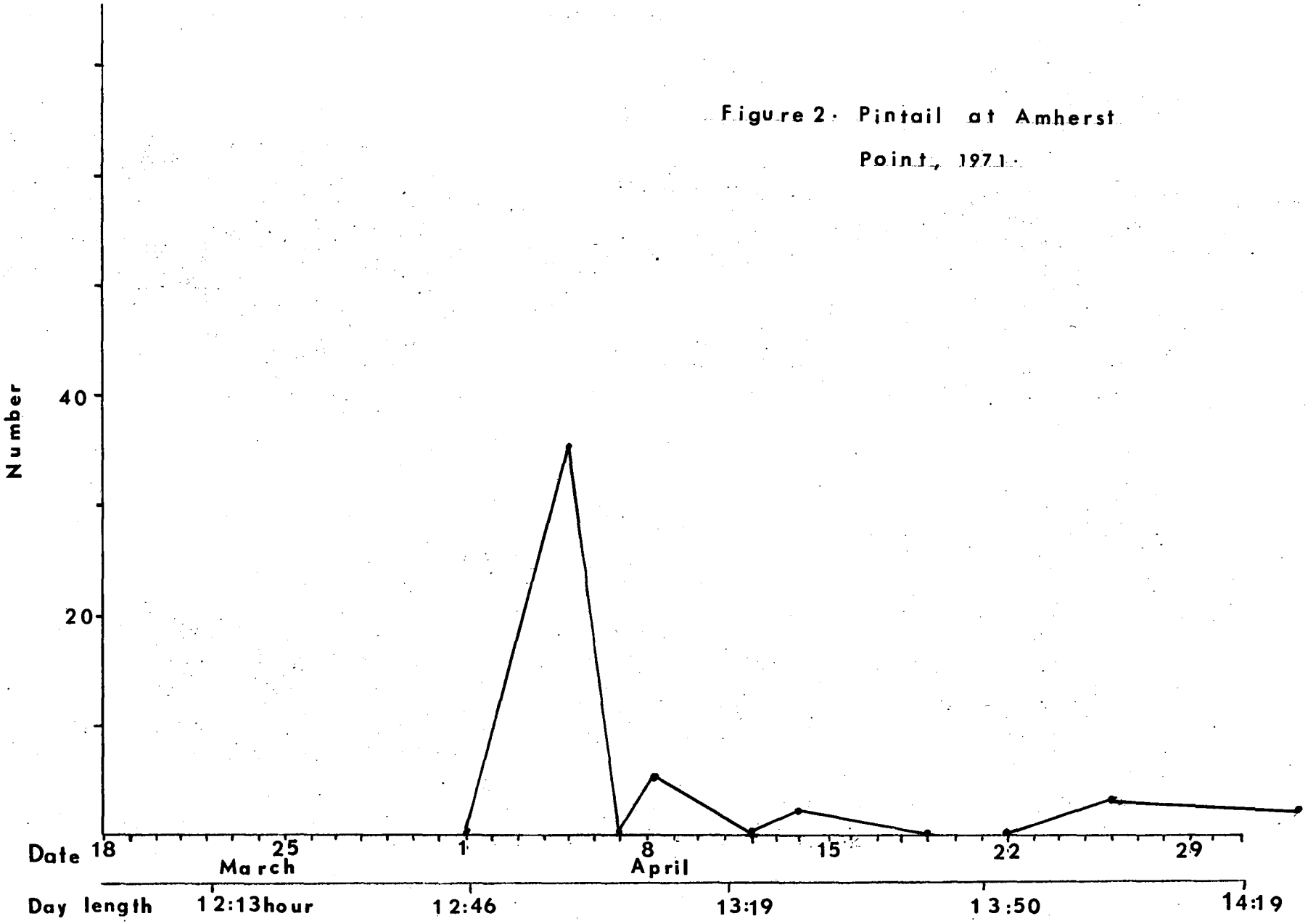


Figure 2. Pintail at Amherst Point, 1971.

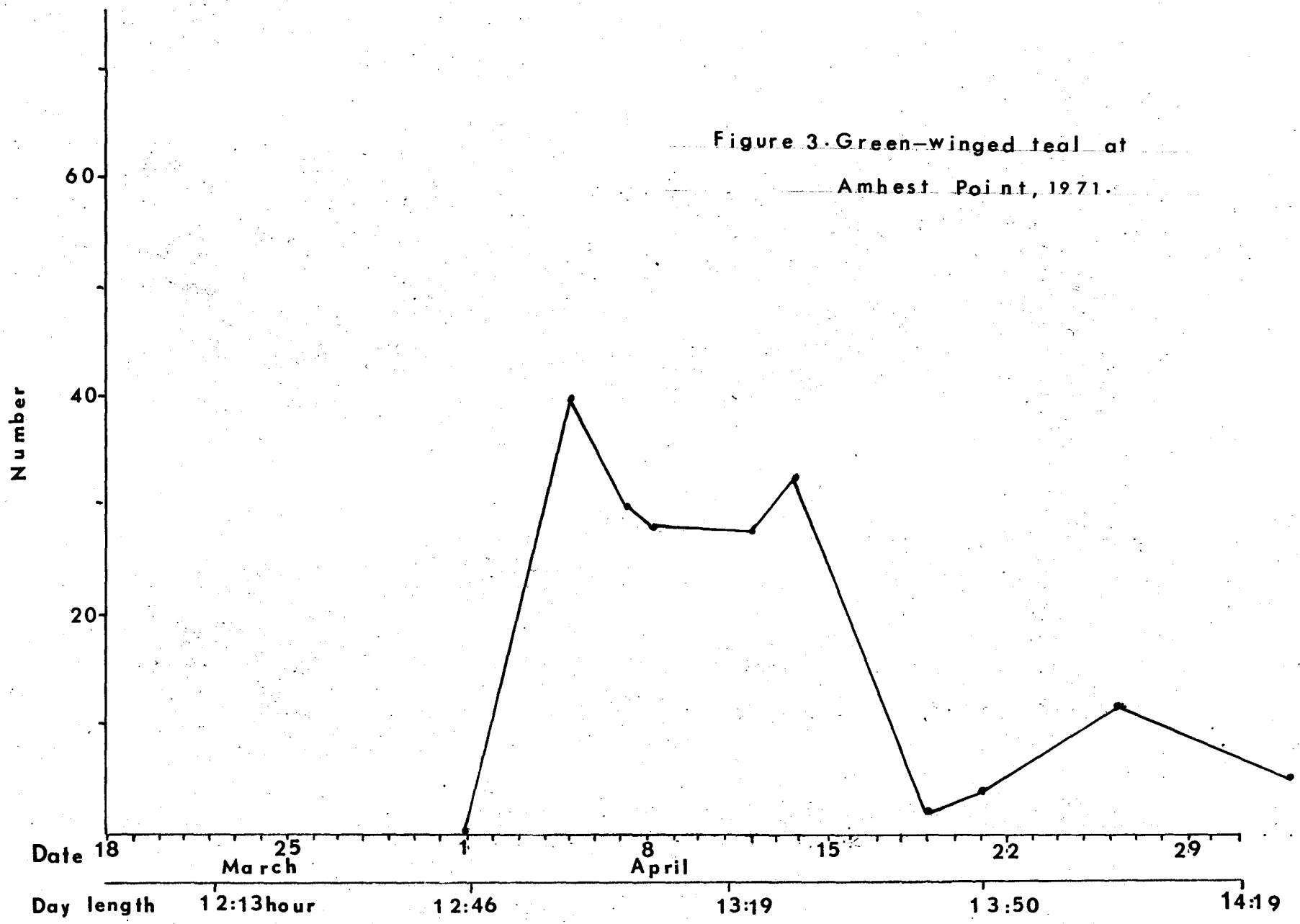


Figure 3. Green-winged teal at Amhest Point, 1971.

Figure 4. Blue-winged teal at Amherst Point, 1971.

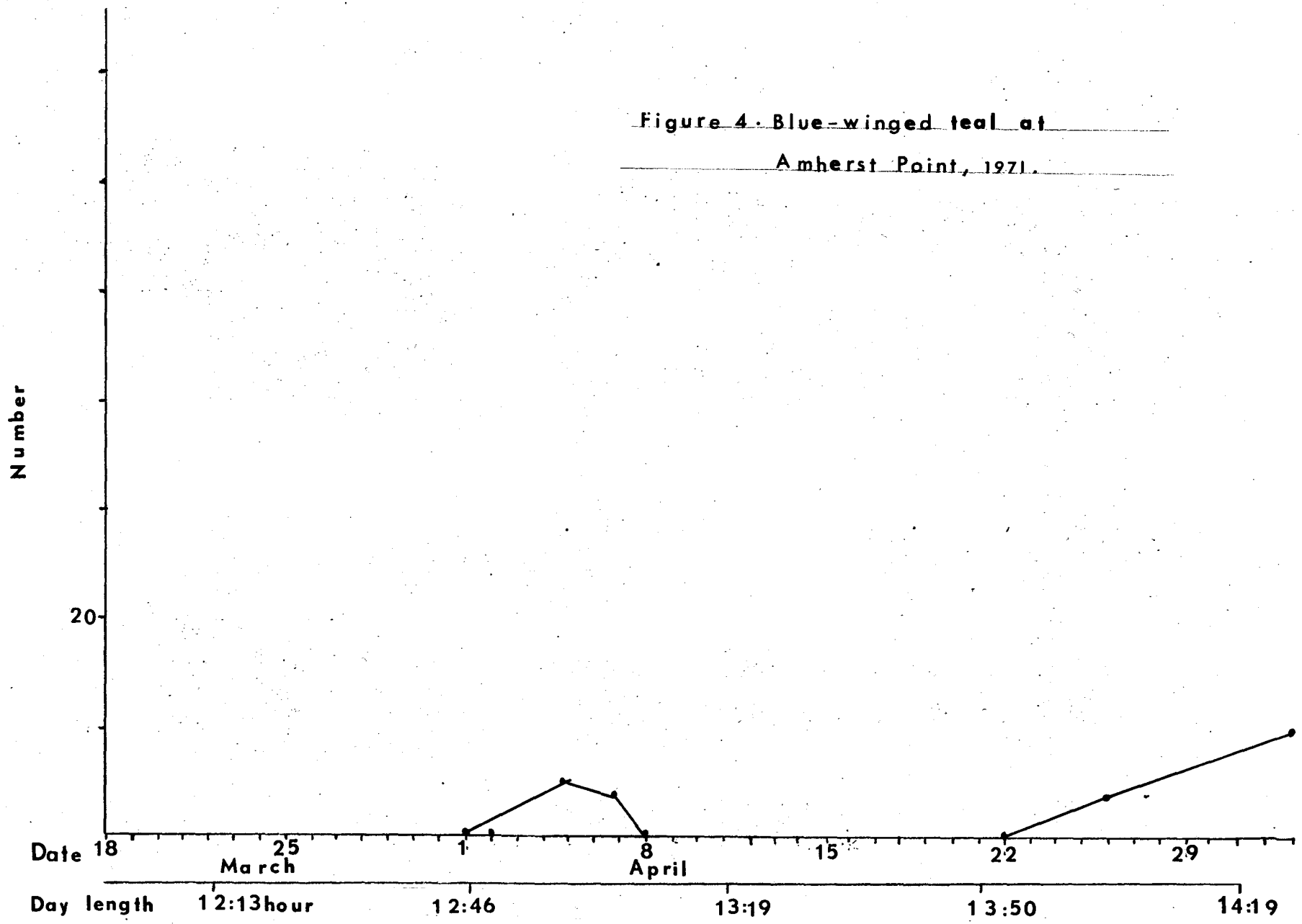
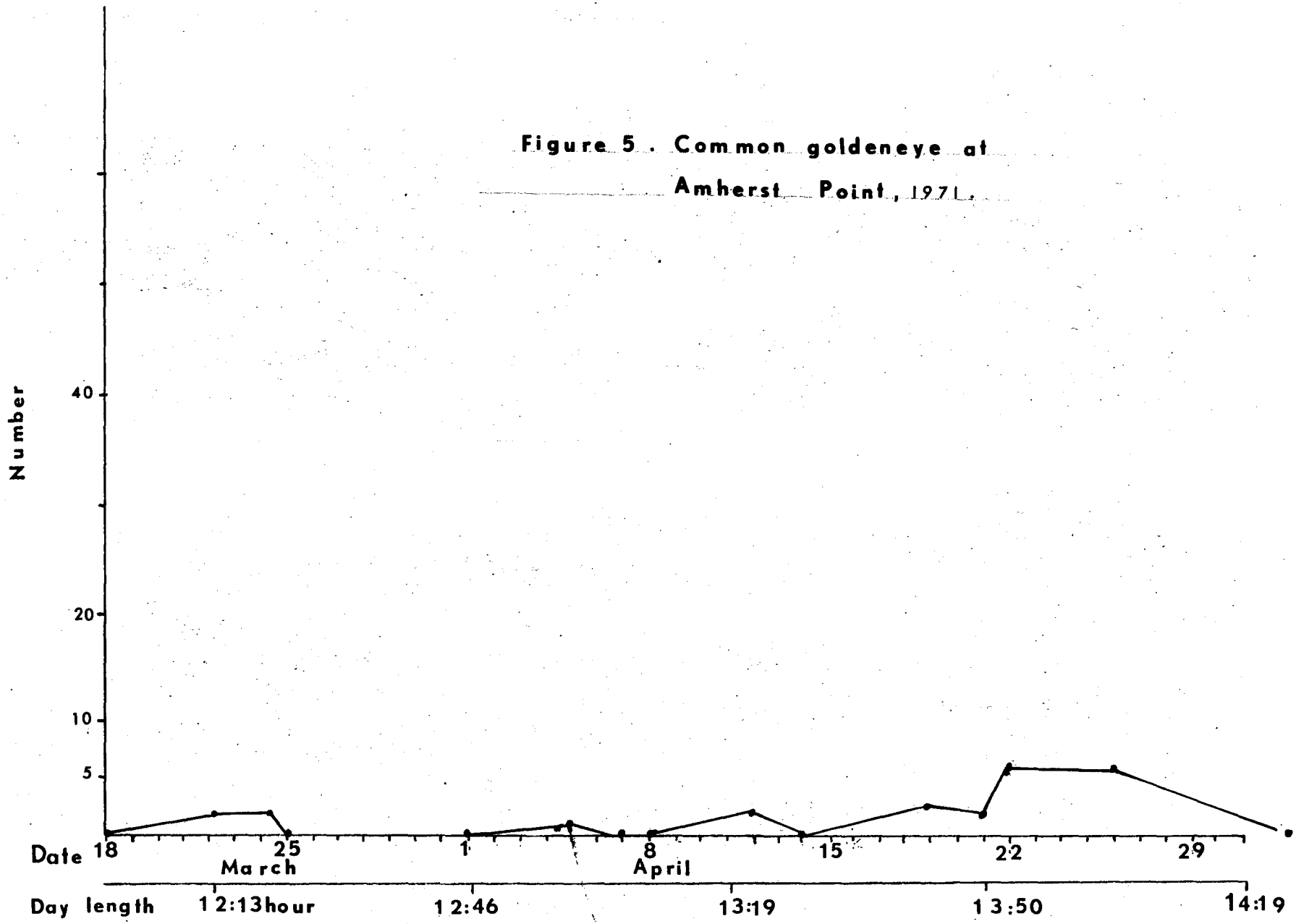


Figure 5. Common goldeneye at Amherst Point, 1971.



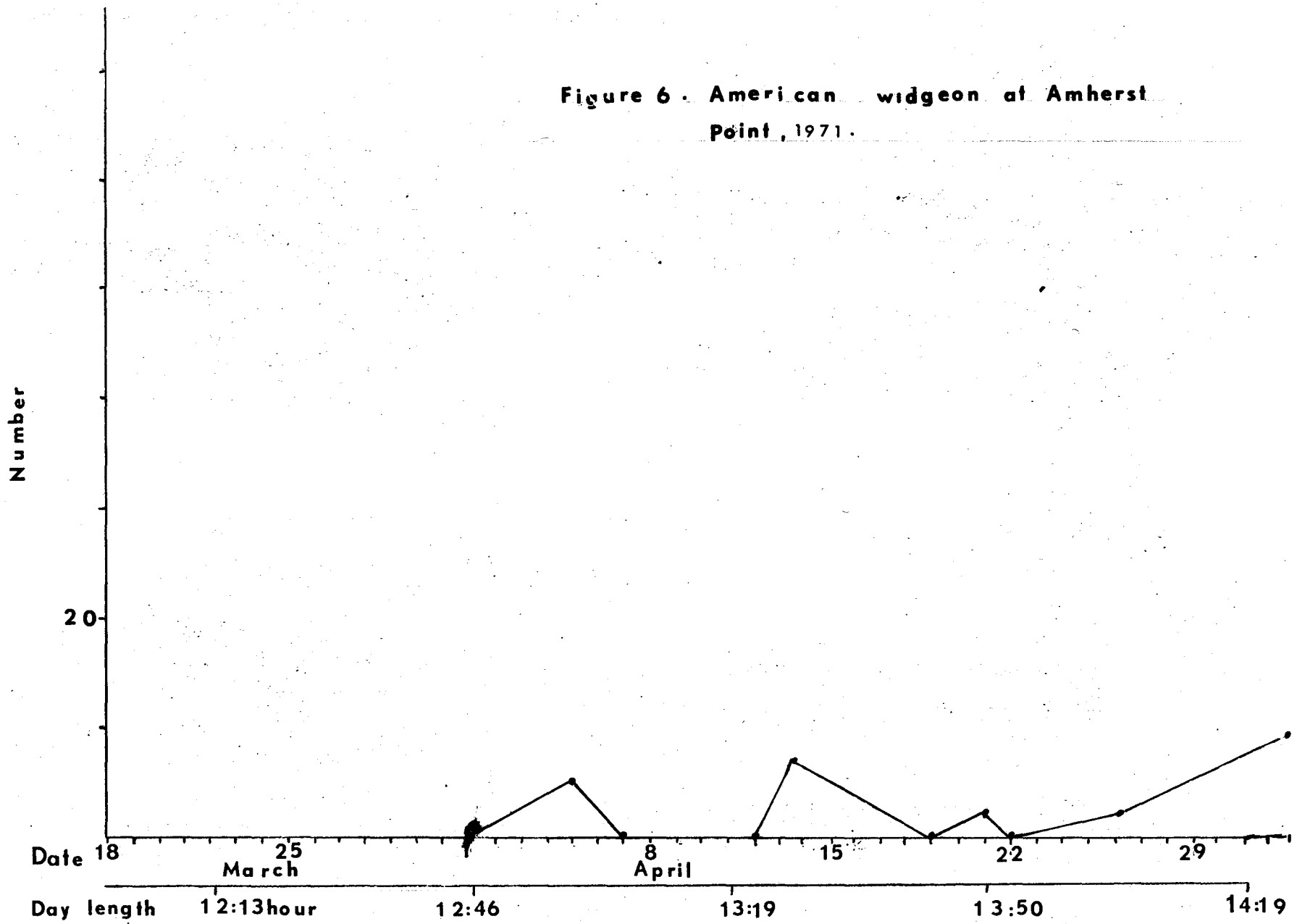


Figure 6. American widgeon at Amherst Point, 1971.

Figure 7. Ringneck duck at Amherst Point, 1971.

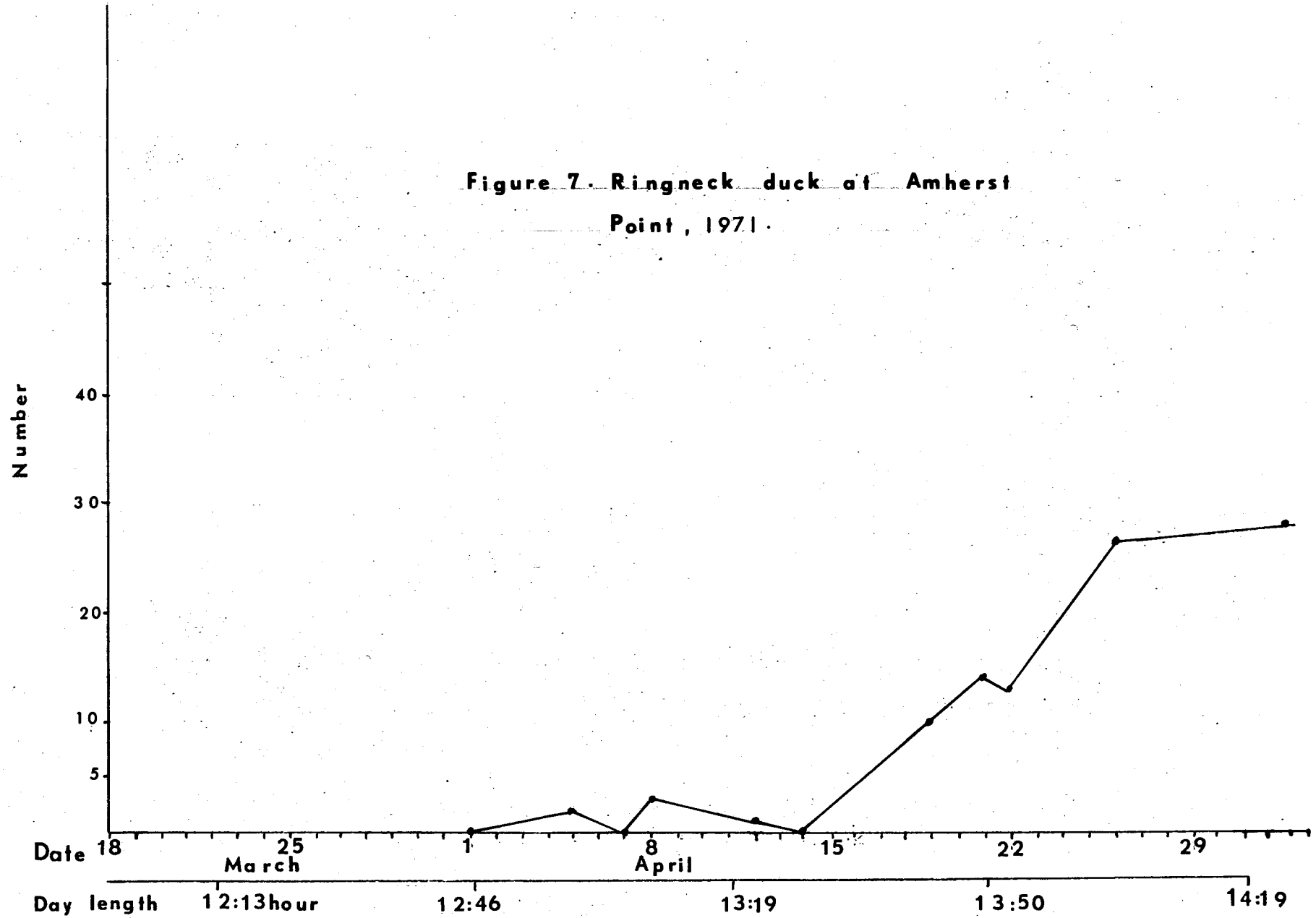


Table 1. Species and numbers of waterfowl at Amherst Point Sanctuary, 1971

Species	March						April										May
	18	22	24	25	29	30	1	5	7	8	12	14	19	21	22	26	3
Canada goose								49			20		3			6*	6*
Black duck			4	2		5	2	66	40	68	61	50	20	21	21	20	4
Pintail								35		5		2				3	2
Green-winged teal								40	30	28	28	33	2	4		12	5
Blue-winged teal								5	4							4	10
Goldeneye		2	2					1			2		3	2	6	6	
A. widgeon								5				7		2		2	9
Ring-necked duck								2		3	1		10	14	13	27	28
Surf scoter																1	
American scoter																2	
L. scaup																1	
Mallard																2	2
Shoveler																	2
Old squaw																	1

*Introduced

Table 2. Total number of black duck and number of pair on each observation date at Amherst Point, 1971

Date	Total Number	Number of pair
March 18	0	0
22	0	0
24	4	2
25	2	1
29	0	0
31	5	1
April 1	2	1
5	66	21
6	40	20
8	68	15
12	61	23
14	56	20
19	20	5
21	21	9
22	21	9
26	20	10
May 3	4	2

Table 3. Total number, number of pair and sex of pintail on each observation date at Amherst Point, 1971

Date	Total Number	Number of pair	Male	Female
March 18	0	0	0	0
22	0	0	0	0
24	0	0	0	0
25	0	0	0	0
29	0	0	0	0
31	0	0	0	0
April 1	0	0	0	0
5	35	12	23	12
7	0	0	0	0
8	5	2	3	2
12	0	0	0	0
14	2	1	1	1
19	0	0	0	0
21	0	0	0	0
22	0	0	0	0
26	3	1	2	1
May 3	2	1	1	1

Table 4. Total number, number of pair and sex of green-winged teal on each observation date at Amherst Point, 1971

Date	Total Number	Number of pair	Male	Female
March 18	0	0	0	0
22	0	0	0	0
24	0	0	0	0
25	0	0	0	0
29	0	0	0	0
31	0	0	0	0
April 1	0	0	0	0
5	40	8	23	17
7	30	--	--	--
8	28	8	14	14
12	28	11	14	14
14	33	15	18	15
19	2	1	1	1
21	4	2	2	2
22	0	0	0	0
26	12	--	--	--
May 3	5	2	3	2

Table 5. Total number, number of pair and sex of blue-winged teal on each observation date at Amherst Point, 1971

Date	Total Number	Number of pair	Male	Female
March 18				
22				
24				
25				
29				
31				
April 1				
5	5	2	3	2
7	4	2	2	2
8				
12				
14				
19				
21				
22				
26	4	2	2	2
May 3	10	4	6	4

Table 6. Total number, number of pair and sex of common goldeneye on each observation date at Amherst Point, 1971

Date	Total Number	Number of pair	Male	Female
March 18				
22	2	1	1	1
24	2	1	1	1
25				
29				
31				
April 1				
5	1	0	1	0
7				
8				
12	2	1	1	1
14				
19	3	1	2	1
21	6	3	3	3
22	6	3	3	3
26	5	0	5	0
May 3				

Table 7. Total number, number of pair and sex of American widgeon on each observation date at Amherst Point, 1971

Date	Total Number	Number of Pair	Male	Female
March 18				
22				
24				
25				
29				
31				
April 1				
5	5	2	3	2
7				
8				
12				
14	7	3	4	3
19				
21	2	1	1	1
22				
26	2	1	1	1
May 3	9	1	8	1

Table 8. Total number, number of pair and sex of ring-necked duck on each observation date at Amherst Point, 1971

Date	Total Number	Number of Pair	Male	Female
March 18				
22				
24				
25				
29				
31				
April 1				
5	2	1	1	1
7				
8	3	--	--	--
12	1		1	
14				
19	10	1	9	1
21	14	1	13	1
22	13	1	12	1
26	27	6	21	6
May 3	28	11	17	11

Table 9. Observation of courtship and nesting behaviour of black duck, pintail, green-winged teal, blue-winged teal, widgeon and ring-necked duck at Amherst Point, 1971

Date	Observation
BLACK DUCK	
March 24	Pair of black duck on small area of open water where stream flows out of ponds. Joined by 2 other black duck. Aerial chase lasting for 10 minutes with birds positioned thus:  Four birds then landed on water. "Sneak" and "wing flap" behaviour occurred. Intruding birds chased off again with another two minute aerial chase. Four birds again landed with two intruding birds at far end. Pair flew to join them, chasing them off. A third brief aerial chase in which only the original pair returned to open water area.
April 5	66 black duck (21 pair) mostly intent on feeding or nesting. A few "thrusts" and short lived "neck stretch" displays.
April 7	Observed 8 pair of black duck for 20 minutes. Birds mostly feeding or loafing. One pair approached too closely to another pair and male "thrust" at approaching pair causing them to withdraw.
April 8	Loafing or feeding behaviour only.

Table 9. Observation of courtship and nesting behaviour of black duck, pintail, green-winged teal, blue-winged teal, widgeon and ring-necked duck at Amherst Point, 1971 (continued)

Date	Observation
BLACK DUCK	
April 12	Mostly feeding or loafing behaviour. Occasional "wing flap". Amongst four black duck saw brief "wing flap" and "bill dip" activity.
April 14	Observed a single male join a pair. Female began "inciting". This stimulated several intense "bill splashes" by single male. Mated male kept between female and other male causing male to keep six feet away. Finally mated male swam 30 feet after single male. Head of paired male was low on shoulders (throat). Head of single male was "stretched". Female quacked and two males took to air. Only the paired male returned after a brief aerial chase.
April 19	At 6:20 E.S.T., observed a lone male at edge of pond. Male seemed very watchful and was not feeding. At 7:00 a pair landed nearby and lone male flew to join them. All three birds began to preen under their wing. The female swam closely behind her mate, once pecked at his tail. At 7:10 another black duck flew by and the lone male flew to meet it. The two birds then landed beside the pair. The fourth bird departed immediately and was heard quacking about 300 yards distant a few minutes later. The lone male flew to join it and both were then observed flying together. The other pair then left.

Table 9. Observation of courtship and nesting behaviour of black duck, pintail, green-winged teal, blue-winged teal, widgeon and ring-necked duck at Amherst Point, 1971 (continued)

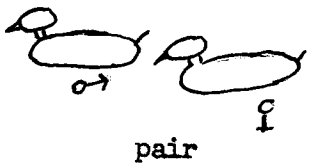
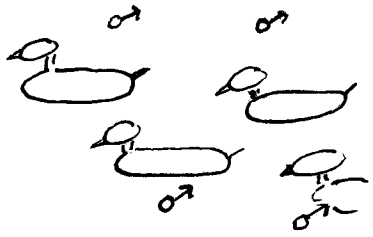
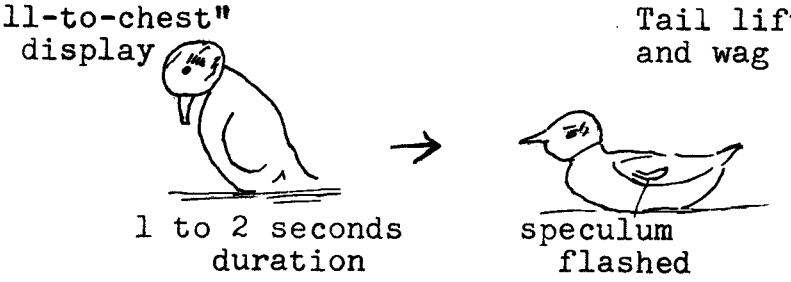
Date	Observation
BLACK DUCK	
April 21	Observed a pair flying low amongst some evergreen trees. One bird became separated from the other, emerging from the woods about 30 seconds after the other.
April 22	Observed same pair as observed on April 21 amongst small evergreen trees about 60 feet from water. These birds were flushed. No evidence of a nest was found. Later saw same birds with one quacking constantly for about 60 seconds.
April 26	Observed pair flying in area of woods. Later saw one bird alone in same area on water. Same pair as observed on April 21 and 22.
PINTAIL	
April 5	35 (12 pair, 11 single ♂) pintail on flooded area. Extra males were in company of pairs. Often pairs swam away from males but single males followed. "Wing flap" and "bill dip" displays were common. Mated males occasionally chased single males sometimes resulting in aerial chases of 5 or more birds. This courtship activity was most evident in the morning and not the afternoon. A typical group as follows:
	Heads low on shoulders, occasional head bobbing.  pair 

Table 9. Observation of courtship and nesting behaviour of black duck, pintail, green-winged teal, blue-winged teal, widgeon and ring-necked duck at Amherst Point, 1971 (continued)

Date	Observation
PINTAIL	
April 8	3♂ and 2♀ pintail circling over flooded area. Birds landed and single male swam after pairs but soon lost interest.
April 12	2♂ about a pair were chased away by the paired ♂.
GREEN-WINGED TEAL	
April 5	Group of 40 feeding on flooded area. Birds were giving a loud "peeping" note. Frequently males chased one another. When this occurred the birds "quacked". The birds did not seem strongly paired. "Wing flaps" were common. Where courtship was intense a "bill-to-chest" and "tail lift" display were given.



"Bill splashes" and "head bobbing" also occurred.

April 7 — Courtship behaviour similar to April 5.

Table 9. Observation of courtship and nesting behaviour of black duck, pintail, green-winged teal, blue-winged teal, widgeon and ring-necked duck at Amherst Point, 1971 (continued)

Date	Observation
GREEN-WINGED TEAL	
April 8	14♂, 14♀ (8 pair) observed. Birds feeding for the most part. A few apparently unpaired males "peeping" and swimming about females. Paired birds were in a flock and not isolated.
April 12	16 teal mostly paired. A few males intensely "peeping" and performing "bill-to-chest" display. Short chases were common.
April 14	33 teal mostly paired and feeding. When a pair approached too close to another pair or a single male came to close to a pair a short chase occurred with birds sometimes flying. ten feet away. "Peeping", "quacking", "wing flap" and "Bill-to-chest" displays were evident.
April 21	Two pair of teal together. Females began "inciting". Birds flew off as a group.
BLUE-WINGED TEAL	
May 3	Observed two pair together. Birds began giving a nasal peeping note. Females began "inciting" and one male chased off the other pair.
AMERICAN WIDGEON	
April 14	Two pair together. "Wing flap" common. One male chased the other male several times causing it to fly a short distance away. After these short chases both males raised their tails and wings in such a way as to display their speculum. Half hearted "bill-to-chest" displays were also given.

Table 9. Observation of courtship and nesting behaviour of black duck, pintail, green-winged teal, blue-winged teal, widgeon and ring-necked duck at Amherst Point, 1971 (continued)

Date	Observation
RING-NECKED DUCK	
April 19 to May 3	A few pair and an excess of males were present on the ponds. The single males kept company with the pairs. The paired males often gave brief thrusts at males which approached too closely. "Head throw", "bill-to-chest" and "wing flap" displays were common. Females increased in number (at least paired birds) towards May 3 and courtship displays were not as prevalent as earlier.

Table 10. Ice conditions, Amherst Point, 1971

Date	Ice Conditions
March 18	Small amount of open water near bridge between two main ponds.
March 22	Small area open water where water flows out of ponds on west side.
March 31	Ice over flooded area very rotten. Ice on ponds showing wet areas. Areas of open water previously noted somewhat larger.
April 5	Ice over flooded cat-tail marsh area gone, leaving huge area of open water. Ice on ponds, including ponds at far end of cat-tail marsh, still present, however disappearing along west edges and rotten.
April 12	Ice still on ponds but progressively more rotten. Water level at flooded cat-tail area one foot lower.
April 14	Ice very rotten on ponds. Areas of open water enlarging. Water level still lower over flooded cat-tail marsh area. (Sedges and cat-tails above water but water depth still two - three feet).
April 19	Ice on ponds mostly gone.
April 21	Ice on ponds gone.

Germantown - salt marsh and dykeland areas

Procedure

Waterfowl on salt marsh and dykeland areas surrounding Germantown were observed from a number of vantage points along roads. Figure 1 shows the areas that were observed and the observation points. Observation of these areas usually took three to four hours.

Results

Table 1 presents the different species and numbers of waterfowl that were counted.

Table 2 gives the percent paired black duck of the total number.

Figure 2 is a graph of black duck numbers on different observation dates.

Figure 3 is a graph of Canada goose numbers on different observation dates.

Discussion

Most Canada geese were observed on dykeland about the mouth of the Shepody River. Scattered groups of Canada geese also were observed on different salt marsh areas. The number of geese on the dykeland remained at about 700 to 900 from March 26 to April 10.

On April 15 to 20 the number increased to over 1700. On April 27 the number had declined to about 1100.

The number of black duck on the salt marsh areas declined after April 6. This corresponded to an increasing availability of freshwater areas.

Brant were observed at Anderson Hollow.

Flocks of common eider were observed flying along the coast.

After April 10 rafts of red-breasted mergansers were common along the coast. On windy days the birds were frequently observed on salt pans of salt marshes.

Germantown and surrounding coastal areas.

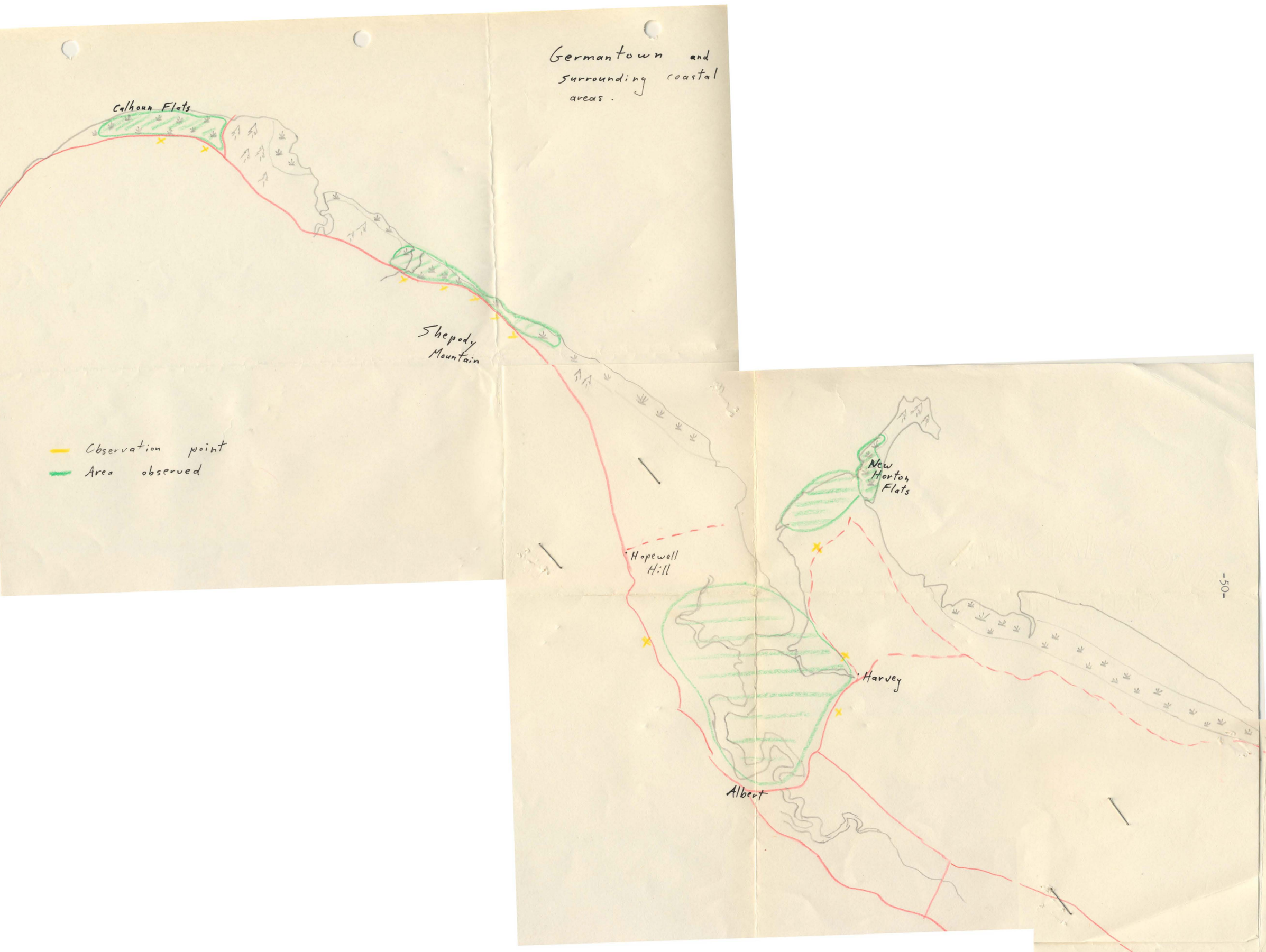


Figure . Black duck on coastal areas near Germantown , 1971.

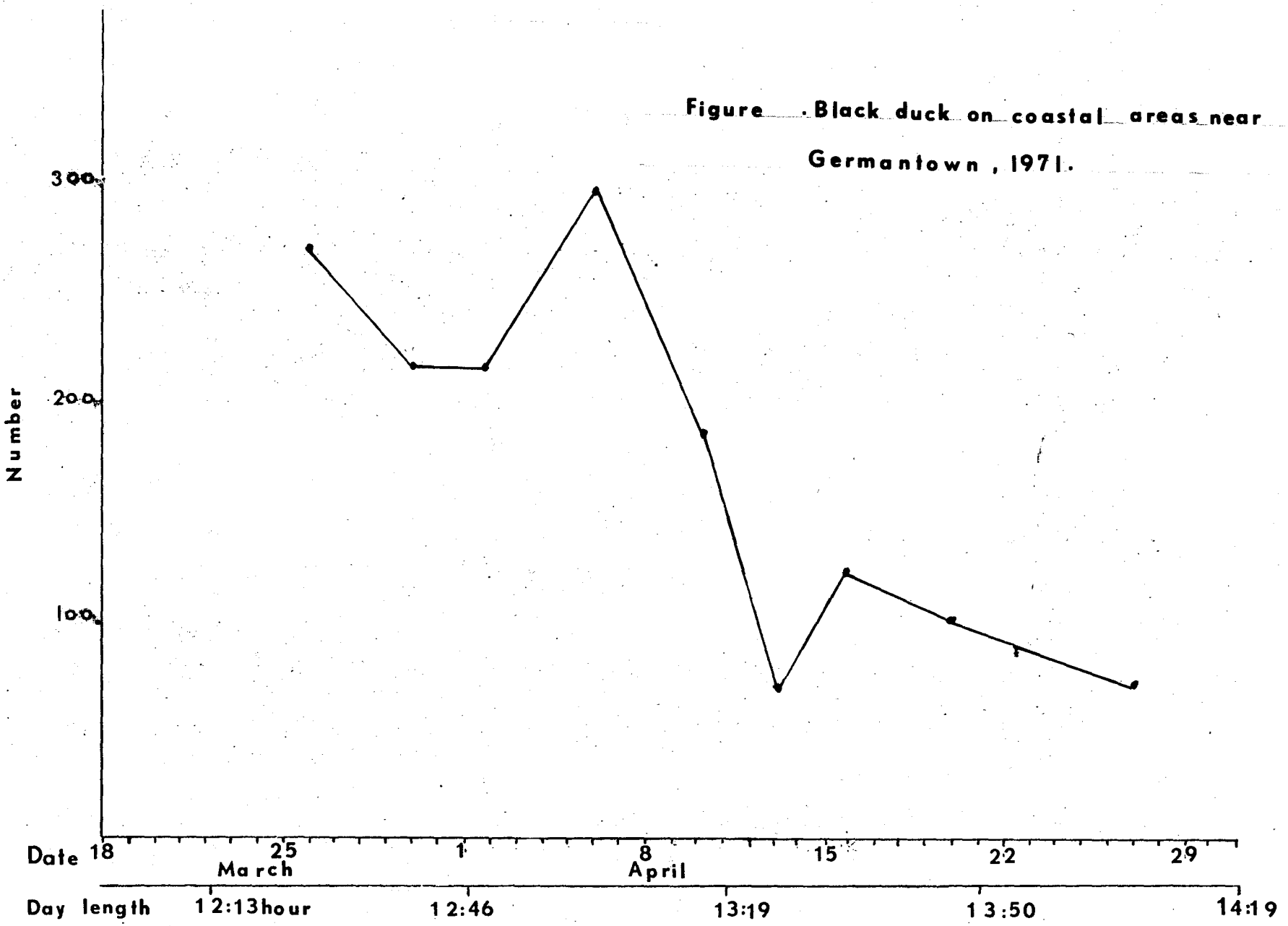


Figure .Canada geese on dykeland zone salt marsh near Germantown, 1971.

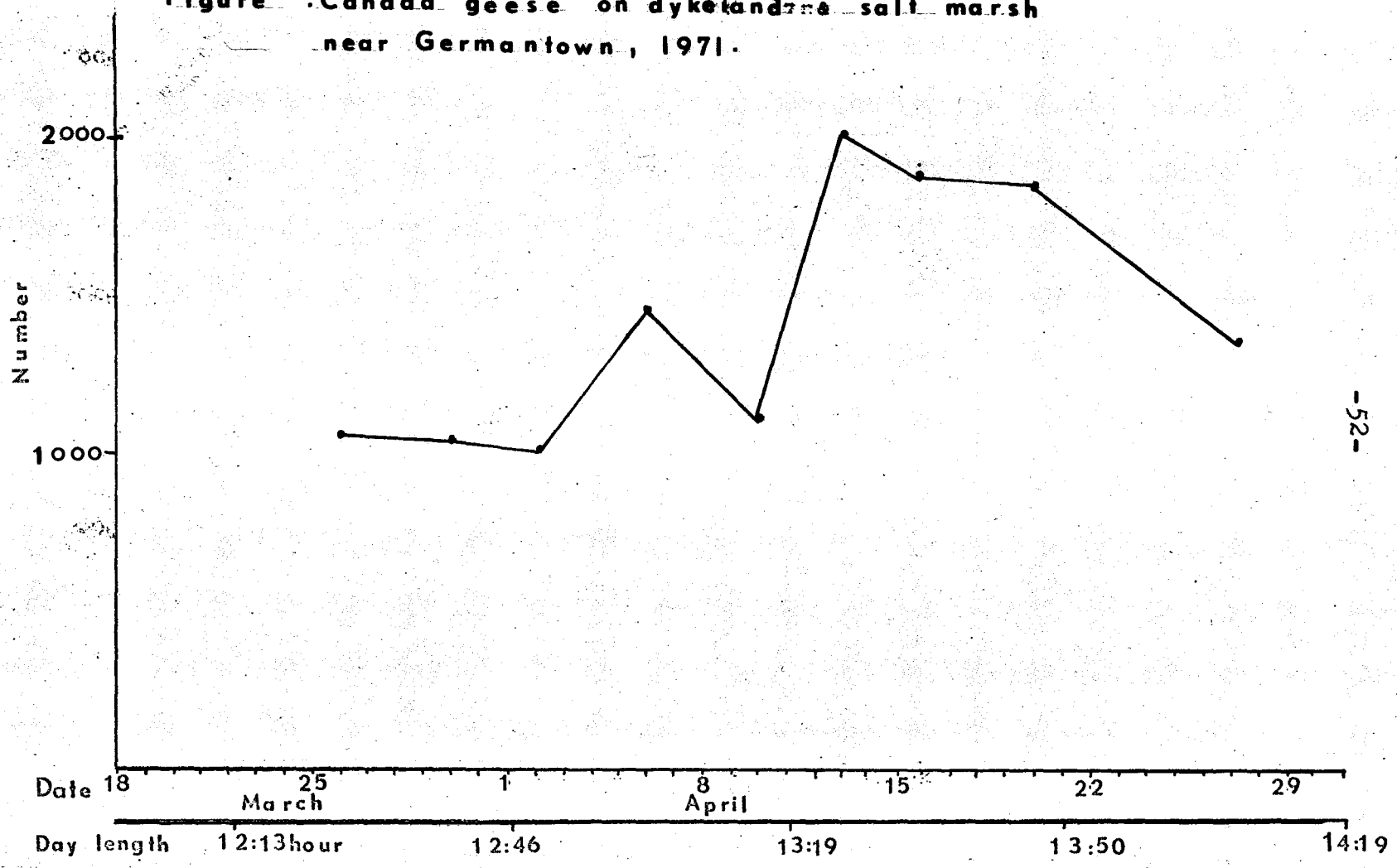


Table 1. Species and numbers of waterfowl on dykeland and salt marsh areas surrounding Germantown

Species	March		April						
	26	30	2	6	10	13	16	20	27
Canada goose	1078	1142	1010	1472	1130	2010	1886	1847	1349
Brant	0	0	0	0	7	0	0	0	40
Black duck	270	215	216	299	186	70	124	101	68
Mallard	3	4	2	1	0	0	0	0	0
Pintail	0	0	0	0	0	0	0	3	1
Green-winged teal	0	0	2	36	21	0	26	48	30
Blue-winged teal	0	0	7	0	0	0	0	0	4
Goldeneye	1	0	0	0	0	0	0	0	0
Eider	0	150	0	200	20	150	0	420	0
Common merganser	2	40	0	0	0	0	2	0	0
Red-breasted merganser	0	0	0	0	1	210	26	46	273
Great blue heron	0	0	13	2	0	11	2	2	9

Table 2. Percent black duck in pairs of the total number

Date	Total Number	Number paired birds	Percent paired birds
March 26	270	202	74
30	215	148	68
April 2	216	92	42
6	299	148	49
10	186	72	38
13	70	62	88
16	124	72	58
20	101	82	81
27	68	54	68
			Average 63

APPENDIX I

Weather

Date	Sky	Wind (Beaufort #)	Temperature	Area
March 18	0	2	30°F	John Lusby & Amherst Point
19	0	3	30°	John Lusby
20	2	1	--	John Lusby
22	5 (wet snow)	3 - 4	32° (chill factor high)	John Lusby & Amherst Point
23	1	3	25°	Germantown & John Lusby
24	5 (wet snow)	3 - 4	25-35°	Amherst Point and Dave's Lake
25	1	4 3	20→32°	John Lusby & Amherst Point
26	1	3 - 4	25°	Germantown
27	0	3	25 - 30°	John Lusby
29	2	5	32°	John Lusby & Amherst Point
30	--	--	--	--
31	5 (wet snow)	2	33°	Dave's Lake & Amherst Point
April 1	1→0	4-5 3	30→37°	John Lusby & Amherst Point
2	0 2	2	35 - 37°	Germantown

APPENDIX I (Continued)

Weather

Date	Sky	Wind (Beaufort #1)	Temperature	Area
April 5	0	2→3-4	38°	Amherst Point & John Lusby
6	0	2	40°	Germantown
7	--	--	--	Dave's Lake & Amherst Point
8	2→5	3	31 -34°	John Lusby & Amherst Point
10	1	4	35°	Germantown
12	4→0	1	41°	Amherst Point & John Lusby
13	0	1	43°	Germantown
14	0	3 - 4	42°	Dave's Lake & Amherst Point
15	5	1-2→3	39→32°	John Lusby & Amherst Point
16	1	2 - 3	33°	Germantown
19	5	4 - 5	35°	Amherst Point & John Lusby
20	4 & 5	4	45°	Germantown
21	5	2	36°	Dave's Lake & Amherst Point
22	2	3 - 4	37°	John Lusby & Amherst Point
26	2	3	35°	Amherst Point & John Lusby
27	2	3	35°	Germantown
29	5	2	35°	Dave's Lake
May 3	0	2	45°	Amherst Point