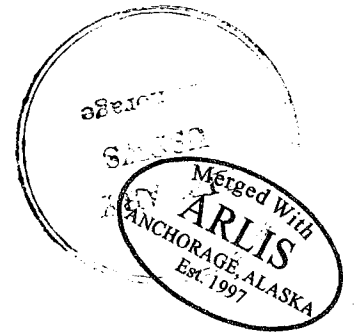


East Long Lake Study Site, 1980

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INTRODUCTION

Each summer from 1977 through 1980, the Special Studies section of the U.S. Fish and Wildlife Service conducted investigations of bird populations and habitat used by waterbirds in the large lake regime north and east of Teshekpuk Lake, Naval Petroleum Reserve-Alaska (NPR-A) (Derksen et al. 1979; Taylor et al. 1980). During the 1980 field season, emphasis in the investigation shifted from systematic gathering of data on all bird species to concentrated studies of black brant (Branta bernicla nigricans) and oldsquaw ducks (Clangula hyemalis). Results from the work on black brant and oldsquaw will be published elsewhere (Simpson, et al. in preparation, Taylor and Derksen, unpublished data). This report summarizes all other data gathered incidentally at the East Long Lake study site (Fig. 1) from 4 June through 11 August, 1980.

Personnel at the East Long Lake site included S. G. Simpson, E. J. Taylor, and L. Ward. Dr. D. V. Derksen provided expertise and field assistance for one week during July, and M. Hogan and J. Murk assisted in the field from 14 July through 10 August.

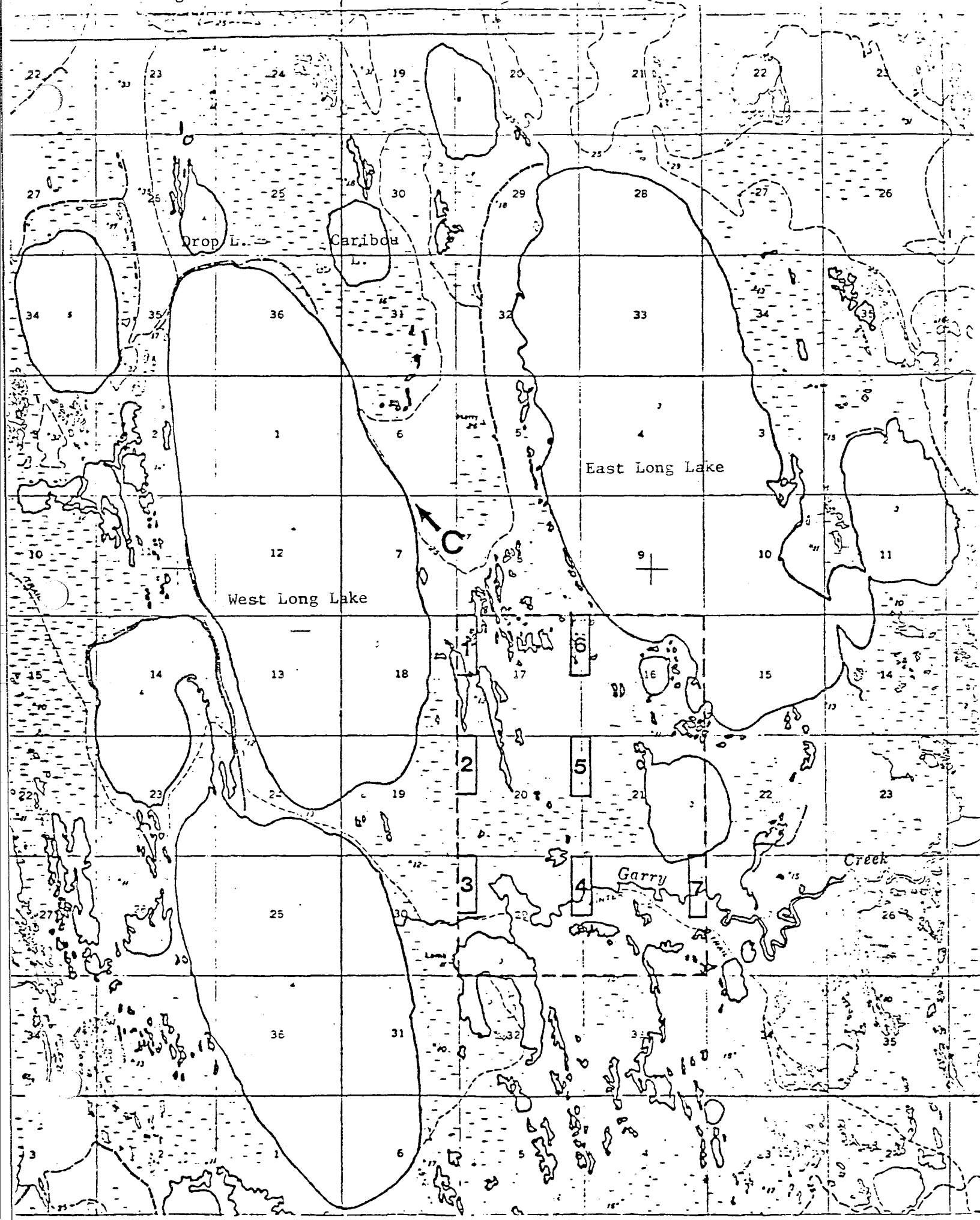
METHODS

Minimum and maximum temperatures were recorded daily. Snow-melt, cloud cover, wind direction and velocity, and precipitation were incidentally noted throughout the summer, usually on a daily basis. All information on chronology, nesting, production, habitat use, and migration of birds was gathered opportunistically during the summer, as were observations of mammals.

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Figure 1. East Long Lake study site. Camp denoted by "C".



description of the East Long Lake study site, see Rothe et al. (1979).

During June, 10 pintails (Anas acuta) were collected for information on food habits, using either a Remington model 870 12 ga. shotgun or a .22 caliber rifle. Location, time of day, length of time observed feeding prior to collection, wetland class, water depth, and weather were recorded for each specimen. The esophagus, proventriculus and gizzard were injected immediately after collection with 10% formalin. Within one hour of collection, birds were weighed, age and sex were determined by examination of plumage, and gonads were measured. Contents of the esophagus and proventriculus were flushed into one vial, contents of the gizzard into another, and both were stored in 10% formalin. Heart, liver, pancreas, intestines, and gonads were preserved in 10% formalin.

RESULTS

Snowmelt and Weather

Snow cover on the study site was estimated at 99% on 4 June. Snowmelt proceeded rapidly due to several days of warm rains and sun, and by 7 June snow cover was reduced to approximately 50%. By 15 June snow was gone except for large accumulations below ridges and along high-relief shorelines. A moat developed along the east side of West Long Lake by 21 June, and by 4 July a moat formed across East Long Lake. Ice on both East and West Long Lakes was free-floating by 6 July. Both were ice-free by 8 July

(except for rafts of small pieces along windward shorelines), 9 days earlier than in 1979.

Smaller Class V wetlands (Deep-open lakes) were open earlier than large lakes. Drop Lake and Caribou Lake (Fig. 1) appeared to be open on 14 June, but bottom ice may have persisted in both at that time. Most Flooded Tundra (Class I) wetlands were open by 14 June, while shallow-Carex (Class II) ponds and deep- Arctophila (Class IV) wetlands contained bottom ice or surface water on ice. Class IV wetlands were ice-free by 21 June.

Daily temperatures, precipitation and cloud cover data are presented in Tables 1 and 2, respectively.

Chronology

Chronological data (Appendix I) for birds observed near East Long Lake camp during summer, 1980 are summarized in Tables 3 and 4, for breeding and non-breeding species, respectively. A total of 48 species was observed between 4 June and 10 August. Since weekly censuses of a fixed area were not conducted, comparisons with densities of birds in previous years were precluded, and dates given for chronological events such as arrival, onset of molt, and flocking behavior were derived from happenstance observations. However, daily activities of personnel frequently necessitated hiking over several miles, thus a fair range of habitat types was covered and observations were not limited to birds in the immediate vicinity of camp. Discussion here will be limited to major bird groups, the geese in some detail, and to

Table 1. Minimum/maximum temperatures ($^{\circ}$ F)
recorded at East Long Lake study site, 1980

Date	Minimum	Maximum
June 10	35	50
June 11	40	70
June 12	36	59
June 13	41	47
June 14	44	30
June 15	42	30
June 16	46	54
June 17	-	-
June 18	-	-
June 19	-	-
June 20	34	46
June 21	-	-
June 22	-	-
June 23	40	60
June 24	-	-
June 25	-	-
June 26	36	58
June 27	-	-
June 28	-	-
June 29	57	39
June 30	54	36
July 1	38	48
July 2	-	-
July 3	36	46
July 4	36	58
July 5	-	-
July 6	33	42
July 7	32	44
July 8	32	42
July 9	34	42
July 10	-	-
July 11	-	-
July 12	-	-
July 13	34	-
July 14	-	-
July 15	-	-
July 16	-	-
July 17	37	49
July 18	-	-
July 19	34	47
July 20	34	40
July 21	34	42
July 22	-	-
July 23	32	68

Table 1 (cont.). Minimum/maximum temperatures (° F)
recorded at East Long Lake Study site, 1980.

Date	Minimum	Maximum
July 24	44	58
July 25	36	52
July 26	-	-
July 27	-	-
July 28	-	-
July 29	30	38
July 30	29	39
July 31	30	40
August 1	31	40
August 2	-	-
August 3	-	-
August 4	-	-
August 5	40	69
August 6	-	-
August 7	-	-
August 8	-	-
August 9	-	-
August 10	-	-
August 11	-	-
August 12	-	-
August 13	34	-
August 14	32	42
August 15	30	40
August 16	28	32
August 17	28	50
August 18	-	-
August 19	-	-
August 20	35	55
August 21	43	61
August 22	-	-
August 23	-	-
August 24	35	51
August 25	34	45
August 26	37	45
August 27	32	42
August 28	30	34
August 29	30	32
August 30	32	43
August 31	26	37
September 1	24	31
September 2	26	-
September 3	33	35
September 4	26	33
September 5	-	-
September 6	-	-
September 7	26	38

Table 1 (cont.). Minimum/maximum temperatures (° F)
recorded at East Long Lake study site, 1980.

Date	Minimum	Maximum
September 8	35	47
September 9	-	-
September 10	-	-
September 11	-	-
September 12	-	-

Table 2. Sky conditions and precipitation at East Long Lake, summer 1980.

Number of days						
Month	N	Partly			Fog	Precipitation)
		Clear	Cloudy	Overcast		
June	27	13	4	9	2	3
July	31	4	7	20	15	8
August	10	2	2	6	4	3
Season	68	19	13	35	21	14

Table 3. Breeding birds at East Long Lake, summer 1980.

Species	Date of First Observation	Evidence of Breeding	Date of First Evidence	Clutch or Brood size (E=eggs, Y=young)	Total number of nests (N) or broods (BR)	Date of last Observation
Arctic loon (<u>Gavia stellata</u>)	5 June 11 June	nest chicks	29 June 21 July	- 1	4N 2BR	11 Aug.
Red-throated loon (<u>Gavia stellata</u>)	11 June	nest	29 June	2E	3N	8 Aug.
White-fronted goose (<u>Anser albifrons</u>)	4 June	brood	13 July	5Y	5BR	9 Aug.
Black brant (<u>Branta bernicla</u>)	4 June	nest broods	19 June 10 July	4E, 5E 1,2,3,4,5Y	15N 5BR	11 Aug.
Spectacled eider (<u>Somateria fischeri</u>)	7 June	nest	18 June	5E	1N	28 July
Pintail (<u>Anas acuta</u>)	4 June	copulation nests	18 June	4E, 8E, 2E	5N	11 Aug.
Oldsquaw (<u>Clagula hyemalis</u>)	5 June	nest brood	24 June	-	2N	11 Aug.
Parasitic jaeger (<u>Stercorarius parasiticus</u>)	6 June	distraction display	23 June	-	1N	8 Aug.
Glaucous gull (<u>Larus hyperboreus</u>)	4 June	nest	27 June	-	5N	11 Aug.
Sabine's gull (<u>Xema sabini</u>)	7 June	nest	17 June	2E	1N	8 Aug.

Table 3 (cont.). Breeding birds at East Long Lake, summer 1980.

Species	Date of First Observation	Evidence of Breeding	Date of First Evidence	Clutch or Brood size (E=eggs, Y=young)	Total number of nests (N) or broods (BR)	Date of last Observation
Arctic tern (<u>Sterna paradisea</u>)	6 June	nest young	23 June 11 July	1Y	-	8 Aug.
American golden plover (<u>Pluvialis dominica</u>)	8 June	nest	23 June	-	1N	8 Aug.
Pectoral sandpiper (<u>Calidris melanotos</u>)	7 June	display nest young	7 June 21 June 14 July	2E 2Y	1 2BR	10 Aug.
Dunlin (<u>C. alpina</u>)	4 June	nest	12 June	2E(incomplete) 4E(complete)	1N	8 Aug.
Semipalmated sandpiper (<u>C. pusilla</u>)	4 June	nest	13 June	2E	1N	3 Aug.
Red phalarope (<u>Phalaropus fulicarius</u>)	7 June	nest	18 June 1	4E	-	7 Aug.
Northern phalarope (<u>Lobipes lobatus</u>)	8 June	nest				7 Aug.
Long-billed dowitcher (<u>Limnodromus scolopaceus</u>)	8 June					16 July
Lapland longspur (<u>Calcarius lapponicus</u>)	4 June	nests	13 June	3E, 5E	2N	11 Aug.

Table 4. Non-breeding birds at East Long Lake, 1980.

Species	First Observation	Status ^a	Number of days on which observed			Last Observation	Comments
			June	July	August		
Yellow-billed loon (<u>Gavia adamsii</u>)	8 June	B	3	10	0	15 July	
Canada goose (<u>Branta canadensis</u>)	8 June	B	23	29	7	11 August	
Lesser snow goose (<u>Chen caerulescens</u>)	8 June	C	7	10	2	11 August	
American widgeon (<u>Mareca americana</u>)	10 June	C	2	0	0	27 June	
Common eider (<u>Somateria mollissima</u>)	15 July	C	0	1	0	15 July	Note: Large number of eiders moved through, later in July, but none were positively identified as commons.
Red-breasted Merganser (<u>Mergus serrator</u>)	10 June	B	3	2	0	8 July	
Black-bellied Plover (<u>Squatarola squatarola</u>)	7 June	B	9	11	3	8 August	
Buff-breasted Sandpiper (<u>Tryngites subruficollis</u>)	10 June	C	1	0	0	10 June	
Baird's Sandpiper (<u>Erolia bairdii</u>)	1 July	C	0	1	0	1 July	
Pomarine jaeger (<u>Stercorarius pomarinus</u>)	4 June	C	16	0	0	28 June	

Table 4 (cont.). Non-breeding birds at East Long Lake, 1980.

Species	First Observation	Status ^a	Number of days on which observed			Last Observation	Comments
			June	July	August		
Long-tailed jaeger (<u>Stercorarius longicaudus</u>)	11 June	B	6	6	0	23 July	
Snowy Owl (<u>Nyctea scandiaca</u>)	5 June	C	7	9	0	21 July	
Short eared owl (<u>Asio flammeus</u>)	4 June	C	8	0	0	27 June	
Snow bunting (<u>Plectrophenax nivalis</u>)	4 June	B	14	8	2	10 August	
Savannah sparrow (<u>Passerculus sandwichensis</u>)	6 June	C	1	0	1	8 August	
Redpoll (<u>Acanthis flammea</u>)	7 June	C	6	0	0	17 June	
Tree Sparrow (<u>Spizella arborea</u>)	8 June	C	1	0	0	8 June	
Northern Shoveler (<u>Spatula clypeata</u>)	9 June	C	6	0	0	17 June	
Green-winged Teal (<u>Anas carolinensis</u>)	11 June	C	4	0	0	28 June	
Greater Scaup (<u>Aythya marila</u>)	27 June	C	2	6	0	20 July	

Table 4 (cont.). Non-breeding birds at East Long Lake, 1980.

Species	First Observation	Status ^a	Number of days on which observed			Last Observation	Comments
			June	July	August		
White-winged Scoter (<u>Melanitta deglandi</u>)	29 June	C	1	0	1	7 August	
Peregrine Falcon (<u>Falco peregrinus</u>)	1 July	C	0	1	0	1 July	
Bar-tailed Godwit (<u>Limosa lapponica</u>)	6 July	C	0	1	0	6 July	
Barn Swallow (<u>Hirundo rustica</u>)	3 August	C	0	0	1	3 August	

^a After Bergman et al. (1977). A = visitor from nearby nesting or roosting sites; B = regular summer visitor;
C = casual or accidental visitor.

unusual observations or phenomena not observed during previous field seasons.

Loons

Yellow-billed loons (Gavia adamsii) were observed on 10 occasions from 8 June through 15 July, and on several occasions after that date. Usually only one was observed, flying near or feeding in West Long Lake, but 2 were observed on the lake on 3 occasions.

Swans

Whistling swans (Olor columbianus) were first observed in the area on 15 June. In addition to numerous other sightings of swans (Appendix I), 3 flightless birds were observed near Ruddy Lake on 8 August.

Geese

White-fronted geese (Anser albifrons) were observed less frequently than during previous years, and fewer were observed (Appendix I). After 1 July, sightings were rare, except for about 20 geese molting on East Long Lake. Since no aerial survey was conducted during the 1980 field season, we were unable to determine whether the apparent decrease in white-fronted geese was local or area-wide.

The arrival of Canada geese (Branta canadensis) on the study area, 8 June, coincided exactly with the previous year's arrival date. Arrival of Canada geese in the area continued through 21

June, and mean flock size until that date was 14.5 ($n = 35$, $s = 12.3$). Evidence of molting (flocking or swimming in response to the presence of an observer, and newly lost primary and secondary feathers along lakeshores) was first observed on 23 June. Flightlessness was definitely confirmed on 28 June when 1 goose was unable to take flight with its companions in response to presence of observers. Post-molting Canada geese were observed flying in response to aircraft disturbance on 21 July (4 of 16). Flocks of post-molters were observed daily feeding in, loafing on, or flying over upland tundra during the last week in July. Canadas were still present in the area on 11 August, when observers departed.

Black brant were present on 4 June when observers arrived. Prior to 20 June only breeding pairs were observed, but during the last 10 days of June, 7 flocks ranging in sizes from 3 to 14 were observed flying between East and West Long Lakes. The first concentration of molting brant on East Long Lake appeared on 29 June. A pair of brant collected on 5 July from a flock of 4 were failed breeders (obvious brood patch on the female). Although the build-up in numbers of brant on East Long Lake continued, observers were unable to detect path or time of arrival, nor were any major influxes actually observed. Either the influx occurred between 0000 and 0800 hours when few observations were made, or flocks were arriving from the east and hence went unobserved. Peak numbers of brant on East Long Lake occurred on 16 July, when 1800 were observed.

Seven post-molting brant were observed in flight on 21 July. Numbers of brant on East Long Lake decreased during the last week of July, and by 4 August, fewer than 20 were observed from the west shore. Small flocks of brant were still present in the area on 11 August when observers departed.

Lesser snow geese (Anser caerulescens) were first observed on 8 June. On 17 June, 4 blue-phase birds were seen in a flock of 7, and on 26 June a flock of 50 white-phase birds flew east over East Long Lake camp. Small flocks (6 to 8) of snow geese molted on Caribou and East Long Lakes, and were last observed on 4 August. One Ross goose was identified in a flock of molting brant on East Long Lake on 26 July.

Ducks

Pintails were present in the area on 4 June, and were observed flying in small flocks or loafing along thawing edges of wetlands and ice-wedges. The proportion of pintails observed which were females was much higher than in 1979. Pairs and aerial chases were observed frequently during June. By 22 June, non-breeding pintails began flocking. During July, only breeding pairs were easily observable when molting ducks remained hidden in flooded Carex or Arctophila beds. By 24 July, flocks of pintails were again seen flying. Pintails were still present in the area on 11 August, when observers departed, although as early as 3 August medium-sized flocks (20 to 30) were observed flying generally east and fairly high, as though migrating.

Other dabbling ducks observed in the area included at least one pair of northern shovelers (Anas clypeata), at least 3 green-winged teal (A. crecca), and as many as 14 American wigeon (A. americana), none of which were seen after 28 June.

Greater scaup (Aythya marila) were observed on 8 occasions from 27 June through 20 July, in groups of 9 or fewer. On 29 July, a white-winged scoter (Melanitta deglandi) was observed in a flock of oldsquaws on Caribou Lake, and on 7 August, 250 white-winged scoters were observed flying northwest over Caribou Lake. All information on oldsquaw will be published elsewhere ().

King and spectacled eiders (Somateria spectabilis and S. fischeri) were first observed on 8 and 7 June, respectively. Spectacled eiders were observed more frequently than king eiders throughout the summer. A male common eider (S. mollissima) was observed on East Long Lake on 15 July. During late July, numerous large flocks of eiders were observed flying northwest (Appendix II), and no eiders were in evidence during August.

Red-breasted mergansers (Mergus serrator) were observed on 5 occasions from 10 June through 8 July. The largest group seen was a flock of 6 loafing along the shoreline of West Long Lake on 5 July.

Jaegers

Movements of jaegers were apparent in the vicinity from 4 June through 10 July (Appendix II). Eastward-bound flocks of 8 to 25 pomarine jaegers (Stercorarius pomarinus) were observed on 6

occasions during that period. Flocks of long-tailed jaegers (S. longicaudus) were observed on only 2 occasions, on 11 June (6) and 14 July (5). Parasitic jaegers (S. parasiticus) were frequently observed in the area throughout the summer, and 1 pair nested approximately 2 km north of camp.

Other birds

Short-eared owls (Asia flammeus) were seen on 8 occasions up to 23 June and not observed after that date, while snowy owls (Nyctea scandiaca) remained in the vicinity as late as 26 July. A single peregrine falcon (Falco peregrinus) was observed sitting on upland tundra near camp on 1 July. Ptarmigan were not observed after 8 July, and were infrequently observed prior to that date.

Shorebirds observed on only 1 occasion included a buff-breasted sandpiper (Tryngites subruficollis) on 10 June, a Baird's sandpiper (Erolia minutilla) on 1 July, and a bar-tailed godwit (Limosa lapponica) on 6 July. Phalaropes began flocking in mid-July, and flocks of pectoral sandpipers (Erolia melanotos) were frequent after mid-July. Flocks of shorebirds were present in the area as late as 8 August.

Passerines

Snow buntings (Plectrophenax nivalis) were in evidence throughout the summer, and were first observed coming into winter plumage on 8 August. Savannah sparrows (Passerculus sandwichensis) were observed on 2 occasions, 6 June and 8 August. Redpolls (Acanthis sp.) occurred in the area from 7 June through

19 June. On 8 June, 2 tree sparrows (Spizella arborea) visited the camp. The male perched on a tent and sang long enough to be photographed. On 3 August a barn swallow (Hirunda rustica) was observed feeding on flying insects near camp and perching in crates out of the wind.

Breeding and Production

Table 3 presents information gathered on nesting and production during 1980. Discussion here will be limited to loons, black brant and pintails.

On 2 occasions when red-throated loons (Gavia stellata) were flushed from nests by observers, parasitic jaegers flew to the nest and proceeded to eat 1 of 2 eggs. In both cases, observers chased the jaeger from the nest and removed the damaged egg. Neither of the nests was revisited to determine if the remaining egg was successfully hatched. A third red-throated loon remained lying flat on its nest while an observer passed within 20 m several times.

Two arctic loon (G. arctica) nests were located in front of observation blinds. A chick was first observed on 21 July. The chick was observed regularly thereafter, being fed by or feeding with 2 adults. On 1 occasion an adult was observed driving pintails from the vicinity of the chick but black brant were observed feeding unmolested within several meters of the chick.

All nests of black brant were located on mossy islands in Class IV (deep-Arctophila) wetlands. At least 15 incubating females were observed in the straits of Goose Lake on 27 June.

Behavior of nesting black brant was observed during collection attempts. Three of 4 females remained on nests until the observer was within 20 m, and 2 of 4 ganders stayed near their mates at the observer's approach. When pairs left the nesting island, the females initiated attempts to return to the vicinity of the nest and ganders followed. In 1 instance when a female was collected from a nest, her mate attempted to join a second nesting pair and was repeatedly driven off by them.

Broods of black brant were sighted on or near West Long Lake on at least 5 occasions beginning on 10 July, swimming, feeding in lagoons or feeding in the moss zone inside lagoons. The smallest brood consisted of 1 gosling; the largest single brood observed contained 4 goslings. No broods were sighted near the straits of Goose Lake, and the fate of those nests was unknown. At least 5 nests of glaucous gulls were also located in the straits.

Pintail collections are summarized in Table 5; see Appendix V for individual data sheets and a map showing collection sites. The presence of breeding pairs facilitated collections, since larger flocks proved too wary to approach. Members of pairs collected on upland sites contained little food in esophagus and gizzard, even after up to 15 minutes of apparent feeding prior to collection. Possibly birds thought feeding were gathering grit. Analyses of esophageal and gizzard contents will be published elsewhere.

Early in June pintails concentrated in upland areas where snowmelt occurred first, especially along ice wedges and edges of Class I (Flooded Tundra), II (shallow-Carex) and III shallow-

Arctophila) ponds. As soon as larger, lower-lying wetlands and runoff lagoons contained water, pintails moved to those areas to feed and loaf. Pairs continued using territories in upland tundra into July, while flocks of unpaired birds moved to larger wetland complexes around Class IV (deep-Arctophila) ponds. By the end of July, no pintails were observed in upland tundra. Throughout the summer, a far greater number of pintails were seen in flooded Carex than in stands of Arctophila.

When pairs arrived at a feeding area, the female began feeding first and fed voraciously. Males commenced feeding a few minutes later and continued feeding after the females had ceased feeding. When disturbed by an observer, males resumed feeding more quickly and more frequently than females.

Breeding activities among pintail were evident early in June. Chase-flights, pairing, and site-attachment were observed frequently throughout June, and a copulation was observed on 16 June. The first nest was located on 18 June. A total of 5 nests were found, 4 in upland tundra interspersed with ice-wedge pools, Class I (Flooded Tundra) wetlands, and Class III (shallow-Arctophila) ponds. Clutches ranged up to 8 eggs. One female began a clutch in a shallow bowl wedged among Eriophorum tussocks, only 10 m from the camp, but abandoned the site after laying only 2 eggs.

No broods were observed, and no eggshells found contained membranes. Evidence of renesting attempts consisted of presence of a male in breeding plumage with a female on an upland territory

in mid-July, and a nest with 4 eggs located on the very shoreline of West Long Lake, on a mound of peat-mud, in mid-July.

Mammals

Caribou (Rangifer tarandus) were present in the area on 4 June when observers arrived. An estimated 50 cows with very young calves were observed from the helicopter within 10 km of the camp-site. The cows were either alone (with or without a calf) or in small, loose groups of 5 or fewer cows with calves. Several of the calves were apparently so young that the cows did not run at the approach of the helicopter but stood over their calves. The number of cows and calves observed on 4 June, and the frequency of observations of small, loose bands of cows and calves early in June indicated that the area around and north of West Long Lake is an important calving area. On 24 June, a dead cow was found approximately 2 km north of the camp. She apparently died during calving; head and front legs of the calf protruded, and the carcass appeared fresh and unmolested.

Cows and calves banded together by 22 June (see Appendix IV). On 30 June the first major movement of caribou was observed, and the presence of bulls in herds first recorded. The movement was northward. A large southward movement (roughly 400 to 500 animals) was noted on 4 July. After that, most observed herd movements were either northward or eastward (toward the coast) until 7 August when approximately 200 caribou moved south again. Movements correlated well with weather: on warm, calm days the herds moved briskly toward the coast and into the light breezes,

while on cool windy days the herds drifted inland (south and east) again, feeding along in a leisurely manner.

Arctic fox (Alopex lagopus) were observed 8 times during the summer. Seven dens were located, but only 2 appeared active, and no pups were seen. Apparent fox kills found included a very fresh male pintail in eclipse plumage, and a set of shorebird wings (probably phalarope). On 1 occasion 2 nesting parasitic jaegers dived repeatedly at a fox when it passed through their territory. An interaction between an arctic fox and molting geese will be described elsewhere (Simpson et al. in preparation)

Lemmings were observed 6 times during June and once in July, but none were identified to species.

Table 5. Pintail collections at East Long Lake, June 1980.

Collection Number	Date and time		Age	Sex	Weight (g)	Length of time observed feeding	Wetland Class	Testes (mm)		Follicles			Comments
								L	R	(1)	(2)	(3)	
1-80	10:40	8 June	Sy	M	784.1	15 minutes	I	50.5					Flock of 6; 3 female, 3 male.
5-80	10:00	12 June	Sy	M	884.0	10 minutes	I	51.0	51.0				Paired; good condition; lice.
7-80	14:27	13 June	Ad	M	856.2	7 minutes	lagoon	43.9	44.2				Paired, w/8-80; lice.
8-80	14:27	13 June	Ad	F	779.1	7 minutes	lagoon			29.8	15.0	9.5	Paired, w/7-80;
9-80	17:03	14 June	Ad	M	799.0	8 minutes	I	44.7	44.8				Pair, w/10-80;
10-80	17:03	14 June	Sy	F	805.2	8 minutes	I			54.2	16.5		Pair, w/9-80.
14-80	10:03	15 June	Ad	M	()	20 minutes	I	53.1	53.8				Paired; lice, cysts in pectoral muscle.
15-80	11:05	16 June	Sy	M	947.5	10 minutes	lagoon	40.8	40.9				Paired; copulated about 2 min. prior to collecting.
26-80	13:30	20 June	Sy	F	866.4	7 minutes	II			No large follicles			Paired
29-80	11:13	23 June	Ad	M	831.6	12 minutes	ice wedge	25.0	25.3				With 1 female and 1 male. Evidence of molt on belly, breast, neck.

LITERATURE CITED

- Derksen, D. V., W. D. Eldridge, and T. C. Rothe. 1979. Waterbird and wetland habitat studies. Pp. 229-311 in National Petroleum Reserve in Alaska Work Group 3, Studies of selected wildlife and fish and their use of habitats on and adjacent to the National Petroleum Reserve in Alaska 1977-1978. Vol. 2. U.S. Dept. Interior National Petroleum Reserve in Alaska 105(c) Land Use Study, Anchorage, Alaska. 423 pp.
- Rothe, T. C., M. R. Ryan, and T. S. Taylor. 1978. Waterbird populations and wetland habitats at Teshekpuk Lake study site. U.S Fish and Wildlife Service, Special Studies. Mimeo. Anchorage, Alaska.
- Taylor, E. J., S. G. Simpson, and M. S. Bromley. 1980. Waterbird populations and wetland habitats at Goose Lake study site, 1979. U.S. Fish and Wildlife Service, Special Studies. Mimeo. Anchorage, Alaska.

APPENDIX I

Chronology data, East Long Lake 1980

Camp:

East Long Lake

CHRONOLOGY CHART JUNE

Personnel: S

Date	Status	6/4	6/5	6/6	6/7	6/8	6/9	6/10	6/11	6/12	6/13	6/14	6/15	6/16	6/17	6/18	6/19	6/20	6/21	6/22	6/23	6/24	6/25	6/26	6/27	6/28
Yellow-billed loon	NB				1									1							1					1
Arctic loon			4						2		2	2	2	4	X	X	X	X	X	2	5	X	X	X	X	X
Red-throated loon									1	1	8		4	2	6	X	X	X	X	2	2	X	X	X	X	X
Whistling swan	NB												7	1	4		1		2			2		1	4	
Canada goose	NB				3	2	208	50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Lesser snow goose	NB				1									7*	1				7					50		10
Black brant		1			X	X		X	X	X	2			1	35	9	N(4)	N(5)	5		2	4	3		-65	25
White-fronted goose		X	X	X	X	X		X	X	X	X	X	4	7	9	3	4	2	6		6	15		4	14	5
Pintail		X	X	X	X	X		X	X	X	X	X	X	X	X	N(4)	X	X	X	X	X	X	X	X	X	X
Mallard	X																									
American wigeon	NB							12																	14	
Common eider	NB																									
King eider	NB				X			4	4		15	17	4	8	2									1		9
Spectacled eider				4				3	3	4	2	4	4	5	4	N(5)	3	2	3		6	3		2	4	2
Oldsquaw		100	X		5			10	X	X	X	X	X	X	X	X	X	X	X	X	N	X	X	X	X	X
Black scoter																										
Surf scoter																										
Red-breasted merganser	NB							2							3		2									
Amer. golden plover				X		1		X	X	X	X	X	X	X	X	X	X	X	X		N	X	X	X	X	X
Black-bellied plover	NB				X	X		X	X			X		2				2			1					
Ruddy turnstone		1	1	X		X					2			1	2						2					1
Buff-breasted sandp.	NB							1																		
Pectoral sandpiper					X	X	X	X	X	X	X	X	X	X	X	X	X	N(2)	N(2)	X	X	X	X	X	X	X
Dunlin		X	X		X	X	X	X	X	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Baird's sandpiper	NB													1?	2?											
Semipalmated sandpiper		X	X	X	X	X	X	X	X	N(2)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Red phalarope					X	X	X	X	X	X	X	X	X	X	X	N(4)	X	X	X	X	X	X	X	X	X	X
Northern phalarope					X	X		X	X				X	X	X	X	X	X	X		X	X		X	X	X
Pomarine jaeger	NB	X	X	2		X	X	X	X	X	X		1	1						8	2		8	3		2
Parasitic jaeger				1				X	X	X	X	4	4	4	2		4	X	X	1	5	2	4	2	4	6
Long-tailed jaeger	NB								6		1				1										1	
Glaucous gull		X	X	X		X	X	X	X	X	X		4	3	7	X	X	X	X	2	X	X	2	X	X	X
Sabine's gull					1		X	X	X	X	X	X	X	X	N(2)	X	X	X	X		X	X	4	X	X	X
Arctic tern				1	2	2	X	X	3		X(2)		2	4	X	X	X	X	X	2	X	X	2	X	X	X

Status: N=nest, E=egg, B=breeding behavior, Y=young M=molting

*4 blue!!

APPENDIX I

[illegible][illegible]

Date	Status	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	23
Yellow-billed loon											1	2	1	2	1	2		1							
Arctic loon		N	X	X	X	X	X		X	X	X	X	X	X	X	X		X	X	X			X	Y(1)	
Red-throated loon		N ²	X	X	X	X	X	3	X	X	X	X	X	X		X	X	X	X						1
Whistling swan			8	2	2					1			2		3	9									
Canada goose		X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	12/17 23/24
Lesser snow goose		8		13				6	7		8		8					6	8					9	
Black brant		~300	~115	~150	~150		→	250	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
White-fronted goose		9	50	6	9		1								9 ¹⁵		2	3					2		
Pintail		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X
Mallard																									
American wigeon																									
Common eider																		10 ⁷							
King eider		4						5					3 ⁹		3 ⁹								7 ⁵⁰	2 ²	→ prob. spec. at 20 ⁹ but 1
Spectacled eider			2				5										5 ⁸	1 ⁸							
Oldsquaw		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Black scoter																									
Surf scoter																									
Red-breasted merganser								6			1														
Amer. golden plover		X	X	X	X	X	X	1	2	X	X	X	X	X		X		X	X	X			X	X	X
Black-bellied plover			3			2						2	2			X				4			X		
Ruddy turnstone		4	2	1					2		1		3	1		3		1	1	2					
Buff-breasted sandp.																									
Pectoral sandpiper		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dunlin		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Baird's sandpiper				1																					
Semipalmated sandpiper		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
Red phalarope		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
Northern phalarope		X	X	X								X	X					X	X						
Pomarine jaeger														2											
Parasitic jaeger		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Long-tailed jaeger		1	1								2		4			3	5		1						4
Glaucous gull		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X
Sabine's gull		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X
Arctic tern		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X

Status: N=nest, E=egg, B=breeding behavior, Y=young

Camp: EAST LONG LAKE 1980

Date	Status	6/29	6/30	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	17	18	19	20	21	22	23
Snowy owl				1					1	1	1		1						1			1	1	1		
Short-eared owl																										
Common raven																										
Lapland longspur		X	X	X	X	X	X	X	X	X	X	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Snow bunting						1	1			1			1	1		1	1									
White-winged scoter	NB	1																								
Greater scaup			2	4											1	9	9		2				5			
Long-billed dowitcher			X	2		2	1		2		3	1	4		1	1			1							
Peregrine falcon	NB			1			1						poss													
Ptarmigan		2		1							2															
Bar-tailed godwit	NB								1																	
Lenning								1																		
Arctic fox													1						1							
Caribou		X	X*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				3			
Caribou calves		X	X	X						X	X	X	X	X									3			

*9/30 \geq 225 N of Drop L.
 ~ 125 S of camp; bulls (young) & yearlings.

GS	EL	LW	MH	JM

* fängt an

Camp: E.L.L. 1980

[illegible]

$x = \text{water plane area}$
 $y = \text{depth}$

APPENDIX II

Bird migration data, East Long Lake 1980

BIRD MIGRATION DATA - Long Lake 1980

STUDY AREA: E. Long Lake

1980

DATE/TIME	SPECIES	FLOCK SIZE	DIRECTION	ACTIVITY
June 4	Pom. jaeger	10	→ E	flying
"	oldsquaw	~100	→ E	" low
"	pintail	11	→ E	"
June 10	Am. wigeon	12	→ S	flying
June 11	Pom. jaeger	~20	→ E	flying
"	"	12	→ SE	"
June 22	Pom. jaeger	8	→ E	"
June 25	Pom. jaeger	8	→ E	"
June 27	Pectoral sandpipers	15	Not travelling. Feeding edge of III / upl. tundra.	
July 10	— jaegers	~25	→ S or SE	flying, hunting, then landed along shore of V N.E. Long
July 12	oldsquaw	~50	→ N	flying
"	gr. scamp	9	→ NW	"
July 14	long-tailed jaeger	5	→ NW	over W. Long
July 21	spec? sider	~490♂, 1♀	→ NW	over E. Long
July 28	siders	~600	→ NW ^{pm 1:00}	over II's N. E. Long
"	spec? "	~400	→ NW ^{pm 1:30}	" —
"	"	~150	→ NW ^{pm 1:45}	" —
"	king siders	~300	→ NW ^{pm 8:30}	over W. Long
"	"	~300	→ NW ^{pm 12:00}	" —
"	♂ siders	~100??	→ NW ^{pm 11:30}	over E. Long
3 Aug.	pintail	25	→ SE	" —
"	"	~20	→ SE	" —
2 Aug.	"	31	→ E	Caribou I.
"	"	9	→ E	"
"	"	5	→ N	"
"	"	4	→ N	"
7 Aug	white winged scoter	~20	→ NW	over E. Long

APPENDIX III

Goose flocks, East Long Lake 1980

DATE	TIME	SPECIES	NUMBER	LOCATION	HABITAT	AGE COMP., ACTIVITY, ETC.
Up to 9 June		small groups of wh. fronts, ad + imm., ≤ 6				just flying around.
8 June	-	brant	6	N of Haring	upl. tundra	flying NW
"	-	"	8	"	"	"
"	-	"	4	"	"	" S
10 June	9 pm	Canada	28	End of ridge	upl. tundra melt. ice ridge pools	resting, walking, ...
12 June		"	16	→		
23/6	2100-2200	Canadas	~200	Caribou Lake	→	swimming as the flightless. Many 1 st + 2 nd on E. shoreline
24/6	~1500	Wh. front	9	betw. Sq. L. + IV's. Sx 17	upland	flying
25/6	15.30	Canadas	~100	betw. Caribou L. + W. Long	moat, lagoon upland, ice	were feeding, went to water, swam to ice, walked across ice (~40). Some flew W, some to Caribou L.
26/6	11.00	Lesser Snow geese	~50	E.L.L. camp		Flying E.
26/6		Canadas	~200	Caribou L.		swimming, acting molty.
27/6		brant	6			flying toward East Long from Goose L.
29/6	20.00 22.00	Canadas brant	13			flying West over N end Caribou Lake
"	21.00	"	12			flying East over N end W. Long L.
30/6	a.m.	white-fronts	9			flying S over upl. tundra ahead of 206L copter. ~1000'
1/7	1200	lesser snow geese	13			flying W over upl. tundra N of W. Long L.
1/7	"	brant	12			feeding moss z. lagoon N. end W. Long then flew W across lake.
"	"	white-fronts	6			flying NW over lagoon N. end W. Long

East Long Lake 1980

[illegible]

APPENDIX IV

Caribou observations, East Long Lake 1980

CARIBOU OBSERVATIONS -

Study area: En- ...

[illegible]

APPENDIX V

Pintail collections and mapping of collection sites, East Long Lake 1980

Specimen collection

1. Specimen no. 1-80 3. Collector S.G. Simpson
 2. Bird species pintail 4. Date/time 8 June 1980 - 10:40 a.m.
 5. Sex ♂ 6. Age 1 yr 7. Weight 784.1 g
 8. Activity (feeding, staging, etc.) feeding intermittently, walking, alert
9. Total length of time observed feeding ~15 min
 10. Number of dives per unit time N/A
 11. Mean length of time spent under water N/A
 12. Mean length of time between dives N/A
 13. Flock size 6 composition 3♂ 3♀
 14. Collection site:
 A. Wetland class I H. Percent vegetative cover -
 B. Water depth 20 cm
 C. Sediment depth -
 D. Turbidity -
 E. Temperature -
 F. Percent ice cover 20 % I. % Salinity -
 G. Distance from shore N/A J. Conductivity -
15. Specimen:
 A. Diagonal tarsus _____ B. Right wing (flat) _____
 C. 9th primary: left _____ right _____
 10th primary: left _____ right _____
 D. Culmen _____ E. Bill width (nare) _____
 F. Bursa length (dissected) _____
 G. Gizzard weight (empty) _____
 H. Liver weight _____
 I. Pectoral muscle weight _____
 J. Gonad: male: lwx testes: left 50.55 right _____
 female: dia. follicle 1 _____ 2 _____ 3 _____
16. Parasite sample _____ 17. Skin prepared _____
 18. Weather clear, lt. wind (≤10 k) SW.
 19. Other Site was ^E side of ridge between E & W Long lakes, at N end, dry upland tundra, melting hi-center polygon area.

Specimen collection

1. Specimen no. 5-80 3. Collector S.G. Simpson
2. Bird species Pintail 4. Date/time 12 June 10 a.m.
5. Sex ♂ 6. Age 1 yr. 7. Weight 884.0 g
8. Activity (feeding, staging, etc.) feeding in flooded low-center
pygmy area

9. Total length of time observed feeding 10 min.
10. Number of dives per unit time -
11. Mean length of time spent under water -
12. Mean length of time between dives -
13. Flock size pair composition 1 ♂, 1 ♀
14. Collection site:

A. Wetland class I H. Percent vegetative cover -
B. Water depth ~ 20 cm
C. Sediment depth -
D. Turbidity -
E. Temperature -
F. Percent ice cover - I. % Salinity -
G. Distance from shore - J. Conductivity -

15. Specimen:

A. Diagonal tarsus - B. Right wing (flat) -
C. 9th primary: left - right -
10th primary: left - right -
D. Culmen - E. Bill width (nare) -
F. Bursa length (dissected) -
G. Gizzard weight (empty) -
H. Liver weight -
I. Pectoral muscle weight -
J. Gonad: male: lwx testes: left 5/mm right 5/mm
female: dia. follicle 1 - 2 - 3 -

16. Parasite sample lice 17. Skin prepared -

18. Weather overcast, fog clearing, wind NW → NE < 10

19. Other Good condition - fat.

Specimen collection

1. Specimen no. 9-80 3. Collector S.G. Simpson
2. Bird species pintail 4. Date/time 14 June 17.03
5. Sex ♂ 6. Age ad. 7. Weight 798.95 g
8. Activity (feeding, staging, etc.) feeding in ditches of ice-wedges, between lacustrine polygons.
9. Total length of time observed feeding 8 min.
10. Number of dives per unit time _____
11. Mean length of time spent under water _____
12. Mean length of time between dives _____
13. Flock size 2 composition 1 ♂, 1 ♀ (w/ #10-80)
14. Collection site:
A. Wetland class I H. Percent vegetative cover _____
B. Water depth 8" _____
C. Sediment depth _____
D. Turbidity _____
E. Temperature _____
F. Percent ice cover _____ I. % Salinity _____
G. Distance from shore _____ J. Conductivity _____
15. Specimen:
A. Diagonal tarsus _____ B. Right wing (flat) _____
C. 9th primary: left _____ right _____
10th primary: left _____ right _____
D. Culmen _____ E. Bill width (nare) _____
F. Bursa length (dissected) _____
G. Gizzard weight (empty) _____
H. Liver weight _____
I. Pectoral muscle weight _____
J. Gonad: male: lwx testes: left 44.7^{mm} right 44.8^{mm}
female: dia. follicle 1 _____ 2 _____ 3 _____
16. Parasite sample _____ 17. Skin prepared _____
18. Weather overcast, cool, wind ENE-10.
★ 19. Other Proventriculus + esophagus contained very little - a few bits of gravel + vegetation, + 2 insects (chironomids?) - by mistake all in same vial w/ gizzard contents.

Specimen collection

1. Specimen no. 7-80 3. Collector S.G. Simpson
2. Bird species pintail 4. Date/time 13 June 14:27
5. Sex ♂ 6. Age ad 7. Weight 856.2 g
8. Activity (feeding, staging, etc.) feeding in ~~land~~ lagoon NW corner
of W Long Lake
9. Total length of time observed feeding 7 min, feeding voraciously
10. Number of dives per unit time _____
11. Mean length of time spent under water _____
12. Mean length of time between dives _____
13. Flock size 2 composition 1 ♂, 1 ♀ (w/8-80)
14. Collection site:
A. Wetland class I H. Percent vegetative cover 75-95%
B. Water depth ~ 10"
C. Sediment depth _____
D. Turbidity _____
E. Temperature _____
F. Percent ice cover _____ I. % Salinity _____
G. Distance from shore _____ J. Conductivity _____
15. Specimen:
A. Diagonal tarsus _____ B. Right wing (flat) _____
C. 9th primary: left _____ right _____
10th primary: left _____ right _____
D. Culmen _____ E. Bill width (nare) _____
F. Bursa length (dissected) _____
G. Gizzard weight (empty) _____
H. Liver weight _____
I. Pectoral muscle weight _____
J. Gonad: male: lwx testes: left 43.9 mm right 44.2 mm
female: dia. follicle 1 _____ 2 _____ 3 _____
16. Parasite ~~sample~~ live 17. Skin prepared _____
18. Weather overcast, lt wind NNE, cool
19. Other _____

Specimen collection

1. Specimen no. 8-80
2. Bird species pintail
3. Collector S.G. Simpson
4. Date/time 13 June 14:27
5. Sex ♀
6. Age ad
7. Weight 779.1g
8. Activity (feeding, staging, etc.) feeding in flooded lagoon NW corner of W. Long Lake.
9. Total length of time observed feeding 7 min.
10. ~~Number of dives per unit time~~ Dabbled intermittently; much less than ♂
11. Mean length of time spent under water _____
12. Mean length of time between dives _____
13. Flock size 2 composition (pr.) (w/7-80)
14. Collection site:
 - A. Wetland class I
 - B. Water depth ~10"
 - C. Sediment depth _____
 - D. Turbidity _____
 - E. Temperature _____
 - F. Percent ice cover _____
 - G. Distance from shore _____
 - H. Percent vegetative cover 75-85%
 - I. % Salinity _____
 - J. Conductivity _____
15. Specimen:
 - A. Diagonal tarsus _____
 - B. Right wing (flat) _____
 - C. 9th primary: left _____ right _____
 - 10th primary: left _____ right _____
 - D. Culmen _____
 - E. Bill width (nare) _____
 - F. Bursa length (dissected) _____
 - G. Gizzard weight (empty) _____
 - H. Liver weight _____
 - I. Pectoral muscle weight _____
 - J. Gonad: male: - lwx testes: left _____ right _____
female: dia. follicle 1 29.8 mm 2 15.0 mm 3 2 @ 9.5 mm
16. Parasite sample _____
17. Skin prepared _____
18. Weather overcast, lt wind NNE, cool
19. Other _____

Specimen collection

1. Specimen no. 10-80 3. Collector S.G. Simpson
2. Bird species pintail 4. Date/time 14 June 17.03
5. Sex ♀ 6. Age 1 yr. 7. Weight 805.2 g
8. Activity (feeding, staging, etc.) feeding in ditches of ice-wedges,
I-Type between polygons
9. Total length of time observed feeding 8 min.
10. Number of dives per unit time _____
11. Mean length of time spent under water _____
12. Mean length of time between dives _____
13. Flock size 2 composition 1♂, 1♀ (w/# 9-80)
14. Collection site:
A. Wetland class I H. Percent vegetative cover _____
B. Water depth 8" _____
C. Sediment depth _____
D. Turbidity _____
E. Temperature _____
F. Percent ice cover _____ I. % Salinity _____
G. Distance from shore _____ J. Conductivity _____
15. Specimen:
A. Diagonal tarsus _____ B. Right wing (flat) _____
C. 9th primary: left _____ right _____
10th primary: left _____ right _____
D. Culmen _____ E. Bill width (nare) _____
F. Bursa length (dissected) _____
G. Gizzard weight (empty) _____
H. Liver weight _____
I. Pectoral muscle weight _____
J. Gonad: male: lwx testes: left _____ right _____
female: dia. follicle 1 54.2 2 16.5 3 _____
16. Parasite sample _____ 17. Skin prepared _____
18. Weather Overcast, cool, wind ENE 10
19. Other _____

Specimen collection

1. Specimen no. 14-80 3. Collector S.G. Simpson
2. Bird species pintail 4. Date/time 15 June 10:03
5. Sex ♂ 6. Age ad(?) 7. Weight _____
8. Activity (feeding, staging, etc.) feeding along edges of ice-
wedge pools and in I low-center polygons.
9. Total length of time observed feeding 20 min.
10. Number of ~~dive~~s per unit time intermittent, alt. w/ ♀
11. Mean length of time spent under water _____
12. Mean length of time between dives _____
13. Flock size 2 composition 1♂, 1♀
14. Collection site:
A. Wetland class I H. Percent vegetative cover varied
B. Water depth _____
C. Sediment depth _____
D. Turbidity _____
E. Temperature _____
F. Percent ice cover _____ I. % Salinity _____
G. Distance from shore _____ J. Conductivity _____
15. Specimen:
A. Diagonal tarsus _____ B. Right wing (flat) _____
C. 9th primary: left _____ right _____
10th primary: left _____ right _____
D. Culmen _____ E. Bill width (nare) _____
F. Bursa length (dissected) _____
G. Gizzard weight (empty) _____
H. Liver weight _____
I. Pectoral muscle weight _____
J. Gonad: male: lwx testes: left 53.1 right 53.8
female: dia. follicle 1 _____ 2 _____ 3 _____
16. Parasite sample lice, cysts* 17. Skin prepared _____
18. Weather clear, H. wind ENE, cool.
19. Other *several preserved in breast muscle

Specimen collection

1. Specimen no. 15-80
2. Bird species Pintail
3. Collector S.G. Simpson
4. Date/time 16 June 11:05
5. Sex ♂
6. Age 1yr.
7. Weight 947.5g (wet)
8. Activity (feeding, staging, etc.) feeding in runoff lagoon where
caribou l. drains into W. lagoon
9. Total length of time observed feeding 10 min.
10. Number of dives per unit time _____
11. Mean length of time spent under water _____
12. Mean length of time between dives _____
13. Flock size 2 composition pr. (1♂, 1♀)
14. Collection site:
 - A. Wetland class _____
 - B. Water depth varied
 - C. Sediment depth _____
 - D. Turbidity _____
 - E. Temperature _____
 - F. Percent ice cover _____
 - G. Distance from shore _____
 - H. Percent vegetative cover varied
 - I. % Salinity _____
 - J. Conductivity _____
15. Specimen:
 - A. Diagonal tarsus _____
 - B. Right wing (flat) _____
 - C. 9th primary: left _____ right _____
 - 10th primary: left _____ right _____
 - D. Culmen _____
 - E. Bill width (nare) _____
 - F. Bursa length (dissected) _____
 - G. Gizzard weight (empty) _____
 - H. Liver weight _____
 - I. Pectoral muscle weight _____
 - J. Gonad: male: lwx testes: left 40.8^{mm} right 40.9
female: dia. follicle 1 _____ 2 _____ 3 _____
16. Parasite ~~sample~~ lice
17. Skin prepared _____
18. Weather clear, sunny, warm, lt breeze ENE
19. Other _____

Specimen collection

1. Specimen no. 26-80 3. Collector S.G. Simpson
2. Bird species pintail 4. Date/time 20 June 13:30
5. Sex ♀ 6. Age _____ 7. Weight 866.4 g
8. Activity (feeding, staging, etc.) feeding

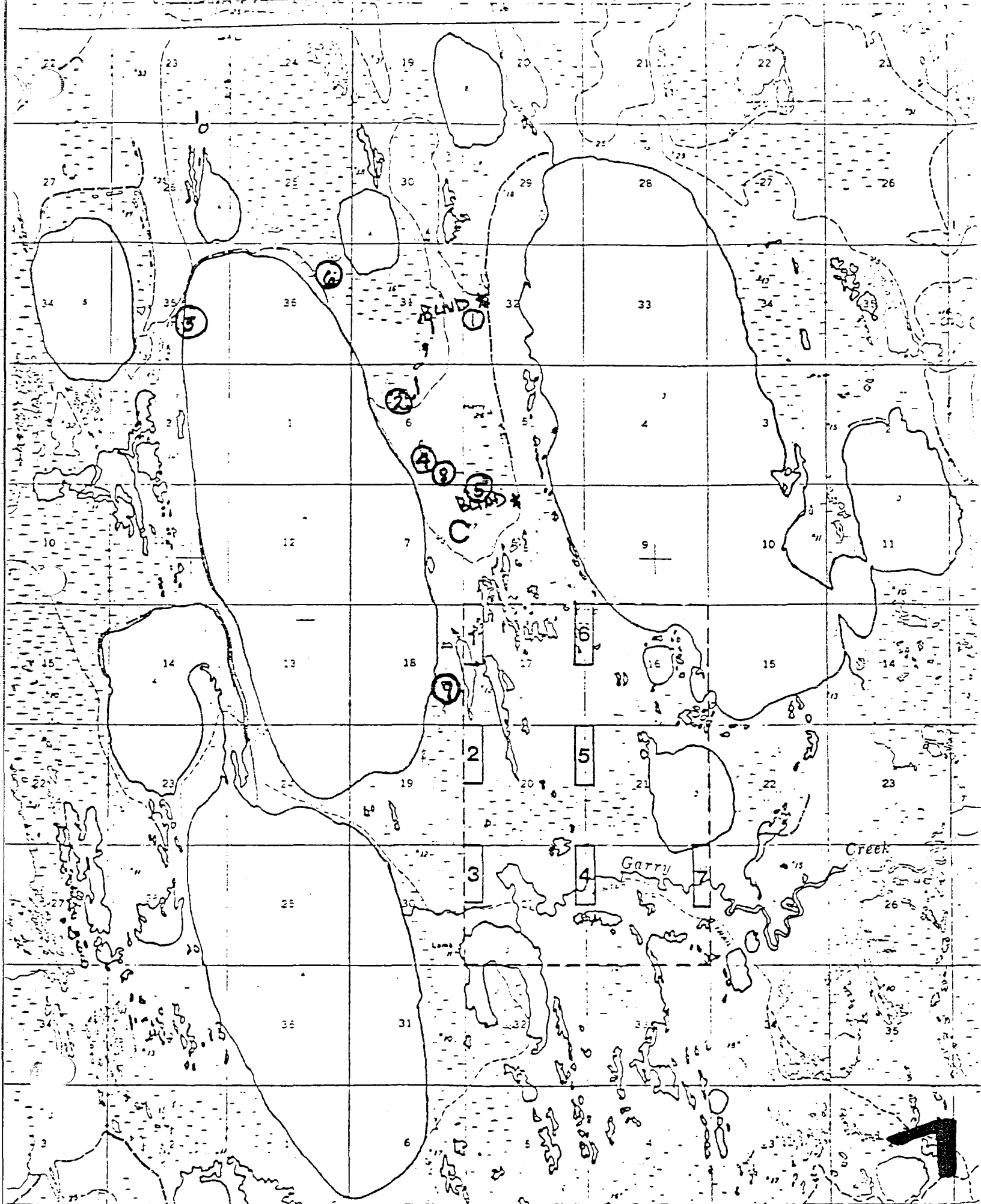
9. Total length of time observed feeding _____
10. Number of dives per unit time _____
11. Mean length of time spent under water _____
12. Mean length of time between dives _____
13. Flock size _____ composition _____
14. Collection site:
A. Wetland class _____ H. Percent vegetative cover _____
B. Water depth _____
C. Sediment depth _____
D. Turbidity _____
E. Temperature _____
F. Percent ice cover _____ I. % Salinity _____
G. Distance from shore _____ J. Conductivity _____
15. Specimen:
A. Diagonal tarsus _____ B. Right wing (flat) _____
C. 9th primary: left _____ right _____
10th primary: left _____ right _____
D. Culmen _____ E. Bill width (nare) _____
F. Bursa length (dissected) _____
G. Gizzard weight (empty) _____
H. Liver weight _____
I. Pectoral muscle weight _____
J. Gonad: male: lwx testes: left _____ right _____
female: dia. follicle 1 _____ 2 _____ 3 _____
16. Parasite sample _____ 17. Skin prepared _____
18. Weather _____

19. Other _____

Specimen collection

1. Specimen no. 29-80
2. Bird species ptarmigan
3. Collector S.G. Simpson
4. Date/time 23 June 11.13
5. Sex ♂
6. Age adult
7. Weight 831.6 g
8. Activity (feeding, staging, etc.) feeding along edges of ice-wedge pool directly behind E.L.L. camp -
9. Total length of time observed feeding 12 min.
10. Number of dives per unit time _____
11. Mean length of time spent under water _____
12. Mean length of time between dives _____
13. Flock size 3 composition 2♂, 1♀
14. Collection site:
 - A. Wetland class ice-wedge
 - B. Water depth varied
 - C. Sediment depth _____
 - D. Turbidity _____
 - E. Temperature _____
 - F. Percent ice cover _____
 - G. Distance from shore _____
 - H. Percent vegetative cover varied
 - I. % Salinity _____
 - J. Conductivity _____
15. Specimen:
 - A. Diagonal tarsus _____
 - B. Right wing (flat) _____
 - C. 9th primary: left _____ right _____
 - 10th primary: left _____ right _____
 - D. Culmen _____
 - E. Bill width (nare) _____
 - F. Bursa length (dissected) _____
 - G. Gizzard weight (empty) _____
 - H. Liver weight _____
 - I. Pectoral muscle weight _____
 - J. Gonad: male: 1xw testes: left 25.0mm right 25.3 - small!
female: dia. follicle 1 _____ 2 _____ 3 _____
16. Parasite sample _____
17. Skin prepared _____
18. Weather overcast, calm
19. Other Many new feathers coming in on belly, breast, & back of neck.

LOCATION OF BLINDS



○=PINTAIL COLLECTION SITES