

# **ALASKA LOON WATCH**

## **1989**



**ALASKA DEPARTMENT OF FISH AND GAME**

**DIVISION OF WILDLIFE CONSERVATION**

**NONGAME WILDLIFE PROGRAM**

ALASKA DEPARTMENT OF FISH AND GAME  
JUNEAU, ALASKA

STATE OF ALASKA  
Steve Cowper, Governor

DEPARTMENT OF FISH AND GAME  
Don Collinsworth, Commissioner

DIVISION OF WILDLIFE CONSERVATION  
W. Lewis Pamplin, Jr., Director

ALASKA LOON WATCH 1989

by  
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NONGAME WILDLIFE PROGRAM REPORT

July, 1990

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## ALASKA LOON WATCH 1989

### SUMMARY

Of the 21 states with historical records of breeding Common Loons (*Gavia immer*), only Alaska and Minnesota have substantial populations of loons remaining. Generally, the distribution of Common Loons in North America has shrunk to more remote areas as human populations have increased. Anchorage is the largest city in North America to still have nesting loons (both Common and Pacific, *G. pacifica*), yet disturbance and loss of nesting habitat threaten their future.

In 1985, ADF&G began loon surveys in Anchorage, and in subsequent years expanded these surveys to include some areas of the Matanuska-Susitna (Mat-Su) Valley and Kenai Peninsula with the help of volunteers. In 1989 with the help of 171 volunteers, ADF&G collected observations from 25 Anchorage area lakes and 144 Mat-Su Valley lakes and ponds between Sutton and Willow, and 81 lakes in other areas of Mat-Su Valley and the Kenai.

The numbers of loon chicks surviving per breeding pair in these areas usually have been within ranges to sustain a stable population. However, the number of breeding loons remaining in Anchorage is low, and disturbance and habitat loss may be reducing the numbers of breeding loons in other accessible areas of southcentral Alaska.

ADF&G has posted or provided signs for posting at some loon nesting lakes in order to reduce human disturbance to breeding pairs and their young. Maps of loon nesting areas recorded by ADF&G staff and submitted by volunteers for the last four years are being compiled to identify areas in need of protection. Artificial nesting islands were built by volunteers for loons on Flat, Big, Wasilla, High Ridge, and Seventeenmile lakes, but only two were used for nesting by Common Loons.

A UAF graduate student's study of Mat-Su lakes with varying amounts of use by loon continued this year. Preliminary results indicate that the key differences between lakes with successfully nesting loons and those with little or no use by loons include the abundance of small fish (e.g. stickleback), the amount of shallow water, and the presence of nesting Bonaparte's Gulls.

The Loon Watch is continuing in 1990 with the help of volunteers, and plans call for expand efforts to protect loon nests from disturbance and development. Observations from lakes throughout southcentral Alaska, especially those with road access, will be sought.

## INTRODUCTION

Loons are significant and popular components of Alaska's wildlife because of their size, beauty, haunting vocalizations and population status. The distribution of Common Loons in North America has shrunk to more remote areas as human populations have increased in loon nesting areas (Klein 1985). Thirteen of 21 states with historical records of breeding Common Loons either no longer have breeding loons or have greatly reduced populations (McIntyre 1988). Of the eight remaining states, only Minnesota and Alaska still have substantial numbers of breeding Common Loons. In addition, Alaska is host to the other four species of loons found in the world - Pacific (*G. pacifica*), Arctic (*G. arctica*), Red-throated (*G. stellata*) and Yellow-billed (*G. adamsii*). Pacific Loons formerly were considered a subspecies of the Arctic Loon.

Loon population declines in other states have been related to habitat loss, disturbance and shooting (McIntyre 1986). The growing human population in Anchorage and in the nearby Matanuska-Susitna (Mat-Su) Valley during the 1970's and 1980's substantially increased development and disturbance on loon nesting lakes. This led to concern about the future of breeding loons in these areas.

To assess the distribution and nesting success of loons on Anchorage's lakes, ADF&G began surveys in the summer of 1985 (Tankersley 1986). Later, the survey area was expanded to lakes along the road system in the Mat-Su Valley between Sutton and Willow (including parts of Point McKenzie). Since 1986, the survey has grown to include observations from more than 225 Mat-Su and Kenai lakes, with the help of up to 171 volunteers (Tankersley 1986, 1987, 1988). Each year the survey has included all 12 lakes used by loon pairs in the greater Anchorage area (Potter Marsh to Chugiak).

Based on contacts with wildlife agencies from all northern states and Canadian provinces, we have learned that Anchorage is the largest city (more than 240,000 people) in North America to have nesting loons. Lakes in Anchorage and the Mat-Su Valley have breeding populations of both Common and Pacific Loons. Red-throated Loons have been observed in Anchorage and the Mat-Su Valley, but no nesting has been documented in areas covered in the Loon Watch surveys. Generally in southcentral Alaska, Common Loons breed on lakes larger than 10 acres, Pacifics breed on lakes between 4.5 and 35 acres, and Red-throateds breed on small ponds, less than five acres.

Red-necked Grebes (*Podiceps grisegena*), similar fish-eating divers, are also common on lakes in Anchorage and the Mat-Su Valley, and are sometimes misidentified as loons. Although

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Red-necked Grebes (*Podiceps grisegena*), similar fish-eating divers, are also common on lakes in Anchorage and the Mat-Su Valley, and are sometimes misidentified as loons. Although nesting grebes also are subject to human disturbance, their

ability to use small ponds as well as large lakes, their relative abundance and their higher productivity puts their populations at less risk than loons.

#### STUDY AREA AND METHODS

In late April 1989, packets of self-addressed, stamped observation cards (Figs. 1 and 2) and instructions were distributed to observers. The packets included drawings of loons and grebes to aid in identification. Observers included lakeshore residents and other volunteer observers, and ADF&G employees.

During May, 62 lakes in the Mat-Su, Anchorage and Kenai National Wildlife Refuge (KNWR) with a recent history of breeding or territorial pairs of Common Loons were surveyed. This was done to check for late arrival of breeding birds, missing mates and presence of nesting activity.

Over the summer, observations were collected from 25 lakes in the Anchorage bowl area (Potter Marsh to Eklutna, Fig. 3). In addition, observations were collected from 144 lakes in the main Mat-Su Valley study area (along the road system from Sutton west to Willow including Pt. McKenzie, Fig. 3). Observations also were submitted by volunteers from 81 additional Mat-Su and Kenai lakes.

Observations were made at the lakes to determine, if possible: 1) the species and number of adult loons present; 2) the nest location (if accomplished without disturbance); and 3) the number and estimated size of loon chicks present. Chicks that were greater than half the size of the adult are considered "fledged" in summary tables, however this may not always be the case. Some older juveniles disappear before fledging, and some never fly off their natal lake, even during freeze-up.

Signs were posted at the public access points on several Anchorage and Mat-Su lakes to alert lake users to avoid disturbing the nesting loons (Fig. 4). Areas near Pacific Loon nesting sites on DeLong and Little Campbell were closed to fishing from May 15-July 15, and posted with shoreline and floating signs with rope barricades (Fig. 5). Other generic signs (Fig. 6) were floated in the water near loon nesting sites on Goose Lake in Anchorage, Anderson, Wolf, and Long (in Willow) lakes in the Mat-Su Valley, and posted on the nesting islands on Crystal Lake and Lake Lucille. In addition, artificial nesting islands were floated with nearby signs on Flat Lake, Big Lake, Horseshoe, Wasilla, High Ridge and Seventeenmile Lake in the Mat-Su Valley.

## RESULTS

### Anchorage

All 25 lakes in the greater Anchorage area with a history of use by loons were surveyed. Three nesting pairs of Common Loons and one residential territorial pair (no nesting) on four different lakes were documented this year (Table 1). Two chicks survived to fledging, resulting in a below average reproductive rate compared to the past four years (Table 3). Nest sites were located for all three pairs, two of them in traditional sites. Visiting or nonbreeding Common Loons were reported from four additional lakes (Table 1).

There were at least seven breeding pairs of Pacific Loons on seven lakes that fledged at least four chicks (Table 1). This resulted in a slightly below average reproductive rate compared to the past four years (Table 3). Nest sites were located for six of the seven pairs, including two used by one pair on Delong Lake (Table 1). Visiting or nonbreeding Pacifics were seen on an additional 11 lakes (Table 1).

There was an unusual circumstance of re-nesting following the loss of chicks by the pair on Delong Lake. Usually, loons will lay eggs again if they lose their first clutch, but not after losing chicks. However, the pair on Delong Lake did lay two eggs after losing both chicks (probably to a Bald Eagle, following a human disturbance). Although their second clutch was viable too, both chicks from the second clutch died within a week of hatching. One was excluded from the family group and disappeared, and one may have been eaten by a Bald Eagle.

There was no difference in the nesting success (66%) between loons breeding on lakes where signs and rope barricades were placed around the nest site and unposted nest sites (Table 1).

No Red-throated Loon observations were submitted from the Anchorage area this year.

### Matanuska-Susitna Valley, Sutton to Willow

Of 144 lakes surveyed, 41 breeding pairs of Commons were found on 40 lakes in the main Mat-Su study area (Tables 4, 6). A minimum of 28 and a maximum of 41 chicks fledged from these pairs, which resulted in a slightly lower than average reproductive rate compared to the previous three years (Table 6). Eleven lakes had territorial pairs but no nesting activity this year (Tables 5, 6). Three of the 11 (Memory, Scott and Visnaw) had territorial pairs for the second year in a row, and one (Beverly) had a territorial

pair for the fourth year in a row (Table 5). Individuals, pairs and groups of Common Loons (possible breeders and nonbreeders) were found on an additional 57 lakes.

Ten breeding pairs of Pacifics were found on 10 lakes in the study area (Tables 4, 6). Only five or six chicks fledged from these pairs, which was the lowest reproductive rate recorded for this species in the past three years (Table 6). One (nonbreeding) territorial pair was documented on a lake that had had successful breeders for the past three years (Table 5). Individuals, pairs and groups of Pacific Loons (possible breeders and nonbreeders) were found on an additional 30 lakes (Tables 4, 6).

Last year an adult Common Loon was shot on Long Lake, and another was found dead on Lake Lucille after ingesting two lead fishing sinkers. Both were presumably resident breeders. This year, breeding pairs of Common Loons were present on both of these lakes and raised one chick each.

Common Loons breeding on lakes with signs posted near their nest sites were slightly more successful at hatching chicks than pairs that did not have signs near their nest sites (75% vs. 69%).

Breeding pairs used artificial nesting islands on two of the six lakes where they were placed. Only the pair on Seventeenmile Lake were successful at hatching chicks. The pair on Flat Lake abandoned a nest with two eggs, and re-nested on a natural island and raised one chick.

A week-old chick died on Anderson Lake in Wasilla after being run over by a boat pulling water skiers. One of the breeding adults may have been injured at that time also, because an adult became trapped in the ice in the fall when it was unable to migrate. It eventually died in captivity after receiving some veterinary care.

To learn more about where loons migrate, an attempt was made to capture and tag Common Loons on Wolf and Cornelius lakes. However, this was unsuccessful. Two loons that were iced-in in the fall were captured, tagged with colored wing tags, and released. One was a juvenile Common Loon from Victory Bible Camp lake, released in Eagle River, and the other was an adult Common Loon from East Sunshine Lake in Talkeetna, released in Kodiak. The reason the juvenile became iced-in is unknown, but the adult was recovering from a shotgun wound in the wing. The veterinary prognosis for full recovery was good upon release. No sightings have been reported as of March, 1991.

Another loon, probably a juvenile Common, was in danger of becoming iced-in on Lynne Lake (Willow) during late October. However, with only 15' of open water, the loon crawled out



onto the ice and flew off directly from the ice, per volunteer observer Mary Lee Mayfield.

No Red-throated Loons were reported this year.

Although grebe observations were not solicited this year, a survey by volunteer Gary Nilson tallied 133 Red-necked Grebes on Big Lake on June 17. This is similar to results of his survey on May 28, 1988 which tallied 128 Red-necked Grebes.

#### Kenai

Loon observations for Kenai and Mat-Su lakes outside of the main study area are included in Table 7.

#### Oil Spill Surveys

All of the lakes in the Mat-Su area that had breeding Common Loons within the last two years again had territorial or breeding pairs present, except for three lakes in the Willow area (Table 8). Comparable recent breeding history was not known for lakes in the KNWR, however, breeding or territorial pairs were found on most of the lakes known to have breeding pairs during 1978-80 (Table 8). Also, the Common Loon population size on the KNWR between the late 1970's and 1989 was similar (Abadie 1989, unpub. rept.). So, there was no strong evidence that breeding loon populations in Anchorage and some areas of Mat-Su and Kenai were affected by the Exxon Valdez oil spill. This may be because loons killed in the spill did not breed in these areas.

### DISCUSSION AND FUTURE PLANS

#### Anchorage

Since the abandonment in the early 1980's of Turnagain Bog and Westchester Lagoon as nesting lakes for Pacific Loons (Table 2), few changes have occurred in the use of Anchorage lakes by loons. These changes include the loss of a pair of Pacific Loons on Edmonds Lake (present before 1985 as well, per Dan Severin, pers. comm.), the loss of a pair of Common Loons on Beach Lake, and the gain of a pair on Upper Sixmile (possibly the same pair transferring locations). A pair of Pacific Loons probably has nested at Potter Marsh for years, but documentation is sketchy and difficult to obtain.

Although Common Loon chick production was relatively low this year in Anchorage, successful nesting on Clunie Lake and the presence of a new territorial pair on Upper Sixmile may significantly reduce the vulnerability of this small local population in the future.

Pacific Loon chick production in Anchorage of 0.6 fledged chicks/pair was slightly below average for the past four years (0.65). However, it is still above the estimated minimum of 0.4-0.5 chicks/pair necessary to maintain a stable population of Arctic Loons in Scandinavia (once considered the same species as Pacific Loons) (Nilsson 1977).

Increasing public awareness and loon conservation efforts may be benefitting the maintenance of breeding loons in Anchorage. Although loon pairs on lakes that have signs and rope barricades around nest sites do not have a greater breeding success compared to those that do not have the signs, the amount of recreational use on the lakes with signs is much greater. So, signs are probably a benefit to breeding success.

#### **Matanuska-Susitna Valley, Sutton to Willow**

Although the known reproductive rate of Common Loons in the Mat-Su Valley in 1989 was slightly below the three-year average, it is still above the rate considered average in North America (0.5 chicks/pair per McIntyre 1988). Chick production by Commons on the Kenai National Wildlife Refuge, Alaska, an area of loon abundance, ranged from 0.30-0.67 chicks/pair (Smith 1981). The reproductive rates for Commons in the Mat-Su Valley have been near or above these rates in the past four years, so it can be assumed that the Mat-Su population is at least stable.

At least eleven pairs of Common Loons in the main Mat-Su study area maintained territories, but did not nest this year. Pairs on 10 of these lakes have nested at least one year of the past three years. Other studies have indicated that breeding pairs will maintain a territory but not nest about one year out of every four or five (Sutcliffe 1980, Strong et al. 1987). One lake of the eleven with territorial pairs, has not had a nesting pair in the past four years, and three others had territorial pairs for the second year in a row. Repeated occupation by territorial pairs without nesting activity may be a cause of concern indicating the loss of a nesting site, or lack of adequate food for chick rearing.

Pacific Loon production in the Mat-Su Valley was also the lowest recorded in four years, although the known rate for this year is still higher than the estimated minimum to sustain a stable population of Arctic Loons in Scandinavia (Nilsson 1977).

Although nesting pairs on lakes with signs near their nest sites appeared only slightly more successful at hatching

chicks than those pairs on lakes without the signs, other factors may have influenced this assessment of nesting success. These include the timing of observations, and the experience of the observer(s). Also, without the signs, the levels of disturbance could have been much greater, hindering nesting success even more.

Some changes have been observed in the use of nine lakes in the Mat-Su Valley out of 123 that have three or four years of data recorded. Three lakes have been "restored" as breeding lakes - Seventeenmile, Flat and Fuller. The first two were helped by the addition of artificial nesting islands, and the third appears to have been (re-)colonized by a breeding pair. Five lakes appear to have been abandoned by breeding pairs in recent years - Cottonwood, Kepler, Neklason, Behnke and Big Noluck. Human disturbance and/or loss of nesting sites could be the reasons for this abandonment. These lakes and others that have repeated use by territorial pairs only are good candidates for placement of artificial nesting islands. One lake (Bald Pond) has been abandoned by breeding Pacifics and replaced by breeding Commons, so not all abandonment is due to human factors.

A study was begun in 1988 by UAF graduate student Anne Ruggles to determine differences between lakes that had successfully nesting loons, and those that had little or no loon use. Preliminary results indicate that the amount of marshy shoreline, shallow water and the abundance of fish are key differences. So, many lakes without breeding loons may not contain suitable habitat for nesting or raising young.

Ruggles' study also revealed that successfully nesting loons often had a nearby nesting pair of Bonaparte's Gulls, which aggressively defended the area against hawks, eagles and owls, which prey on eggs or chicks. Loons appear to benefit from these gulls, which do not prey on loon eggs or chicks.

Protecting breeding habitat components (fish, clear water, marshy nest site, and a chick-rearing area) and controlling human disturbance are important for the future of breeding loons in these areas. Fishing restrictions, floating signs, and rope barricades near loon nest sites appear to have benefitted loon production on several lakes. Loons traditionally nest in the same area year after year (Strong et al. 1987). Protection of these traditional nest sites is important to maintaining breeding loons on lakes (Strong et al. 1987). More work with public and private landowners will continue to protect these sites.

The use of artificial nesting islands this year had mixed success. Artificial nesting islands do not attract new nesting pairs to a lake (McIntyre and Mathisen 1977), and may not induce nesting if other critical habitat features

are missing. This may be why the islands on Big, Wasilla, and High Ridge lakes were not used. The island on Seventeenmile was not used in 1988 (the first year placed), but was used successfully this year. This may be due to the timing of placement after ice-out, or familiarity by the resident pair.

#### **Kenai and Outlying Areas**

There is too little data available for these areas to draw general conclusions. More data is especially needed for loon concentration areas on the Kenai to implement conservation measures.

In all areas, more information is needed to identify the migratory routes and wintering areas of loons breeding in southcentral Alaska.

#### **ACKNOWLEDGEMENTS**

This report would not have been as complete without the information from all the volunteer observers. Other people who deserve thanks are Rick Sinnott, Bill Collins and Nancy Graves (ADF&G), Larry and Jane Buskirk, and the MOA Goose Lake lifeguards for field assistance; Wayne Williams, George Windle, Sarah Machentanz, Dr. Keith McCavit and Mark Niver for building, maintaining and launching artificial nest islands; Anne Ruggles, Ray Ferguson, George Badger, Rod Cottle, Jim and Joann Eakin, Bettina Williams and others for posting loon signs; and Ron Williams, D.V.M. and Jim Scott, D.V.M. for veterinary care. This study was funded by State of Alaska funds through the Nongame Wildlife Program, Division of Wildlife Conservation, Alaska Department of Fish and Game.


PERSONAL COMMUNICATION

William M. Mills, Jr., M.D., 1544 Hidden Lane, Anchorage,  
AK 99501.


Dan Severin, Chugach Christian Camp, Chugiak, AK.

**1989**


**ALASKA LOON WATCH**



**Pacific (Arctic) Loon 26" L**



**Bonaparte's Gull**



**Common Loon 32" L**

Date	Pacific or Common?	Adults	Chicks	Chick Size: < 1/2 adult or ≥ 1/2 adult	COMMENTS oil on loons? nest site known? Bonaparte's Gulls present?

**LAKE:** \_\_\_\_\_

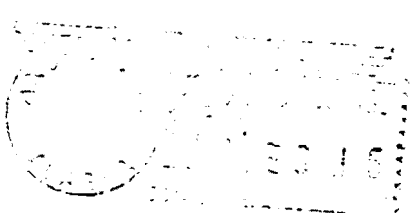
**OBSERVER:** \_\_\_\_\_

**Return Address**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



*No postage stamp necessary. Postage has been prepaid by*

**TO:**

**NANCY TANKERSLEY**  
**ALASKA DEPT FISH & GAME**  
**333 RASPBERRY RD**  
**ANCHORAGE, AK 99518**

**Mail-in dates:**

**June 1** (include ice-out and arrival dates)

**July 1**

**Aug 1** (include mid-July observation-chicks?)

**Sept 1** (include late Aug. observation-chicks surviving)

**Oct 1**

\_\_\_\_\_

Fig. 1. Data cards used by volunteers to submit monthly observations.



Red-throated 25" L  
Loon



Common  
Loon 32" L



Pacific (Arctic)  
Loon 26" L

1989  
ALASKA LOON WATCH

Your Name: \_\_\_\_\_ Address: \_\_\_\_\_  
Day Phone: \_\_\_\_\_

Please fill out a separate sheet for each lake. Write or phone for more forms, if needed.

Lake \_\_\_\_\_ Locality \_\_\_\_\_

Cabins or homes on shore (circle one): 0 1 2 3 4 5 more than 5 Camp Campground

Use by people during May-September. Circle highest value that applies. (Please circle only ONE).

0. None (fall hunting only counts as none).
1. No boats.
2. Boating or canoeing irregularly (nonmotorized).
3. One or two boats or canoes daily (nonmotorized).
4. Daily use of boats, canoes, or sailboats; no boat motors or floatplanes.
5. Occasional use of boats with motors, and/or floatplanes.
6. Daily use of one or two boats with motors, and/or floatplanes.
7. Frequent use of boats with motors, and/or floatplanes.

Date of your first visit this year \_\_\_\_\_

Date water open sufficient for loon use \_\_\_\_\_

Date loon(s) first came to lake \_\_\_\_\_

Number on lake as above date \_\_\_\_\_

Are loons present throughout the summer (circle one) yes no irregularly

Total number of adult loons remaining on lake throughout the summer \_\_\_\_\_

Total number of nesting pairs \_\_\_\_\_

Do you know where this year's nesting site is? \_\_\_\_\_

(If yes, please enclose map)  
(If no, please do not disturb birds to locate)

Total number of young birds hatched by these pairs \_\_\_\_\_

Total number of young which survived through summer \_\_\_\_\_

Date young first seen \_\_\_\_\_

Size of young on this date (circle one)

1. Less than 1/3 length of adult
2. 1/3 to 2/3 length of adult
3. More than 2/3 length of adult

Date loons last seen \_\_\_\_\_

Date of your last visit \_\_\_\_\_

Number of young raised on this lake last year in which you observed young \_\_\_\_\_

What year was this? \_\_\_\_\_ Last year you checked lake \_\_\_\_\_

Do any Bonaparte's Gulls or Arctic Terns nest on lake?

Have you seen any avian predators around lake (Bald Eagles, Short-eared Owls, Great Horned Owls, other gulls)? \_\_\_\_\_

Species seen \_\_\_\_\_



Arctic Tern



Bonaparte's Gull

Return by 9/30/89 to:  
Nancy Tankersley  
Alaska Dept. of Fish and Game  
Nongame Wildlife Program  
111 Raspberry Road  
Anchorage, AK 99518  
Phone: 267-2149 (collect)

Please add any additional remarks on the back.

(OVER)

Fig. 2. Data form used by volunteers to submit summer summary.

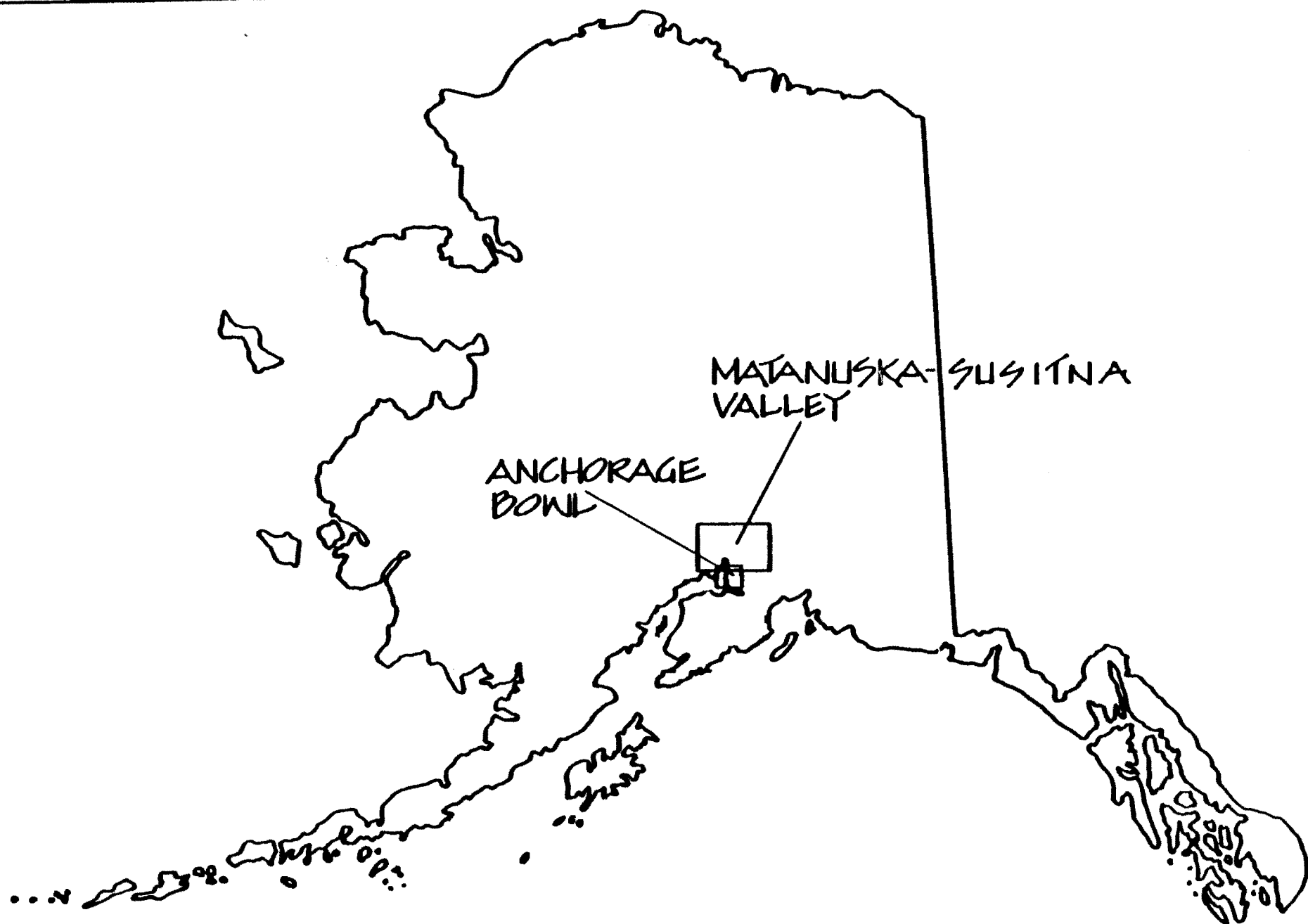
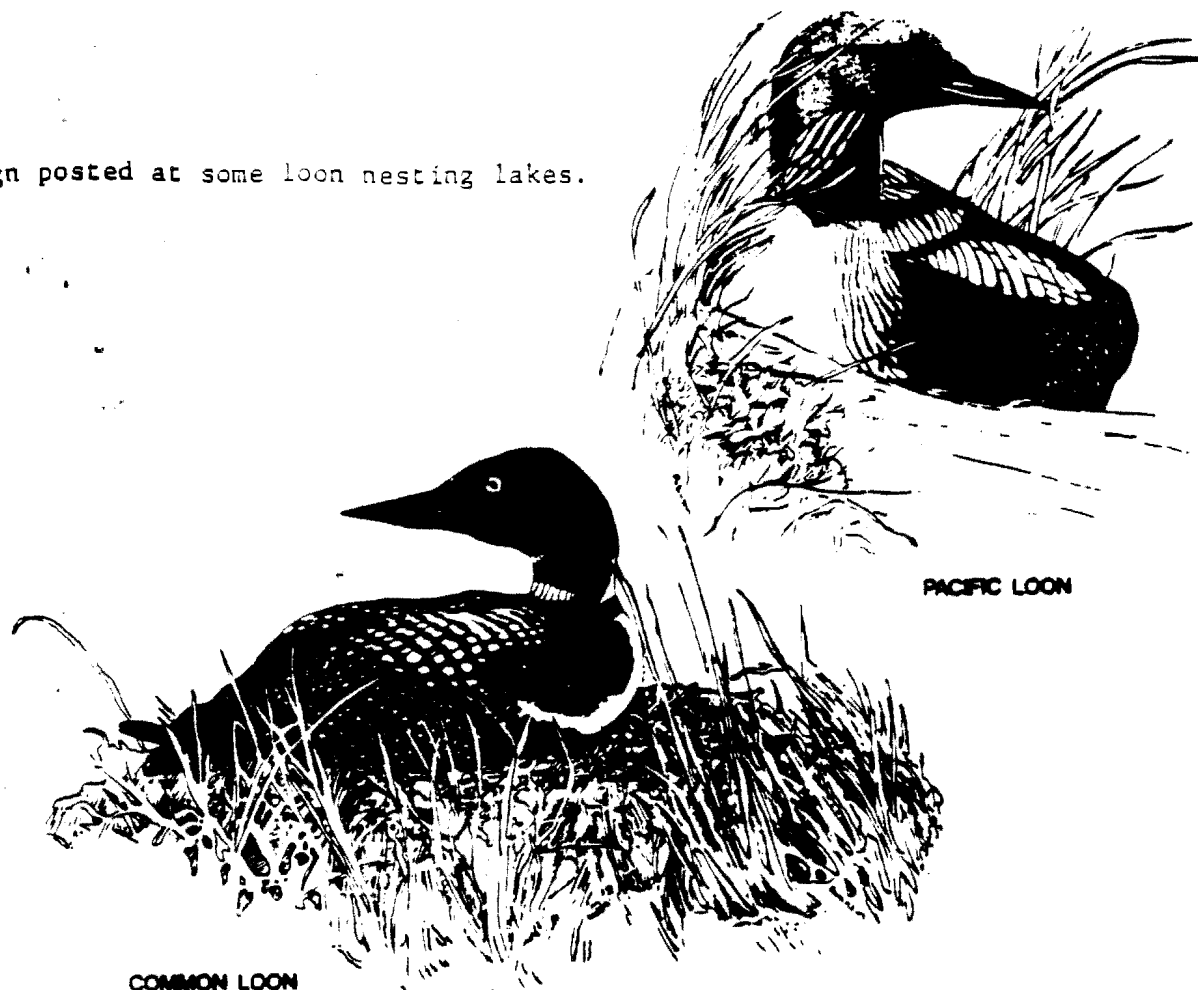


FIG. 3. Surveys included 36 lakes in the Anchorage Bowl and 156 lakes in the Matanuska-Susitna Valley.



Fig. 4 . Sign posted at some loon nesting lakes.



## **LOON NESTING AREA**

**State laws protect nesting loons and other birds.**

1. Loon eggs and young may die from chilling or being eaten by predators while adult loons defend their nest or young from disturbance.
2. Keep your dog on a leash.
3. Pick up litter, especially fishing line and plastic 6-pack holders, which can strangle and kill loons and other wildlife.

**DO NOT DISTURB  
NESTING LOONS OR THEIR YOUNG**

**POSTED BY: ALASKA DEPARTMENT FISH AND GAME**



# **BIRD NESTING AREA CLOSED TO FISHING MAY 15 - JULY 15**



**Emergency Order Alaska Dept. Fish & Game**



Fig. 5. Sign posted and floated on loon nesting lakes where fishing restrictions applied.

**DO NOT  
DISTURB  
BIRD NESTING  
AREA**

**POSTED BY: ALASKA DEPARTMENT FISH AND GAME**



Fig. 6 . Sign floated or posted near loon nesting sites on some lakes.

Table 1. Common (CO) and Pacific (PA) Loon observations from the greater Anchorage area during 1989.

AREA	LAKE	#	LOOM SPECIES	OBSERVATION DATES	# CHICKS SEEN	# CHICKS SURVIVING <sup>1</sup>	OBSERVERS / COMMENTS
ANCHORAGE	BASHER SW POND	0		5/25			N.T.
	CAMPBELL	0-2	CO	DATES 5/6-JUNE			M & L BROOKS, C. BASS
		0-2	PA	DATES 6/19-8/15			M & L BROOKS
	CHENEY	0-2	CO, PA?	DATES 4/17-5/23			L. VAN GOOR, S. FINK
	CONNORS	0-4	PA*?	DATES 4/29-7/7			G. NILSON, M. DALTON
	DELONG	1-3	PA*(2N)	DATES 4/30-9/11	2,2	0,0	SCHEFFEL, CHANDONNET, HAGGART, NILSON, LEWIS, PASSAGE
	GOOSE	2	PA*(N)	DATES 5/8-9/16	1	1	EAMES, MALONEY, JONES, VAN GOOR, NILSON, N.T.
	JEWEL	0-3	CO	DATES 5/1-9/23			B. PASSAGE, M. SUTTON
		0-3	PA	DATES 5/21-8/14			B. PASSAGE, M. SUTTON
	LITTLE CAMPBELL	2	PA*(N)	DATES 5/20-9/11	2	1-2	B. PASSAGE, M & J MCCONNAUGHY, N.T., R. SINNOTT
							D. CALLOWAY, B. PASSAGE/ALL GONE BY 9/25
	MEADOW	1-2	PA*(N)	DATES 4/29-7/7	0	0	G. NILSON/2ND LOON ARR.LATE, ABANDONED NEST EARLY
	POTTER	1-2	PA*?	5/21,6/12,7/10			M. SUTTON, N.T.- 0 CHICKS IN 2 HRS BACK POND
	SAND	1-2	CO	4/30,6/7,6/17			B. PASSAGE, W. MILLS, L. VAN DAELE
		3	PA	EARLY JUNE			W. MILLS
	SPENARD/HOOD	2	PA	8/26			B. PASSAGE
EAFB	TAKU/CAMPBELL	0-2	PA	SUMMER			D. HARKNESS, OTHERS
	TURNAGAIN BOG	0		5/25			N.T.
	WESTCHESTER LAG.	0		5/19			L. VAN GOOR
	HILLBURG	2	PA	6/14			P. STEFANICH
	LOWER SIXMILE	2	CO*(N)	DATES 5/30-7/19	2	0	A. RICHMOND, T. RORTVEDT
	OVAL	2	PA*(N)	5/25,6/2,7/19	0	0	A. RICHMOND
	UPPER SIXMILE	2	CO(T)	5/25,6/2			A. RICHMOND
	CLUNIE	2	CO*(N)	DATES 5/25-8/3	2	1	N.T., R. STEEN\CHICKS HATCHED 6/30
	OTTER	2	CO*(N)	DATES 5/6-10/21	2	1	R. STEEN, T. RORTVEDT\1 LOON 4/29, 2ND 5/6
	CHUGIAK	0		6/13			N.T., N. GRAVES
	EDMONDS	1	PA	6/13			N.T., N. GRAVES
	EKLUTNA	1-2	PA	SUMMER			N.T., STATE PARK RANGERS
	PSALM	2	PA*(N)	DATES 5/2-8/21	2	2	M. NAUMAN\1 LOON ON 9/24

<sup>1</sup> Chick > 1/2 adult size

\* = breeding pair (nest, eggs, or chicks seen)

\*? = possible breeding pair (pair only seen)

(N) = nest site known

(2N) = 2 nest sites used

(T) = territorial pair observed

Table 2. Loon observations from Anchorage area lakes 1985-89.

AREA	LAKE	SURFACE AREA (ACRES) <sup>1</sup>	1985		1986		1987		1988		1989	
			SPECIES	# CHICKS SURV. <sup>2</sup>	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.
ANCHORAGE	BASHER <sup>3</sup>	N.D.	--		--		--		--		--	
	CAMPBELL	N.D.	(PA)		(PA,CO)		(PA,CO)		(PA,CO)		(PA,CO)	
	CHENEY	10	(CO)		(CO)		(CO)		(CO)		(CO)	
	CONNORS	40	PA*(CO)	1	PA*(CO)	1	PA*(CO)	0	PA*(N),(CO)	0	PA*	0
	DELONG	22	PA*(CO)	1	PA*(N),(CO)	0	PA*(N),(CO)	1	PA*(N),(CO)	1	PA*(2N),(CO)	0,0
	GOOSE	N.D.	PA*	1	PA*(N)	0	PA*(N)	0	PA*(2N)	0	PA*(N)	1
	JEWEL	28	(CO)		(CO,PA)		(CO,PA)		(CO,PA)		(CO,PA)	
	LITTLE CAMPBELL	10	PA*?		PA*(2N)	0	PA*(N)	1	PA*(N)	2	PA*(N)	1-2?
	MEADOW	N.D.	PA*	0	PA*(N)	1	PA*	1	PA*(N)	1	PA*(N)	0
	POTTER	N.D.	N.D.		N.D.		N.D.		PA*(N)	0	PA*?	
	SAND	67	--		(CO)		(CO,PA)		N.D.		(CO,PA)	
	SPENARD/HOOD	N.D.	(PA)		(PA,CO)		(PA,CO)		(PA)		(PA)	
	SUNDI	10	--		(PA)		(PA,CO)		(PA,CO)		N.D.	
	TAKU	5	(PA)		N.D.		(PA)		(PA)		(PA)	
	TURNAGAIN BOG <sup>4</sup>	N.D.	N.D.		--		(PA)		(PA)		--	
	WESTCH. LAG. <sup>5</sup>	N.D.	(PA)		(PA)		(PA)		(PA)		--	
EAFB	GREEN	19	--		--		(CO)		(CO)		N.D.	
	HILLBURG	30	--		--		(PA)		--		(PA)	
	OVAL		N.D.		PA*	1	PA*?		PA*	1	PA*(N)	0
	LOWER SIXMILE	160	CO*(N)	1	CO*(N)	1	CO*(N)	2	CO*(N)	0	CO*(N)	0
	UPPER SIXMILE	(both)	(CO)		--		(CO)		CO(T)		CO(T)	
FT. RICH	CLUMIE	114	--		(CO)		--		(CO)		CO*(N)	1
	OTTER	99	CO*	1	CO*	1	CO*	2	CO*?		CO*(N)	1
CHUGIAK	BEACH	N.D.	CO*?		CO*?		CO*?		--		--	
	EDMONDS	N.D.	PA*?		--		(CO)		(CO)		(PA)	
	EKLUTNA	3,520	N.D.		N.D.		--		(PA)		(PA)	
	MIRROR	80	--		(CO)		(CO)		--		N.D.	
	PSALM	25	PA*	2	PA*	0	PA*(N)	1	PA*(N)	1	PA*(N)	2

Table 2. continued

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1 Estimates from ADF&G Sport Fish stream files, Anchorage.

2 Chicks  $>1/2$  adult body size

3 Pacific Loons seen in 1982 (Hogan and Tande 1983).

4 Breeding Pacific Loons observed in 1982 (Hogan and Tande 1983).

5 Breeding Pacific Loons observed in 1978, 1976 and earlier (W. Mills, Jr., pers. comm.)

CO = Common Loons seen

PA = Pacific Loons seen

\* = breeding pair (nest, eggs or chicks seen)

\*? = possible breeding pair

(N) = nest site known

(2N) = 2 nest sites used

(T) = territorial pair with no nesting

(CO) = use by nonbreeding Common Loons

(PA) = use by nonbreeding Pacific Loons

Table 3. Summary of Anchorage loon data presented in Table 2.

YEAR	1985	1986	1987	1988	1989
# LAKES SURVEYED	65	45	41	36	25
# LAKES WHERE COMMON LOONS OBSERVED	8	12	15	12	9
# COMMON LOON BREEDING PAIRS	2	2	2	1	3
# POSSIBLE COMMON LOON BREEDING PAIRS	1	1	1	1	0
# TERRITORIAL PAIRS WITH NO NEST	N.D.	N.D.	N.D.	1	1
# COMMON LOON CHICKS	2	2	4	0	2
KNOWN COMMON LOON REPRODUCTIVE RATE					
# chicks/# breeding pairs	1.0	1.0	2.0	0	0.7
MINIMUM COMMON LOON REPRODUCTIVE RATE					
# chicks/# known + possible + terr. breeding pairs	0.7	0.7	1.3	0	0.5
# LAKES WHERE PACIFIC LOONS OBSERVED	10	12	16	16	16
# PACIFIC LOON BREEDING PAIRS	5	7	6	8	7
# POSSIBLE PACIFIC LOON BREEDING PAIRS	2	0	1	0	1
# TERRITORIAL PAIRS WITH NO NEST	N.D.	N.D.	N.D.	0	N.D.
# PACIFIC LOON CHICKS	5	3	3-4	6	4-5
KNOWN PACIFIC LOON REPRODUCTIVE RATE					
# chicks/# breeding pairs	1.0	0.4	0.5	0.8	0.6
MINIMUM PACIFIC LOON REPRODUCTIVE RATE					
# chicks/# known + possible + terr. breeding pairs	0.7	0.4	0.4	0.8	0.5

Table 4. Common (CO), Pacific (PA), and Red-throated (RT) Loon observations from the main Mat-Su Valley study area during 1989.

AREA	LAKE	# ADULTS	SPECIES	OBSERVATION DATES	# CHICKS SEEN	# CHICKS SURV. <sup>1</sup>	OBSERVERS / COMMENTS
SUTTON	DRILL	0-2	PA	DATES 5/9-SEPT			E. GRAHAM/ICE OUT 5/3-5
		1	CO	8/20			E. GRAHAM
	FISH	0		DATES 6/24-9/24			B. TINIUS
	IDA	0		DATES 5/6-10/1			B. TINIUS
	SEVENTEENMILE	2	CO*(N*)	DATES 5/7-10/18	2	2	WINDLE, ROBINSON, N.T./ADULTS LEFT BY MID-SEPT
	SLIPPER	0		8/15			N.T.
PALMER	WISHBONE	0		8/15,16			C. BAER
	ECHO	0		5/3			C. BAER
	HIGH RIDGE	1-3	CO	5/7,8,9,10,18			K. NEWBURY/NEST ISLAND PLACED ON LAKE 1988
	IRENE	1	CO	DATES 4/29-9/5			H. ASHLEY/1 DEAD CO LO FOUND BY D. HUSEBY JULY
	JOHNSON	0		7/17-18			C. BAER
	KEPLER	0-1	CO	DATES 5/26-8/26			R & J. AMON, N.T./ PROBABLY MATANUSKA LAKE LOON
	LONG	1	CO	5/30			C. BAER
	MATANUSKA	1(-2)	CO	DATES 5/26-8/27			R. & J. AMON
	MEIRS (MCLEOD)	0		5/21,28,6/4,6/17			J. GFRORER
	ANDERSON	2	CO*(N)	4/29-8/24	2	1	R. FERGUSON/WK-OLD CHICK KILLED BY SKI BOAT 7/16
WASILLA	CHIGNAKI	1-2	PA*(N)	DATES 6/16-7/15	0	0	HUTCHINS, A. RUGGLES, N.T./1 EGG LAID & HATCHED
	CORNELIUS	2	CO*(N)	DATES 5/1-LATE SEPT	2	2	EAKIN, M & K HULL, A. RUGGLES, P. ARMOLD/ 1 CHICK LEFT 10/20
	DINKEL	2	CO*	DATES 4/29-9/30	1	1	T. OLIGER/1 ADULT LEAVES BY 9/15
	FINGER	0		8/15			N.T./NONE REPORTED BY STATE PKS EITHER
	JACOBSEN	2	CO*(N)	DATES 4/28-7/14	1	0	V & G COGHLAN, A. RUGGLES/1 EGG UNHATCHED
	KINGS	2-3	CO(T?)	6/23,8/15			A. RUGGLES, N.T./NO NESTING ACTIVITY
	LOBERG	0		5/5,8/16			C. BAER, N.T.
	LUCILLE	2	CO*(N)	DATES 4/30-9/10	1	1	R. COTTLE/NEW MATE? DISAGREEMENT ON NEST SITE
	MEMORY	0-2	CO(T)	DATES 5/2-7/8			J. SONNIER, J. STUART, C. BRENT, N&K HULL, RUGGLES
	NEKLASON	0-2	CO	DATES 4/29-7/18			J. EAKIN, A. RUGGLES, N.T.
		0-2	PA	SUMMER			R & O TORDOFF, A. RUGGLES



Table 4. continued.

AREA	LAKE	# ADULTS	SPECIES	OBSERVATION DATES	# CHICKS SEEN	# CHICKS SURVIVING	OBSERVERS / COMMENTS
	PARADISE	0-2	CO	SUMMER			R & O TORDOFF
	REED	0		5/29			K & M MULL
	REEDY	0-2	CO	PERIODS 4/30-SEPT			D & B. DINKEL/LOOMS HEARD OR SEEN VISITING
	WALBY	0		5/5			C. BAER
	WALLACE	2	CO(T)	DATES 5/7-10/7			T. MARSHALL, A. RUGGLES/1ST ARR. 5/1
	WASILLA	1	CO	7/15, 27			A. CURTIS
	WOLF	2	CO*(N)	DATES 4/27-9/17	1	1	J. EAKIN, A. RUGGLES/2ND EGG UNHATCHED
PT. MCKENZ	B & B FARMS	2	CO*(N)	MAY-7/8	N.D.	N.D.	L. DECAMILLO/ON LAND 6/12 & 13
	BARLEY	2,0	CO	6/15, 16, 8/22			C. BAER, N.T.
	BASKIN FARM	2	CO*?	6/1			L. DECAMILLO/MANY BD. GULLS & DUCKS
	BETH	0		8/22			N.T.
	CARPENTIER	2(0-9)	CO(T)	SUMMER			CARPENTIER, WALKER, BAER/NO NESTING THIS YEAR
		1**	CO	SEPT.			**FOUND DEAD BY D. CARPENTIER
	FARMER	2	PA*(N)	8/22	1	1	N.T./CHICK NEARLY FULL GROWN
	KNIK	0		6/20, 8/22			N.T.
	LORRAINE	2	CO*?	8/22			N.T./TREMEOED WHEN I APPROACHED LAKE
	THREEMILE	2	CO*(N)	DATES 6/26-OCT	1	1	A. RUGGLES, SUSITMA GIRL SCOUTS
MEADOW	BAPTIST	1	PA	8/15			N.T./VOCALIZING
	BEAR PAW	0-2	PA	DATES 5/12-8/16			C. BAER, A. RUGGLES, N.T.
	BEAVER POND	2(0-4)	PA*(N)	DATES 5/1-7/28	0	0	M. BEHNKE/ICE OUT 4/31
	BEHNKE	0-2	CO	DATES 5/6-7/4			P. BEHNKE
		3	PA	7/19, 28, 30			P. BEHNKE
	BEVERLY	2	CO(T)	4/29-SEPT			J & H BOCHENEK, C. BAER
	BLODGETT	0		7/14			A. RUGGLES
	BRUCE	2	PA (T)	5/2-9/13			P. NELSON, N.T./ NO NESTING OBSERVED
	CHERI	1	CO	7/11			N.T.
	CLOUDY	2	PA*(N)	DATES 5/5-7/31	1	1	S. PHILLIPS, A. RUGGLES/2ND EGG UNHATCHED
		1	CO	5/15, 19, 22			S. PHILLIPS/VISITOR FROM SCOTT LK?
	CORCORAN	0-2?	PA	SUMMER			PER A. RUGGLES
	DOUBLOON	0-2	PA	DATES 6/1-9/2			L. SUDKAMP, A. RUGGLES/NO NEST
	FROG	2	CO(T)	6/20, 30, 7/6			A. RUGGLES/NO NEST
	FULLER	2	CO*(N)	8/15	1	1?	N.T./CHICK > 1/2 SIZE (1 MO. OLD?), LOOSE DOGS
	HERKIMER	0-2?	PA	SUMMER			PER A. RUGGLES
	ISLAND	2(-5)	CO*(N)	DATES 5/2-9/19	0	0	SUDKAMP & PAPPERT/EGGS GONE 7/2 - JET SKI?
	JUNE	0		7/18			A. RUGGLES, N.T.
	KALMBACH	2	CO*(N)	DATES 4/29-9/15	2	2	NELSON, SMITH, RUGGLES, BAER, WALKER, N.T.

Table 4. continued.

AREA	LAKE	# ADULTS	SPECIES	OBSERVATION DATES	# CHICKS SEEN	# CHICKS SURVIVING	OBSERVERS / COMMENTS
BEAVER	LALEN	2	CO*(N)	DATES 4/30-SEPT	2	2	M. WOHLGEMUTH, J. HINES, A. RUGGLES
	LILLY	0-27	PA	SUMMER			PER A. RUGGLES
	LITTLE	0		7/18			A. RUGGLES, N.T.
	LOON	2	PA*	DATES 5/6-10/2	1	1	V. CHRISTIANSON, TOMAZINK, A. RUGGLES, N.T.
	MARYBELLE	0		EARLY MAY			H & J BOCHENEK/ICE OUT 4/30
		1-2	PA	5/15, 17, 19, 24, 30			H & J BOCHENEK
		2	CO	7/7			J. BOCHENEK
	MORVRO	0-2	CO(T)	DATES 6/20-7/6			A. RUGGLES, C. BAER, S. WALKER
	PKS HWY & BIG LK	1-2	PA*?	DATES 6/18-8/16			G. NILSON, A. RUGGLES, N.T.
	POLAR BEAR POND	0-2	PA	DATES 6/1- AUGUST			L. SUDKAMP
	PRATOR	0		5/11, 7/11			C. BAER, N.T.
	RAINBOW	2	CO*(N)	DATES 4/30-9/17	1	1	D. CARLSON, A. RUGGLES, B. BERGER, N.T.
	SCOTT	2	CO(T)	DATES 5/2-LATE AUG.			B. BUZBY/ICE OUT 4/30; BO. GULLS & AR. TERNS
	SEYMOUR	2-4	CO	DATES 6/8-9/1			R. MOULTON, R. COVIELLO
	SHERWOOD	2	PA*(N)	7/18, 7/20	1	1?	A RUGGLES, N.T./CHICK ABOUT 1-2 WKS OLD
	TOAD	2	CO*(N)	6/30, 7/6, 11, 8/29	1	1	A. RUGGLES, N.T./2 EGGS
	VISNAW	2	CO(T)	DATES 4/30-10/5			M. CARLSON, A. RUGGLES
	BEAVERHOUSE	2	CO*(N)	DATES 5/2-MID-SEPT	2	1	S. FAIT, A. RUGGLES
	BEAVERTAIL	2	PA*	8/2	1	1	A. RUGGLES/CHICK 2/3 ADULT SIZE
	BIG BEAVER	1,2	CO	5/4, 7			A. MAHURIN/ICE OUT 5/3
	BOTTLE	2	PA*?	7/9			A. RUGGLES
	GODIN'S POND	2,0	PA	5/6, 7/27			S. FAIT
	HORSESHOE	1-8	CO	DATES 5/5-9/27			C. SIKORA, K. SAVAGE, A. RUGGLES/NEST ISLAND
	HOURLASS	1	CO	7/9			A. RUGGLES
	LAZY	2	PA*(N)	DATES 6/20-SEPT	1	1	A. RUGGLES, MCCORD
	LITTLE BEAVER	2	CO*(N)	6/22, 7/15, 8/2?	0	0	A. RUGGLES/2 EGGS NEVER HATCHED
	LITTLE HORSESHOE						
	(WEST)	1-6	CO	DATES 5/3-9/27			K. SAVAGE, A. RUGGLES
		1	PA	6/6, 7/27			K. SAVAGE
	LONG/TWIN	2	CO*(N)	DATES 5/3-9/2	2	1	J. EDER, N.T./NEW PAIR DISPLACED WIDOWED SINGLE?
	STEPAN	1	CO	6/20, 7/5, 15			A. RUGGLES/NO NEST FOUND
BIG LAKE	BIG LAKE-BASIN 1	1-12	CO	DATES 5/12-9/9			NIVER, NILSON, MOCKERMAN/33 GREBES 6/17
	BIG LAKE-BASIN 2	2	CO*(N)	DATES 5/28-8/28	2	1	D. FOX, G. NILSON, S. WALKER/20 GEBES 6/17
		1,2	PA	6/17, 7/8			G. NILSON
	BIG LAKE-BASIN 3	2-3	CO	6/11, 17, 24, 7/8			G. NILSON/11 GREBES 6/17
	BIG LAKE-BASIN 4	1,2	CO	6/17, 25			G. NILSON/11 GEBES 6/17

Table 4. continued.

AREA	LAKE	# ADULTS	SPECIES	OBSERVATION DATES	# CHICKS SEEN	# CHICKS SURVIVING	OBSERVERS / COMMENTS
		1	PA	6/17			G. NILSON
	BIG LAKE-BASIN 5	2	CO*(N)	DATES 5/28-9/1	2	1	G. NILSON, D. FOX, M. NIVER, S. WALKER/4 GR 6/17
	BIG LAKE-BASIN 6	1-2	CO	6/11,17,24,25,7/1,6			G. NILSON, S. WALKER/45 GEBES 6/17
		1	PA	6/25			G. NILSON
	BIG LAKE-GENERAL	2-19	CO	DATES 6/1-8/28			D. FOX, M. NIVER
		4-20	PA	DATES 7/31-8/28			D. FOX
	CROOKED	2	CO*(2N)	DATES 5/28-9/4	0	0	N.T./BOTH NESTS UNSUCCESSFUL
		+2	CO	DATES 7/1-9/4			N.T./2ND PAIR FROM ANNEX?
	CROOKED ANNEX	2	CO	5/28			J. MCINTYRE, G. NILSON
	CROOKED OUTLET	0-3	CO	DATES 6/17-8/13			N.T./PROBABLY CROOKED LK LOONS
	DAWN	0		6/12,13			C. BAER
	DIAMOND	2(-3)	CO*(N)	DATES 5/10-9/29	1	1	J & L PINNEO, C. BAER, A. RUGGLES, N.T.
	DOLLAR	0-2	PA	DATES JUNE-7/4			G. JONES, G. NILSON/NESTING GREBES ON LAKE
	ECHO	2	CO	7/2			J. SHOCKLEY/NO NESTING, 2 BO. GULLS
	FLAT	2	CO*(2N*)	5/27-SEPT	1	1	W. WILLIAMS & J. NILSON/2 EGGS ABANDONED BY 6/10
							J. NILSON/ 2ND NEST ON MORLIN'S IS.
	HOMESTEAD	0-3	PA	5/28, 6/17, 7/2			J & G NILSON
	MARION	2(-6)	CO(T)	DATES 5/3-8/30			D. HERSCHBACH, A. RUGGLES
	MARION DR. POND	2	PA*?	DATES 5/24-8/28			D. FOX
	MARION POT HOLE	0		SUMMER			D. FOX
	ROCKY	0-2	CO	DATES 5/9-9/17			A. LAWLER, R. MELLIN, C. BAER
		0-1	PA	DATES 5/5-9/2			A. LAWLER
	SARA	0-2	CO	DATES 5/27-7/8			G & J NILSON
	STEPHAN (LOWER)	2	CO*?	DATES 5/2-9/7			B. WELCH
	(UPPER)	2	CO*(?)	DATES 5/2-9/7			B. WELCH
	SUSAN	2	CO*(N)	DATES 5/27-SEPT	2	1	G. NILSON/NO TERNS OR BO. GULLS
	"TRANQUILITY"	0-2	PA	DATES 5/21-7/4			G & J NILSON
WILLOW	ARDAW	2(0-4)	CO*(2N?)	DATES 5/22-9/10	0	0	COVIELLO, CHARLES, SARDINKA/ON WEST MID-JULY
	BALD	2	CO*(N)	5/29	N.D.	N.D.	J. WENGER/FORMALLY USED BY PACIFIC LOONS
	BIG MOLOCK	0-2	CO	DATES 5/22-9/10			S. CHARLES, C & J SARDINKA
	BUCKLEY	0-4	CO	DATES 5/22-8/22			C & J SARDINKA/NESTING BO. GULLS
	BUTTERFLY	0-8	CO	DATES 5/21-8/22			C & J SARDINKA/ B. GULLS & AR. TERMS PRESENT
	CANDLESTICK	0-2	CO	DATES 5/22-8/22			C & J SARDINKA/1 VISITING BO. GULL
	CHARR	0-2	CO	DATES 5/22-9/10			S. CHARLES, C & J SARDINKA
	CHICKEN	0-2	CO	DATES 5/22-9/10			S. CHARLES, C & J SARDINKA
	CRYSTAL	2(-5)	CO*(N)	DATES 5/8-9/1	0	0	G. BADGER, C. BAER/2 EGGS ABANDONED

Table 4. continued.

AREA	LAKE	# ADULTS	SPECIES	OBSERVATION DATES	# CHICKS SEEN	# CHICKS SURVIVING	OBSERVERS / COMMENTS
	ECHO PONDS	0-2	CO	DATES 5/22-8/22			C & J SARDINKA
	FLORENCE	2	CO*(N)	DATES 5/22-9/4	0	0	S. CHARLES, JA. JOHNSON
	(BIG) FRAZIER	0-1	CO	DATES 5/22-9/10			S. CHARLES, C & J SARDINKA
		2,3	PA	7/29,9/10			S. CHARLES, C & J SARDINKA
	GENE	1-2	CO	DATES 5/16-8/20			J. MULHALL, H. TUCKER
		1	PA	7/10,8/9			J. MULHALL
	HONEYBEE	2(-7)	CO*(N)	DATES 5/3-9/27	2	2	D. BLANCHARD, C. BAER/ADULT & CHICK LEFT BY 9/27
	JACKKNIFE	0-2	PA	DATES 5/22-9/10			S. CHARLES, C & J SARDINKA
	JAMES	(0-)2	CO*(N)	DATES 5/22-9/10	0	0	S. CHARLES, C & J SARDINKA
	JOHN	2	CO(T)	DATES 5/22-9/24			S. CHARLES/1 CAME DAY AFTER ICEOUT, 2ND NEXT DAY
	JW#1-S.LONG LK RD1-3		PA*?	DATES 5/7-8/9			J. WENGER, E & C PARGETER
	JW#2-N.LONG LK RD2(0-4)		PA*?	DATES 5/7-8/9			J. WENGER, E. & C PARGETER, R. SEPPI
	JW#3(MI 1 NLSRA)	0-1	PA	5/7,21,28,6/11,8/9			J. WENGER
	JW#4(SW SO.ROLLY)0			5/21,28,8/9			J. WENGER
	KELLY	1-2	CO*(N)	DATES 5/6-9/27	0	0	P. FOLTA/ICE OUT BY 5/7
		1-2	PA	5/28,30,6/8,9,8/11			P. FOLTA
	LITTLE FRAZIER	0-4	CO	DATES 5/22-9/10			S. CHARLES,C & J SARDINKA
		1	PA	6/18			C & J SARDINKA
	LITTLE LONELY	2	CO*?	6/26-28			C. BAER
	LITTLE MOLUCK	2(0-1)	PA*(N)	DATES 5/22-9/10	0	0	S. CHARLES,C & J SARDINKA
	LONG	1-4	CO*?	DATES 5/26-7/22			K. ROGNES
	LYNNE	2(1-6)	CO*(N)	DATES 5/8-10/1	0	0	M. L. MAYFIELD/ABANDONED NEST, NO EGGS
	LYNX	2(-6)	CO*(2N)	DATES 5/13-9/15	1	1	B. BELLRINGER, C & J SARDINKA, S. CHARLES
	MILO	1-2	CO*	6/17,9/10	1	1	S. CHARLES/CHICK > 1/2 ADULT SIZE
		3	PA	5/22			S. CHARLES
	NANCY	1-2	CO*	5/13,28,7/17-20	2	2?	C & J SARDINKA, D. DENIG-CHAKROFF
	NORTH ROLLY	2	CO*(N)	6/20	N.D.	N.D.	S. CHARLES
	OWL	1-2	CO*(N)	DATES 6/17-9/10	0	0	S. CHARLES, C & J SARDINKA
	RAINBOW	2	CO*(N)	DATES 6/10-SUMMER	1	1	E & C PARGETER/2 EGGS
	RED SHIRT	2	CO*	7/10	2	2?	D. HEIKES/1 CO LO DIED IN NET 7/13
	SHIRLEY	2	CO*(N)	DATES 6/19-9/24	2	0	S. CAMPBELL, JE. JOHNSON, R. SEPPI, M. VALLIANT
		1	PA	8/2,3			R. SEPPI
	SKEETNA	2	CO*?	6/9			C & J SARDINKA
	SO. ROLLY	2	CO*(N)	5/29,7/1-4,8,9	N.D.	N.D.	P. STEPHENS/ON NEST 7/9
	TANAINA(DENAINA)	2(1-4)	CO*?	DATES 5/22-8/19			S. CHARLES,C & J SARDINKA
		1-2	PA	6/1,16,7/6,8/18,9/10			S. CHARLES, C & J SARDINKA

Table 4. continued.

AREA	LAKE	#	SPECIES	OBSERVATION	# CHICKS	# CHICKS	OBSERVERS / COMMENTS
		ADULTS		DATES	SEEN	SURVIVING	
	VERA	2	CO*?	DATES 5/25-7/19			B. MERRELL, C. BAER
	WILLOW	2(-10)	CO(T)	DATES 5/5-9/2			D&L DAFOE, K. MORRIS, M. UPTON, V. RICHEY, P. FOLTA
HAT. PASS	TWELVEMILE	2	PA*(N)	6/27, 8/30	0	?	A. RUGGLES

<sup>1</sup> Chicks >1/2 adult size when last seen

\* = breeding pair

\*? = possible breeding pair

(N) = nest site known

(N\*) = nest on artificial island

(2N) = 2 nests found

(T) = territorial pair, but no nesting

N.D. = no data

Table. 5. Loon observations from Matanuska-Susitna lakes in the main study area observed during 1986-89.

AREA	LAKE	ESTIMATED SURFACE AREA (ACRES) <sup>1</sup>	1986		1987		1988		1989	
			SPECIES	# CHICKS SURV. <sup>2</sup>	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.
SUTTON	DRILL	36	(CO,PA)		(PA)		(PA,CO)		(PA,CO)	
	FISH	59	N.D.		--		N.D.		--	
	IDA	46	N.D.		--		N.D.		--	
	SEVENTEENMILE	100	CO*?		CO*?		(CO)		CO*(N*) <sup>3</sup>	2
	SLIPPER		N.D.		N.D.		N.D.		--	
	WISHBONE		N.D.		N.D.		N.D.		--	
PALMER	BAIRDS		(PA)		N.D.		N.D.		N.D.	
	BRADLEY	13	--		--		--		N.D.	
	CANOE	21	--		--		N.D.		N.D.	
	ECHO	23	--		--		--		--	
	HIGH RIDGE		--		(CO?)		--		(CO)	
	IRENE	18	--		(CO)		(CO)		(CO)	
	JOHNSON	40	N.D.		(CO)		(CO)		--	
	KEPLER	45	CO*	0	(CO)		(CO)		(CO)	
	KLAIRE	9	--		--		N.D.		N.D.	
	LONG	74	--		--		(CO)		(CO)	
	MATANUSKA	62	--		(CO)		(CO)		(CO)	
	MEIRS (MCLEOD)	17	--		--		--		--	
	SLIVER	7	--		--		--		N.D.	
	VICTOR	14	--		--		N.D.		N.D.	
WASILLA	ANDERSON	135	CO*(N)	0	CO*(N) <sup>3</sup>	2 4	CO*(N) <sup>3</sup>	0	CO*(N) <sup>3</sup>	1
	BLACK		--		--		--		N.D.	
	CHIGNAKI		--		PA*	2	PA*	2	PA*(N)	0
	CORNELIUS	48	CO*(N)	1	CO*(N)	0	CO*(N)	2	CO*(N)	2
	COTTONWOOD	262	CO*?		--		--		N.D.	
	DINKEL/WEINIE		N.D.		N.D.		(CO,PA)		CO*	1

Table 5. continued.

AREA	LAKE	ESTIMATED SURFACE AREA (ACRES) 1	1986		1987		1988		1989	
			SPECIES	# CHICKS SURV. 2	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.
	DRY (EAST)	15	N.D.		(CO)		--		N.D.	
	DRY (WEST)	22	--		--		--		N.D.	
	FINGER	362	(CO)		(CO)		(CO)		--	
	GAIL DR. POND		--		--		N.D.		N.D.	
	GOODING	58	--		--		--		N.D.	
	HART		(PA)		(PA)		--		N.D.	
	JACOBSEN		CO*(N)	1-2	CO*	0	CO*(N)	0	CO*(N)	0
	KENNEDY		N.D.		--		N.D.		N.D.	
	KINGS	154	CO*(N)	1	CO*	2	CO*(N)	2	CO*?	
	LOBERG	11	--		(CO)		(CO)		--	
	LUCILLE	362	CO*(N)	1	CO*(N) <sup>3</sup>	0	CO*(N) <sup>3</sup>	1	CO*(N) <sup>3</sup>	1
	MEIER		--		--		--		N.D.	
	MEMORY	84	CO*(N)	2	CO*	1	CO (T)		CO(T)	
	MI 46 POND		--		--		N.D.		N.D.	
	MUD	55	--		--		(CO)		N.D.	
	MUD POND		N.D.		--		N.D.		N.D.	
	NEKLASON	72	CO*?		CO*?		(CO)		(CO, PA)	
	PARADISE	25	--		--		--		(CO)	
	REED	20	--		--		--		--	
	REEDY		N.D.		N.D.		N.D.		(CO)	
	WALBY	54	--		--		--		--	
	WALLACE		CO*(N)	0	CO*(N)	1	CO*(N)	2	CO(T)	
	WASILLA	374	(CO)		(CO)		(CO)		(CO)	
	WOLF	62	CO*(N)	1	CO*(2N)	0	CO*(N) <sup>3</sup>	2	CO*(N) <sup>3</sup>	1
PT. MCKENZ B & B FARMS			N.D.		N.D.		N.D.		CO*(N)	N.D.
	BARLEY		N.D.		N.D.		N.D.		(CO)	
	BASKIN FARM		N.D.		N.D.		N.D.		CO*?	
	BETH		N.D.		N.D.		N.D.		--	
	CARPENTIER	176	N.D.		CO*	1	N.D.		CO(T)	
	FARMER	21	N.D.		PA*?		PA*?		PA*(N)	1
	KNIK		N.D.		N.D.		N.D.		--	
	LORRAINE	132	N.D.		CO*?		CO*?		CO*?	
	THREEMILE		CO*(N)	1	CO*(N)	2	CO*(N)	2	CO*(N)	1
	TWIN ISLAND	151	N.D.		(CO)		N.D.		N.D.	
MEADOW	AIROLO		--		--		N.D.		N.D.	

Table 5. continued.

AREA	LAKE	ESTIMATED SURFACE AREA (ACRES) 1	1986		1987		1988		1989	
			SPECIES	# CHICKS SURV. 2	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.
	BAPTIST		(PA)		--		--		(PA)	
	BEAR PAW	45	(PA)		(PA)		N.D.		(PA)	
	BEHNKE		PA* (CO)	2	(CO)		(CO,PA)		(CO,PA)	
	BEAVER POND		N.D.		PA*	2	PA*	1	PA*(N)	0
	BEVERLY	42	CO(T)		CO(T)		CO(T)		CO(T)	
	BLODGETT	58	--		(CO)		(CO)		--	
	BRUCE	27	PA*	2	PA*	1	PA*	1	PA(T)	
	CAROUSEL		--		--		(CO)		N.D.	
	CHERI		--		--		(PA)		(CO)	
	CLOUDY		PA*	2	PA*(N)	0	PA*(N)	2	PA*(N), (CO)	1
	CORCORAN		N.D.		N.D.		N.D.		(PA)	
	DOUBLOON		PA*?		--		(PA)		(PA)	
	FOREST (MI 52.5)	10	--		--		--		N.D.	
	FROG	64	--		CO*?		(CO)		CO(T)	
	FULLER		--		(CO)		CO*?		CO*(N)	1?
	HAWK LANE		--		--		N.D.		N.D.	
	HERKIMER		N.D.		N.D.		N.D.		(PA)	
	ISLAND	75	CO*?		CO*?		CO*(N)	0	CO*(N)	0
	JUNE	65	--		--		(CO)		--	
	KABN TOWER POND		N.D.		--		N.D.		N.D.	
	KALMBACH	125	CO*	1	CO*(N)	1	CO*(N)	2	CO*(N)	2
	LALEM	92	CO*(N)	1	CO*(N)	0	(PA), CO*(N)	2	CO*(N)	2
	LILLEY		N.D.		N.D.		N.D.		(PA)	
	LITTLE		--		--		--		--	
	LOON	108	PA*?		(PA, CO)		(PA)		PA*	1
	MARYBELLE		CO*?		CO*?		(CO)		(PA, CO)	
	MEADOW LKS CNR.		--		--		N.D.		N.D.	
	MISTY		N.D.		--		--		N.D.	
	MORVRO	87	CO*	0	CO*(N)	1	CO*(N)	2	CO(T)	
	PKS HWY & BIG LK		N.D.		N.D.		N.D.		PA*?	
	POLAR BEAR POND		N.D.		N.D.		N.D.		(PA)	
	PRATOR	98	N.D.		(PA)		(CO)		--	
	RAINBOW		CO*(N)	1	CO*(N)	0	CO*(N)	1	CO*(N) 3	1
	RAINBOW POND		--		--		--		N.D.	
	RR-PITTMAN POND		--		--		N.D.		N.D.	



Table 5. continued.

AREA	LAKE	ESTIMATED SURFACE AREA (ACRES) 1	1986		1987		1988		1989	
			SPECIES	# CHICKS SURV. 2	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.
BEAVER	SCOTT		CO*(N)	1	CO*(N)	0	CO (T)		CO(T)	
	SEYMOUR	229	(CO)		(CO)		(CO)		(CO)	
	SHERWOOD		PA*	0	PA*(2N)	0	PA*(N)		PA*(N)	1
	TOAD		CO*?		CO*	1	CO*	2	CO*(N)	1
	VISNAW	131	CO*(N)	1	CO*	1	CO (T)		CO(T)	
	BEAVERHOUSE	33	CO*	N.D.	CO*	1?	CO*?		CO*(N)	1
	BEAVERTAIL	27	N.D.		N.D.		(PA)		PA*	1
	(BIG) BEAVER	161	--		CO*?		(CO,PA)		(CO)	
	BOTTLE		N.D.		PA*?		PA*?		PA*?	
	COLT		N.D.		--		N.D.		N.D.	
	GODIN'S POND		N.D.		(PA)		PA*?		(PA)	
	HORSESHOE	160	N.D.		CO*?		(CO)		(CO)	
	HOURLASS		CO*?		CO*?		(CO)		(CO)	
	LAZY	23	PA*	2	PA*	2	(CO), PA*	0	PA*(N)	1
	LITTLE BEAVER	44	N.D.		CO*	1	CO*?		CO*(N)	0
	LITTLE HORSESHOE (WEST)		N.D.		CO*?		(CO,PA)		(CO,PA)	
	LONG/TWIN	44/63	CO*	0	CO*(N)	1	CO*(N)	2	CO*(N)	1
	LYNDA	11	--		(PA)		--		N.D.	
	ROGERS RD CORNER		N.D.		--		N.D.		N.D.	
	STEPAN	60	--		CO*?		--		(CO)	
	WEST BEAVER	103	--		--		N.D.		--	
BIG LAKE	BIG LAKE	2998	3 CO*, (PA,RT)	0,1,2	2 CO*(N) (PA,RT)	1,1	2 CO*(N), (PA,RT)	0,1	2 CO*(N), (PA)	1,1
	BIRCH		N.D.		(PA)		N.D.		N.D.	
	BL #1		N.D.		N.D.		--		N.D.	
	BL #2		N.D.		N.D.		--		N.D.	
	BL #3		N.D.		N.D.		PA*(N)	0	N.D.	
	BL #4		N.D.		N.D.		(PA)		N.D.	
	BL #5		N.D.		N.D.		--		N.D.	
	BL #6		N.D.		N.D.		--		N.D.	
	CROOKED	250	CO*(N)	2	CO*(2N)	2	CO*(N)	2	CO*(2N)	0
	CROOKED ANNEX		N.D.		N.D.		N.D.		(CO)	
	CROOKED OUTLET		N.D.		(CO)		(CO)		(CO)	
	DAWN	12	N.D.		(CO,PA?)		(CO)		--	
	DIAMOND	139	N.D.		N.D.		CO*	0	CO*(N)	1

Table 5. continued.

AREA	LAKE	ESTIMATED SURFACE AREA (ACRES) 1	1986		1987		1988		1989	
			SPECIES	# CHICKS SURV. 2	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.
WILLOW	DUSK		N.D.		--		--		N.D.	
	EAST PAPOOSE	179	N.D.		N.D.		--		N.D.	
	ECHO	109	CO*?		(CO)		(CO,PA)		(CO)	
	FLAT	296	(CO,RT)		CO*(N) <sup>3</sup>	1	CO*(N*), (RT) <sup>3</sup>	1	CO*(2N*) <sup>3</sup>	1
	HOMESTEAD		N.D.		N.D.		(PA)		(PA)	
	KATHLEEN		N.D.		N.D.		PA*?		N.D.	
	MARION	113	N.D.		CO*?		CO*	0	CO(T)	
	MARION POT HOLE S.		N.D.		N.D.		(RT)		--	
	NEVER-NEVER	31	N.D.		N.D.		--		N.D.	
	ORCHID	19	N.D.		N.D.		PA*?		N.D.	
	ROCKY	59	--		--		(CO,PA)		(CO,PA)	
	SARA	44	(CO)		(CO)		(CO)		(CO)	
	SEVENMILE	158	N.D.		N.D.		CO*	17	N.D.	
	SPICKY		N.D.		N.D.		--		N.D.	
	STEPHAN-LOWER		N.D.		CO*?		CO*?		CO*?	
	STEPHAN-UPPER		N.D.		CO*?		CO*?		CO*?	
	SUSAN		CO*(N)	1	CO*	2	CO*(N)	2	CO*(N)	1
	"TRANQUILITY"		N.D.		N.D.		PA*	1	(PA)	
	WOODY		N.D.		(CO)		N.D.		N.D.	
	ARC		--		N.D.		N.D.		N.D.	
	ARDAW		CO*?		CO*?		CO*?		CO*(2N?)	0
	BAINS		N.D.		--		N.D.		N.D.	
	BALD	38	PA*	0	PA*?(CO)		CO*?		CO*(N)	N.D.
	BIG MOLUCK	68	PA*	1	CO*?		--		(CO)	
	BOOT		N.D.		(CO)		N.D.		N.D.	
	BROOKS (MI 68.3)		PA*	N.D.	PA*	1	N.D.		N.D.	
	BUCKLEY		N.D.		CO*?		CO*?		(CO)	
	BUTTERFLY	295	N.D.		CO*	1	CO*?		(CO)	
	CANDLESTICK		N.D.		N.D.		CO*?		(CO)	
	CHARR	38	--		CO*?		--		(CO)	
	CHICKEN	138	(CO)		CO*	17	CO*?		(CO)	
	CRYSTAL	132	CO*(N)	1	CO* <sup>3</sup>	2	CO*(N) <sup>3</sup>	1	CO*(N) <sup>3</sup>	0
	ECHO PONDS		N.D.		(CO)		N.D.		(CO)	
	FLORENCE	55	CO*?		CO*	1	CO*(N)	0	CO*(N)	0
	(BIG) FRAZIER	70	CO*?		CO*?		(CO)		(CO,PA)	

Table 5. continued.

AREA	LAKE	ESTIMATED SURFACE AREA (ACRES) 1	1986		1987		1988		1989	
			SPECIES	# CHICKS SURV. 2	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.	SPECIES	# CHICKS SURV.
	GENE		N.D.		N.D.		N.D.		(CO,PA)	
	HONEYBEE	58	CO*?		CO*(N)	1	CO*(N)	?	CO*(N)	2
	JACK		N.D.		CO*	1	CO*(N)	0	N.D.	
	JACKNIFE		(PA)		(CO,PA)		(CO)		(PA)	
	JAMES	104	(CO)		CO*?		CO*	1?	CO*(N)	0
	JOHN		CO*(N)	0	CO*(N)	1	CO*(N)	0	CO(T)	
	JW#1 (LONG LK RD)		PA*(N)	0	PA*(N)	0	PA*?		PA*?	
	JW#2 (LONG LK RD)		PA*(N)	0	PA*	2	PA*?		PA*?	
	JW#3 (MI 1 NLSRA)		PA*(N)	0	PA*(N)	0	PA*	1?	(PA)	
	JW#4		PA*(2N)	0	PA*?		PA*	1?	--	
	KELLY	30	N.D.		CO*	0	(CO)		CO*(N)	0
	LITTLE FRAZIER	25	--		CO*?		CO*	1	(CO,PA)	
	LITTLE LOWELY	56	N.D.		(CO?)		N.D.		CO*?	
	LITTLE NOLUCK	34	PA*	1	PA*	1?	PA*?		PA*(N)	0
	LONG	218	CO*(N)	0	CO*(N) <sup>3</sup>	1	CO*(N) <sup>3</sup>	2	CO*(2N) <sup>3</sup>	1
	LYNNE	70	CO*(N)	0	CO*(N)	0	CO*(N)	0	CO*(N)	0
	LYNX	315	N.D.		(PA,CO)		CO*(N), (PA)	1	CO*(2N)	1
	MILO	60	--		CO*?		(PA)		CO*(PA)	1
	NANCY	761	N.D.		CO*	0?	CO*?, (PA)		CO*	2?
	NORTH ROLLY	118	N.D.		N.D.		CO*	1	CO*(N)	N.D.
	OWL	60	CO*?		CO*?		CO*	1?	CO*(N)	0
	RAINBOW	166	(CO)		N.D.		CO*(N)	2	CO*(N)	1
	RED SHIRT	1183	N.D.		N.D.		4 CO*	6	CO*	2?
	SHIRLEY	120	CO*(N)	0	CO*	0	CO (T)		CO*(N), (PA)	0
	SKEETNA	66	--		CO*?		N.D.		CO*?	
	SOUTH ROLLY	108	CO*	1	CO*?		N.D.		CO*(N)	N.D.
	TANAINA(DENAINA)	109	(CO)		CO*?		CO*?		CO*?, (PA)	
	VERA	111	N.D.		CO*	0	CO*(N)	0	CO*?	
	WILLOW	143	CO*	0	CO*(N)	2	CO*(N)	1	CO(T)	
HAT. PASS	SANDALWOOD		N.D.		N.D.		PA (T)		N.D.	
	HP-2		N.D.		N.D.		--		N.D.	
	HP-3		N.D.		N.D.		(PA)		N.D.	
	HP-4		N.D.		N.D.		--		N.D.	
	HP-7 (CABIN LK)		N.D.		N.D.		--		N.D.	
	SUMMIT		N.D.		N.D.		(CO)		N.D.	

Table 5. continued.

AREA	LAKE	ESTIMATED SURFACE AREA (ACRES) 1	SPECIES	1986	SPECIES	1987	SPECIES	1988	SPECIES	1989
				# CHICKS SURV. 2		# CHICKS SURV.		# CHICKS SURV.		# CHICKS SURV.
	TWELVEMILE	56	N.D.		PA*	2	N.D.		PA*(N)	?

1 = ADF&G Sport Fish stream files.

2 = chicks seen >1/2 adult size

3 = signs placed near nest site

4 = Juveniles captured, banded and transported to Seward after iced in on lake

CO = Common Loon(s)

PA = Pacific Loon(s)

(CO) or (PA) = nonbreeder(s) seen only

CO\* or PA\* = breeding pair (nest, eggs or chicks seen)

CO\*? or PA\*? = possible breeding pair

(N) = nest site known

(2N) = 2 nests found

(N\*) = nest on artificial island

(T) = territorial pair, but no nest

N.D. = no data

Table 6. Summary of Matanuska-Susitna loon data from Table 5.

	1986	1987	1988	1989
TOTAL # LAKES SURVEYED	119	158	156 (plus 11 <3.5 ac)	144
# LAKES USED BY COMMONS	53 (44%)	90 (57%)	89 (57%)	97
# LAKES USED BY BREEDING COMMONS	29 (24%)	37 (23%)	38 (24%)	40
# CO BREEDING PAIRS	31	39	42	41
# POSSIBLE CO BREEDING PAIRS	12	28	14	9
# TERRITORIAL PAIRS WITH NO NEST	N.D.	N.D.	4	11
# CO CHICKS	21	32	43-48 (from 38 pairs)	28-41
KNOWN COMMON LOON REPRODUCTIVE RATE				
known # chicks/# breeding pairs w/chick data	0.68	0.85	1.1	0.77
MINIMUM COMMON LOON REPRODUCTIVE RATE				
# chicks/# known + possible + terr. breeding pairs	0.49	0.48	0.72	0.46
# LAKES USED BY PACIFICS	22 (18%)	29 (18%)	38 (24%)	40
# LAKES USED BY BREEDING PACIFICS	13 (11%)	13	10 (6%)	10
# PA BREEDING PAIRS	13	13	10	10
# POSSIBLE PA BREEDING PAIRS	2	6	7	4
# TERRITORIAL PAIRS WITH NO NEST	N.D.	N.D.	1	1
# PA CHICKS	10	12	8 (from 8 pairs)	5-6
KNOWN PACIFIC LOON REPRODUCTIVE RATE				
known # chicks/# breeding pairs w/chick data	0.77	0.92	1.0	0.6
MINIMUM PACIFIC LOON REPRODUCTIVE RATE				
# chicks/# known + possible + terr. breeding pairs	0.67	0.63	0.44	0.3

Table 7. Common (CO) and Pacific (PA) Loon observations submitted from 81 other lakes in the Matanuska-Susitna Valley and Kenai during 1989.

AREA	LAKE	# ADULTS	SPECIES	OBSERVATION DATES	# CHICKS SEEN	# CHICKS SURVIVING	OBSERVERS / COMMENTS
KENAI	ARC (SOLDOTNA)	0		6/2 OR 3			A & L HOFFMAN
	BECK	2(-8)	CO*	5/2-7/16(-10/3)	1	0	B. CLOUD/LOONS LEFT 7/16
	BOTTENINEN	2	CO*?	5/19			C. TYGER
	BREEZE	1	CO*?	6/15			C. TYGER
	EGUMEN	0		6/2 OR 3			A & L HOFFMAN
	GOOD	2	CO*	SUMMER	2	2	PER B. CLOUD
	KELLY	2	CO*?	6/2 OR 3			A & L HOFFMAN
	KING (KNWR)	2(-6)	CO*	7/18	2		T. ROTHE
	LOW. OHMER-SKILAK	2	CO*(N)	DATES 5/23-8/6		?	D & J AMON, C. TYGER/NEST ON ADJACENT SMALL POND
	MARIE	2	CO*(N)	5/3			N. EVANSON/NEST IN SAME SITE FOR 15 YRS.
	PETERSON (MI 69)	2	CO*?	6/2 OR 3			A & L HOFFMAN
	LOWER SKILAK	2	CO*?	6/5			C. TYGER
	STORMY (CA. CK PK)	2	CO*(N)	6/13			L. ACREE
	POMEROY(KACH.BAY)	2	CO*(N)	DATES 5/6-7/30	2	1?	D. FARNSWORTH/STARTED NESTING 6/9
	WATSON	0		6/2 OR 3			A & L HOFFMAN
SWAN. RIVER	BIG MERGANSER LK	2	CO*?	6/2 OR 3			A & L HOFFMAN
	BREEZE	1	CO*?	6/2 OR 3			A & L HOFFMAN
	DABBLER	2	CO*?	6/2 OR 3			A & L HOFFMAN
	DOLLY VARDEN	2	CO*?	6/2 OR 3			A & L HOFFMAN
	FISH	1	CO*?	6/2 OR 3			A & L HOFFMAN
	LITTLE MERGANSER	0		6/2 OR 3			A & L HOFFMAN
	MI 3.5 SWAN LK	2	PA*?	6/2 OR 3			A & L HOFFMAN
	MI 6.3 SWAN LK	0		6/2 OR 3			A & L HOFFMAN
	MI 6.7 SWAN LK	0		6/2 OR 3			A & L HOFFMAN
	MI 7.8 NORTH	0		6/2 OR 3			A & L HOFFMAN
	MI 7.8 SOUTH	1	CO	6/2 OR 3			A & L HOFFMAN
	MI 10 NW	2	PA*?	6/2 OR 3			A & L HOFFMAN
	MI 12.6 W	2	CO*?	6/2 OR 3			A & L HOFFMAN

Table 7. continued

AREA	LAKE	# ADULTS	SPECIES	OBSERVATION DATES	# CHICKS SEEN	# CHICKS SURVIVING	OBSERVERS / COMMENTS
	MOSQUITO	0		6/2 OR 3			A & L HOFFMAN
	PORTAGE	0		6/2 OR 3			A & L HOFFMAN
	RAINBOW	0		6/2 OR 3			A & L HOFFMAN
	SUCKER	1	CD*?	6/2 OR 3			PER A & L HOFFMAN
	WEED	0		6/2 OR 3			A & L HOFFMAN
SWAN LK C.S.	PORTAGE						SEE ABADIE & CHOATE REPORT & FIELD NOTES
	UNNAMED						"
	BIRCH						"
	TEAL						"
	RAVEN						"
	SWAN						"
	UNNAMED						"
	LOON						"
	CLAM						"
	MOOSEHORN						"
KNWR	CANOE						"
	CANOE CHAIN 1						"
	CANOE CHAIN 2						"
	CONTACT						"
	MARTEN						"
	SPRUCE						"
	TROUT						"
	GAVIA						"
	KONCHANEES						"
	CYGNET						"
	JIGSAW						"
	ARROW						"
	BRATLIE						"
	CALF						"
	ICE						"
	COW						"
	VIXEN						"
	MIDDLE FINGER						"
	SOUTH FINGER						"

Table 7. continued

AREA	LAKE	# ADULTS	SPECIES	OBSERVATION DATES	# CHICKS SEEN	# CHICKS SURVIVING	OBSERVERS / COMMENTS
	LONGHIKE and others						" "
TALKEETNA	BENKA	2	CO*?	5/22			C. BAER
	BYERS	2	CO*	JULY, 8/17	2	2?	D & J AMON, D. PORTER & D. JOHNSTON/NEW NEST SITE
	EAST SUNSHINE	1-9	CO	SUMMER			J & L BUSKIRK/SHOT LOON <sup>1</sup> RETRIEVED FROM ICE 11/6
	FISH	4	CO*?	5/29			S. WICKS
	NO. & SO. FRIEND	2	CO*	8/7-8	1	1?	C. BAER
	LIFE	1-2	CO*(N)	DATES 5/17-10/13	0	0	K. CASSITY/NEST BUILT AT NEW SITE, NOT USED?
	MI 123.6 EAST	2	PA*	8/19	1	1	D. PORTER/1ST YR LOOMS SEEN HERE
	ROKITA (MI 96.5)	2	CO*?	6/3			D. NEWKIRK
	QUESTION	2	CO*?	5/28			S. WICKS
	SEPT	1-2	CO	DATES 5/15-8/31			J. KAUPP
		1	PA	7/4, 7/9			J. KAUPP
	X LAKE	0		5/24-26			C. BAER
EUREKA	VICT. BIBLE CAMP	1	CO <sup>2</sup>	10/30			VIA ADF&G PALMER
N&W WILLOW	MIDDLE CASWELL	2, 6		5/11, 6/1			M. BIGGAR
	DERF	2	CO*(N)	JUNE, 8/5			
	DIVENS- YENTNA R	2	PA*	DATES MAY-MID AUGUST	1	1?	M. DIVENS
	FLORINE	1-3	CO*(N)	6/25, 7/15, 9/11			D. LAW
	NEILL	2	CO*	DATES 5/29-9/30	2	2	C. BASS/2 CHICKS EVERY YR SINCE 1986
SKWENTNA	SEVENMILE	2-4	CO (T)	DATES 5/26-10/8			J & B COLES/NO CHICKS SINCE 1981

<sup>1</sup> Loon captured, banded, color wing-tagged and released on mouth of Buskin River, Kodiak on November 11, 1989.

<sup>2</sup> Juvenile loon captured, banded, color wing-tagged and released near Eagle River campground on November 1, 1989.



Table 8. Lakes with past history of breeding or territorial Common Loon pairs surveyed in 1989 after the Exxon Valdez oil spill.

AREA	LAKE NAME	5/89	6/89 OR LATER	YR BREEDING	REFERENCE	COMMENTS
		SURVEY	SURVEY	OR TERRITORY		
SUTTON	SEVENTEENMILE	CO*(N)	CO*(N)	1987	ADF&G LOON WATCH	
PALMER	KEPLER	N.D.	(CO)	1986	ADF&G LOON WATCH	
WASILLA	ANDERSON	2 CO	CO*(N)	1988	ADF&G LOON WATCH	
	CORNELIUS	CO*(N)	CO*(N)	1988	ADF&G LOON WATCH	
	JACOBSEN	CO*(N)	CO*(N)	1988	ADF&G LOON WATCH	
	KINGS	N.D.	CO(T)	1988	ADF&G LOON WATCH	POSSIBLE NEW MATE OR PAIR? NO ARRIVAL INFO
	LUCILLE	CO*(N)	CO*(N)	1988	ADF&G LOON WATCH	
	MEMORY	2 CO	CO(T)	1988	ADF&G LOON WATCH	2ND YR NON BREEDING
	NEKLASON	2 CO	(CO,PA)	1987	ADF&G LOON WATCH	4TH YR NON BREEDING
	WALLACE	2 CO	CO(T)	1988	ADF&G LOON WATCH	1 WK BETWEEN ARRIVALS - BREEDERS FOR 3 YRS BEFORE
	WOLF	CO*(N)	CO*(N)	1988	ADF&G LOON WATCH	
	PT. MCKENZIE	CARPENTIER	2 CO	CO(T)	1987	ADF&G LOON WATCH
THREEMILE		N.D.	CO*(N)	1988	ADF&G LOON WATCH	
MEADOW	ISLAND	2 CO	CO*(N)	1988	ADF&G LOON WATCH	
	KALMBACH	2 CO	CO*(N)	1988	ADF&G LOON WATCH	
	LALEN	CO*(N)	CO*(N)	1988	ADF&G LOON WATCH	
	MORVRO	N.D.	CO(T)	1988	ADF&G LOON WATCH	2ND YR NON BREEDING
	RAINBOW	2 CO	CO*(N)	1988	ADF&G LOON WATCH	
	SCOTT	2 CO	CO(T)	1988	ADF&G LOON WATCH	2ND YR NON BREEDING
	TOAD	N.D.	CO*(N)	1988	ADF&G LOON WATCH	
	VISNAW	2 CO	CO(T)	1988	ADF&G LOON WATCH	2ND YR NON BREEDING
BEAVER	BEAVERHOUSE	2 CO*	CO*	1988	ADF&G LOON WATCH	
	LITTLE BEAVER	N.D.	CO*(N)	1988	ADF&G LOON WATCH	
	LONG/TWIN	2-3 CO	CO*(N)	1988	ADF&G LOON WATCH	
BIG LAKE	BIG LAKE	2 CO*(N)	2 CO*(N)	1988	ADF&G LOON WATCH	
	CROOKED	CO*(N)	CO*(N)	1988	ADF&G LOON WATCH	
	DIAMOND	CO*	CO*	1988	ADF&G LOON WATCH	
	FLAT	CO*(N)	CO*(N)	1988	ADF&G LOON WATCH	
	MARION	2 CO	CO(T)	1988	ADF&G LOON WATCH	BOTH SEEN IMMEDIATELY AFTER ICE-OUT
WILLOW	SUSAN	2 CO	CO*(N)	1988	ADF&G LOON WATCH	
	BALD	CO*(N)	CO*(N)	1988	ADF&G LOON WATCH	
	BUTTERFLY	1-2 CO	(CO)	1987	ADF&G LOON WATCH	PR PRESENT 1988 - INEXPERIENCED OBSERVER IN 1989
	CHICKEN	0	(CO)	1988	ADF&G LOON WATCH	PR PRESENT 1988 - INEXPERIENCED OBSERVER IN 1989
	CRYSTAL	2 CO	CO*(N)	1988	ADF&G LOON WATCH	
	FLORENCE	2 CO	CO*(N)	1988	ADF&G LOON WATCH	
	HONEYBEE	2 CO	CO*(N)	1988	ADF&G LOON WATCH	

Tab. 8 cont.

AREA	LAKE NAME	5/89 SURVEY	6/89 OR LATER SURVEY	YR BREEDING OR TERRITORY	REFERENCE	COMMENTS
				LAST DOCUMENTED		
KENAI NWR (per Abadie 1989)	JAMES	0	CO*(N)	1988	ADF&G LOON WATCH	
	JOHN	2 CO	CO(T)	1988	ADF&G LOON WATCH	NO DELAYED ARRIVALS
	KELLY	1-2 CO	CO*(N)	1987	ADF&G LOON WATCH	
	LITTLE FRAZIER	3 CO	(CO,PA)	1988	ADF&G LOON WATCH	BREEDING IN 1988 - INEXPERIENCED OBSERVER IN 1989
	LONG	4 CO	CO*(2N)	1988	ADF&G LOON WATCH	
	LYNNE	2-3 CO	CO*(N)	1988	ADF&G LOON WATCH	
	LYNX	CO*	CO*(2N)	1988	ADF&G LOON WATCH	
	NANCY	2 CO	CO*	1988	ADF&G LOON WATCH	
	NORTH ROLLY	N.D.	CO*(N)	1988	ADF&G LOON WATCH	
	OWL	N.D.	CO*(N)	1988	ADF&G LOON WATCH	
	RAINBOW	N.D.	CO*(N)	1988	ADF&G LOON WATCH	
	RED SHIRT	N.D.	CO*	1988	ADF&G LOON WATCH	
	SHIRLEY	N.D.	CO*(N)	1988	ADF&G LOON WATCH	
	SOUTH ROLLY	2 CO	CO*(N)	1987	ADF&G LOON WATCH	
	VERA	2 CO	CO*?	1988	ADF&G LOON WATCH	POSSIBLE NEW MATE? 1 SEEN 5/21, 2 ON 5/28 (LATE)
	WILLOW	2-3 CO	CO(T)	1988	ADF&G LOON WATCH	NESTING 1986-88, 2 DAYS BETWEEN ARRIVALS
	ARROW	2 CO	CO(T)	1980	SMITH 1981	
	BRATLIE	2 CO	CO*(N)	1978	BAILEY 1978	
	CYGNET	2 CO	CO*(N)	1980	SMITH 1981	
	KONCHAMEE	1 CO	CO(T)?	1978	BAILEY 1978	UNCERTAIN IF TWO SEEN WERE RESIDENT
	LONGHIKE	NONE	CO(T)?	1979	SMITH 1981	
	MIDDLE FINGER	CO*(N)	CO*(N)	1980	SMITH 1981	PAIR NESTING IN AREA
	SPRUCE	0-2 CO	CO(T)?	1979	SMITH 1981	NOT SURE IF PAIR IS RESIDENT
	SWAN	2-7 CO	2 CO(T)	1978	BAILEY 1978	
	TROUT	2 CO	CO(T)	1980	SMITH 1981	
	VIXEN	4 CO	2 CO*(N)	1980	SMITH 1981	

CO = Common Loon(s)

(CO) = nonbreeder(s) only seen

CO\* = breeding pair (nest, eggs, or chicks seen)

CO\*? = possible breeding pair

(N) = nest site known

(2N) = 2 nests found

(T) = territorial pair, but no nesting found

N.D. = no data