

1988 STATUS AND BREEDING SUMMARY OF PIPING PLOVERS AND COMMON TERNS
AT LAKE OF THE WOODS, MINNESOTA

15 August 1988

Stephen J. Maxson

Katherine V. Haws

Lewis W. Oring

This report summarizes 1988 field activities at Lake of the Woods (LOW) breeding sites for Piping Plovers and Common Terns. 1988 represented a transition from population monitoring of Piping Plovers by contract personnel to monitoring by MDNR personnel. Stephen Maxson coordinated population monitoring of Piping Plovers on Pine/Curry Island, served as principal investigator for plover research activities, and assisted with the common tern census. Katherine Haws coordinated Piping Plover census/survey at Rocky Point and Zipple Bay, coordinated predator management on Pine/Curry island, coordinated Common Tern census activities and assisted with the plover research. Lewis Oring acted in an advisory capacity and assisted with the plover research.

PIPING PLOVERS

Methods

In 1988 11 trips of 1-3 days were made to LOW between 12 May and 26 July (Table 1). The number of persons present varied from 1-4. Weather at LOW is highly variable and during most trips our research activities were hampered to some extent by wind, rain, or heat. We made regular observations of Piping Plovers at Morris Point and Pine/Curry Island. Intermittent observations were made at Zipple Bay (26 May), Rocky Point (8, 22 June, 12, 26 July) and Sable Island (16, 21 June).

Whenever Piping Plovers were observed, they were checked for bands and their breeding status was determined. Nests were located and hatching and fledging success was determined for each pair. Breeding adults that were

unbanded or were in need of new color bands were captured in nest traps or mist nets. Each was given a unique color code consisting of a USFWS band, an international flag, and 3 color bands. Chicks were captured by hand when 2-16 days of age. Each was given a USFWS band and one color band. Each brood was banded a distinct color.

Results

In 1988, water levels at LOW remained relatively low for the second consecutive year and in fact were substantially lower than during the years 1982-1986 (Table 2, Figure 1). This exposed broad, open beaches in all of the areas traditionally used by Piping Plovers. The southwest tip of Pine Island, which was separated from the main body of Pine/Curry Island in 1985, remained a separate island which we dubbed Tern Island. The western end of Pine Island adjacent to Tern Island was labeled West End.

In 1988 we banded 6 new adults, replaced bands on 12 adults, and banded 27 chicks (see Table 3 and attached Banding Schedule). Thirty adult Piping Plovers were present on the study sites (Table 4). This represents a slight increase in the total population on the Minnesota side of LOW from 26 in 1987. More importantly, the number of breeding birds rose from 14 in 1987 to 26 in 1988. The 9 breeding pairs on Pine/Curry Island were distributed as follows: Tern Island = 3 pairs, West End = 2 pairs, Oak Point = 4 pairs. One chick from 1987 returned as a breeding bird in 1988. No other 1987 chicks were seen.

We observed an additional 5 Piping Plovers on Sable Island. At least 2, and probably 4, of these were breeders. Ontario Ministry of Natural Resources personnel reported one nesting pair and a third bird on 12 June

prior to our visits (Heyens 1988). We apparently located the same nest they reported. On 22 July they checked the nest site again and observed 2 adult and 3 juvenile plovers.

Of the 13 clutches laid, 9 (69%) hatched (Table 5). The remaining 4 clutches were depredated. There was no evidence of storm damage to nests in 1988. Of the 36 chicks that hatched, 12-15 fledged. This represents a fledging rate of 33-42% or 1.0-1.25 chicks per pair (Table 6) and is the highest fledging rate since 1983. However, there is still substantial room for improvement. Chicks that failed to fledge apparently were depredated. Despite the predator management activities described below, we noted mink tracks at the following times and locations: Curry Island = 26 May, Oak Point = 9 June, 5 July, Tern Island = 27 May, 8, 15, 21 June, 19 July. Beaches at Tern Island, West End and Oak Point are preferred resting/roosting sites for Ring-billed, Herring, and Franklin's Gulls and often contained hundreds of these birds. Crows and Ravens were also observed in nesting areas on several occasions. While mink are certainly a major predator on eggs and chicks, the role of gulls and Corvids remains unclear.

COMMON TERNS

Common Terns, classified as a species of special concern in Minnesota, have been experiencing population declines in the great lakes states (Shugart and Scharf 1983). In surrounding states, the Common Tern is classified as endangered in Wisconsin, Illinois and Ohio, and threatened in New York and Michigan (Outhberg et al. 1984). There are only four primary breeding areas

for this species in Minnesota. Hatching success for this species has been low in recent years. Statewide in 1984, hatching success was only 29%, and fledging success was only 19% (McKearnan 1986).

In 1988, tern activity was documented concurrently with population monitoring of Piping Plovers. No terns were seen on 12-13 May. By 19 May some 200 terns were present at Tern Island. During a brief check of the colony on 26 May we found 8 nests, most of which contained one egg, and numerous scrapes. By 7 June all the nests had been depredated and only a few adults were present. One additional nest was found on 27 June, but essentially this traditional nesting site was abandoned for the 1988 season.

Three nests were found on West End on 27 May. Three additional nests were found on 14 July. None were successful.

Some of the terns from Tern Island apparently tried to renest on Morris Point. On 8 June we found 16 nests with eggs plus numerous scrapes. Approximately 60-80 terns were flying overhead. However, on 15 June, these nests had been depredated and only 6 adults were present.

At Oak Point, 11 nests were found on 7 June and 21 were found on 22 June. Average clutch size was 2.6. One chick was seen on 6 July but apparently none fledged.

Only 52 tern nests were found on Pine/Curry Island and Morris Point this year. This is the lowest number of tern nests reported since 1981 (Table 7). Nesting success was zero. Egg and chick predation by mink is suspected to be the primary cause of nest failure.

PREDATOR MANAGEMENT

In 1988, two means of controlling predators were used on Pine/Curry

Island and Morris Point; gull egg removal and trapping of mammalian predators. Egg removal was done by Jim Walton and Katherine Haws. Trapping was carried out by Jim Walton under contract to the MNR.

This year, Ring-billed Gulls did not nest on Tern Island in any numbers. Two nests with eggs were found. Eggs were removed and the nests destroyed. Several other Ring-billed Gull scrapes were found and destroyed. Franklin's Gulls, Herring Gulls, and Ring-billed Gulls roosted on the beaches of Pine/Curry Island in large numbers, as in previous years. Other avian predators observed included a Peregrine Falcon seen once on 25 May. Several Ravens were present and were thought to be nesting on the island. Likewise, 5-10 Crows were present and an active nest was found on 25 May.

Mammalian predators were present on the island and appeared to be the main cause of nest failure of Piping Plovers, Common Terns, Spotted Sandpipers, Killdeer, and ducks. Several freshly depredated Ring-billed gulls, Common Terns, and Lesser Scaup were also found during the season.

Trapping for mammalian predators commenced on 5 May and continued through 14 July, 1988. Number 1.5 and 2 leg-hold traps were set on the western third of Pine/Curry Island, Tern Island, and Morris Point. Traps were also set on Oak Point for two weeks early in the season and then removed. An average of 15 trap sets were active per night for a total of 1,065 trap nights. A male and female mink were taken off of West End, a male mink off Tern Island, and a male mink, striped skunk and woodchuck off of Morris Point. Numbers of mink and striped skunks removed equalled those removed in 1987 (Table 8). There was no evidence of foxes being present on Pine/Curry Island or Morris Point in 1988 (J. Walton, pers. comm.). A hollow log used as a mink den site on Tern Island was destroyed on 26 July.

Despite these predator removal efforts, predation continued to be a problem throughout the season as noted in the previous sections.

Acknowledgements

We thank B. Woodworth, E. Smith, P. Pickett, S. Ritter, N. Naegle, and P. Clark for assistance in the field.

LITERATURE CITED

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Table 1. Number of days spent on Pine/Curry Island - 1988.

Date	Maxson	Oring	Haws	Oring assistants	Nongame Assistants		No. of person-days	
					1	2		
May	12	X	X	X			3	
	13	X	X	X			3	
	19	X	X	X			3	
	25	X	X		X		3	
	26	X	X	X	X		4	
	27	X	X	X	X		4	
	June	7	X	X	X	X		4
8		X	X	X	X		4	
9		X	X		X		3	
15		X	X				2	
16		X	X				2	
21		X		X			2	
22		X		X			2	
23		X		X			2	
27		X				X	X	3
July		5	X					1
	6	X	X		X		3	
	7	X					1	
	14	X				X	X	3
	19	X				X	X	3
	26	X		X				2

Total 55

Table 2. Mean water levels (ft. above sea level) at Lake of the Woods, 1982-1988.

	May	June	July	August
1982	1059.3	1060.0	1060.1	1060.3
1983	1058.7	1059.0	1059.8	1059.7
1984	1058.9	1059.6	1060.5	1060.6
1985	1060.3	1061.0	1061.5	1061.0
1986	1060.6	1060.6	1060.5	1060.1
1987 /1	—	—	—	—
1988	1057.8	1057.9	—	1057.9

/1 Table will be updated when 1987 data are received.

aster Permit No. 08035

Banding Schedule
3-860 (Rev. 1985)

Master Permittee L. W. Oring, Dr.

OMB Approval # 101b-0006

Pine & Currie Island, 4 mi N. Hackett-Banding Locations—

Lake of the Woods Co., MN

Rocky Point, 1 mi ENE Arnesen

Lake of the Woods Co., MN

D
E
F

INCLUSIVE BAND NOS.
FROM 901-39422
THROUGH 39454
REPORT ONLY CONTIGUOUS
BAND NUMBERS

VD PREFIX: 901	COMMON NAME	AQU #	STATUS	AGE-SEX	REGION	LAT-LONG	LOC	DATE MO DAY YR
01								
02								
03								
04								
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22	394 Piping Plover	FAW:RR 277.0	601	AHY-F	250	485-0944	A	6-8-88
23		FAW:RB						6-9-88
24		FAM:WW						6-9-88
25	replaces 951-54077	FAW:RR						↓
26		FAR:BR						6-15-88
27		FAR:GG						6-16-88
28		FAR:BR						↓
29			300	HY		485-0950	B	6-22-88
30						485-0944	A	6-27-88
31								↓
32								↓
33		↓BA:-	601					↓
34		↓						7-6-88
35		↓WA:-						
36		↓						
37		↓						
38		↓						
39		↓MA:-						
40		↓BA:-						
41		↓RA:-						
42		↓						
43		↓BA:-						
44		↓						
45		↓GA:-						
46		↓						
47		↓BA:-						
48		↓GA:-						
49		↓						
50		↓RA:-						

Table 3. Adult Piping Plovers given new band combinations in 1988.

Band Number	Old band combination	New band combination	Sex	Location	Date
951-54048	-:A	WRW:FA /2	F	Pine Island	6-8-88
951-54077 /1	-:BA	FAdB:RR	M	Pine Island	6-15-88
861-04959	-:A	WdEW:FA	M	Oak Point	6-21-88
951-54124	-:BA	WGW:FA	M	Rocky Point	6-22-88

/1 951-54077 was replaced by 901-39425.

/2 Bands are read left leg top to bottom: right leg top to bottom.
W=white, R=red, dB=dark blue, B=light blue, G=green, F=green international flag, A=USFWS band.

Table 4. Population summary of Piping Plovers from 1982-88 at Lake of the Woods, Minnesota. /1

Year	Breeding birds				Non-breeders	Total
	Pine/ Curry Is.	Morris Point	Zippel Bay	Rocky Point		
1982	24	4	0	2	14	44
1983	32	6	2	2	7	49
1984	36	8	0	0	3-6	47-50
1985	19-36	4	0	-	1-2	24-42
1986	18	4	0	1	9-10	32-33
1987	12	2	0	-	12	26
1988	18	4	0	4	4	30

/1 1982-84 data from Wiens 1986.
 1985-87 data from Haig and Oring 1987.

Table 5. Reproductive success of Piping Plovers in 1988 by breeding location.

	Morris Point	Tern Island	West End	Oak Point	Rocky Point	Total
No. nests	2	3	2	4	2	13
No. eggs hatched	4	12	4	12	4	36
No. chicks fledged	0	6	1-2	5-7	0	12-15

Table 6. Reproductive success of Piping Plovers at Lake of the Woods, Minnesota from 1982-88. /1

Year	Chicks fledged	Chicks fledged/pair
1982	26	1.7
1983	44	2.1
1984	13	0.6
1985	7-10	0.4-0.5
1986	9	0.8
1987	2-21	0.3-3
1988	12-15	1.0-1.25

/1 1982-84 data from Wiens 1986.
1985-1987 data from Haig and Oring 1987.

Table 7. Number of Common Tern nests reported on Pine/Curry Island by year.

Year	No. nests
1932	1,000
1935	1
1979	50
1980	25
1981	44
1982	125
1983	130
1984	139
1985	209
1986	485
1987	168
1988	52

Table 8. Animals trapped and removed from Pine/Curry Island and Morris Point during spring and early summer of 1987 and 1988.

Species	1987	1988
Red Fox	2	0
Mink	4	4
Striped Skunk	1	1
Woodchuck	0	1

Figure 1,

MEAN WATER LEVEL (ft. above sea level) AT LAKE OF THE WOODS 1982-1988

