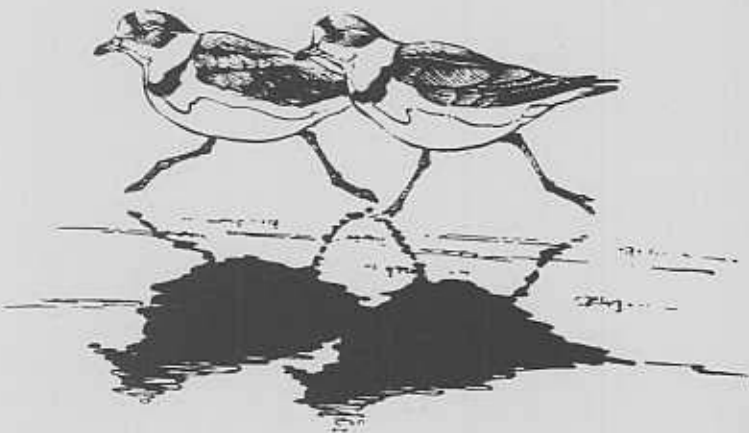


ST. LOUIS RIVER ESTUARY COLONIAL BIRD PROGRAM 1986

Prepared for The State of Minnesota, Department of Natural Resources



ST. LOUIS RIVER ESTUARY

COLONIAL BIRD PROGRAM

1986

Prepared for: Minnesota Department of Natural Resources,
Nongame Wildlife Program

Prepared by: Thomas E. Davis
Biological Consultant

TABLE OF CONTENTS

	<u>Page</u>
BACKGROUND	1
OBJECTIVES	3
METHODS	4
Discouragement Activities	4
Observations	6
Attraction Activities	6
Predator Control	6
Tern and Plover Discouragement	6
Censuses	6
Banding	7
RESULTS AND DISCUSSION	7
Discouragement Activities	7
Ring-billed Gull	7
Common Tern	7
Piping Plover	8
Attraction Activities	8
Hearding Island	8
Interstate Island	8
Barkers Island	8
Censuses	9
Ring-billed Gull	9
Piping Plover	12
Common Tern	12
MANAGEMENT RECOMMENDATIONS	14
Overall Program Direction	14
Censuses	14
Attraction Program	14
Discouragement Program	14
Hearding Island	14
Interstate Island	15
Barkers Island	15
Contaminants	15
Banding	15
Liaison	15
REFERENCES	16

BACKGROUND

During the past four years the Minnesota Department of Natural Resources has been involved in the development and implementation of a Colonial Bird Management Program for the St. Louis River estuary. The purpose of the program is to provide adequate, protected, long-term nesting sites for two species - the Common Tern and Piping Plover. This effort has been a cooperative effort of the Departments of Natural Resources in Minnesota and Wisconsin (MDNR and WDNR).

Concern for the terns and plovers, and thus the impetus for the program, stems from their precarious statewide and national status and the fact that they have experienced very poor nesting success the past several years in the estuary. The tern has an official status of Special Concern in Minnesota and is considered Endangered in Wisconsin. In addition, it is classified as a species of Special Emphasis in U.S. Fish and Wildlife Region 3 (Regional Resource Plan, USFWS 1983). The plover has an official status as Endangered in both states and this past year was designated a federally Endangered species in the U.S. Great Lakes by the U.S. Department of Interior.

For these reasons, a management program to perpetuate the nesting populations of these species in the St. Louis River estuary was proposed in 1977. This program has focused on providing secure nesting habitat since this appeared to be the primary problem. The emphasis has been on developing and maintaining nesting habitat on three islands (Hearding, Barkers, and Interstate) which lie in the lower estuary and close to the most recent nesting area used by both species - the Duluth Port Terminal property (Map 1). Hearinging Island lies in Minnesota waters, Barkers in Wisconsin, and Interstate astride the state line and thus in both states. Due to the locations with respect to state lines, Minnesota has assumed management responsibility for Hearinging Island, Wisconsin for Barkers Island, and both states jointly for Interstate Island.

All three islands are man-made and were created during the early 1900's as harbor sediments dredged to deepen shipping channels were deposited in various areas within the harbor. The resulting islands, offering broad, sandy beach habitat, constituted ideal nesting sites for the Common Tern and Piping Plover. Both Hearinging Island and Barkers Island have a documented history as major tern and plover nesting areas. However, due to the encroachment of vegetation including trees and shrubs, the islands eventually proved unsuitable as nesting sites. Prior to the implementation of this management program, neither terns nor plovers had been known to nest on the islands since the early 1960's.

Thus management of the islands has focused on removal of vegetation from portions of each in order to recreate the habitat which was attractive to the birds in earlier years. Eight acres were cleared on Barkers Island in 1981 while approximately 13

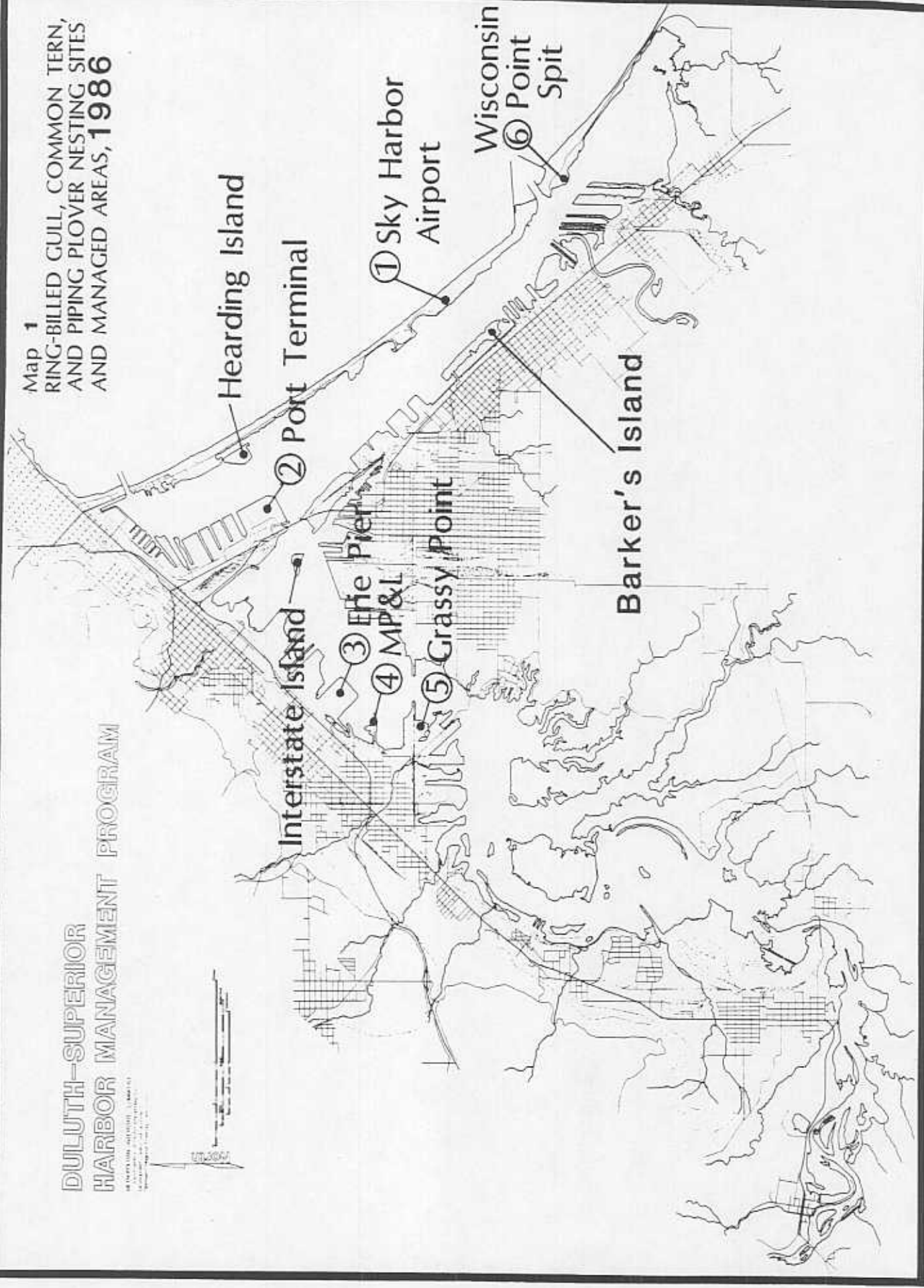
DULUTH-SUPERIOR HARBOR MANAGEMENT PROGRAM

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
DULUTH, MINNESOTA

UT 3000

Map 1

RING-BILLED GULL, COMMON TERN,
AND PIPING PLOVER NESTING SITES
AND MANAGED AREAS, 1986



acres were cleared on Hearing Island in 1983 and nearly all of Interstate Island (8 acres) in 1984. In 1985, another acre of trees was removed from Interstate Island due to use by a Great Horned Owl. This left only a few scattered trees and brush on the island and these were removed prior to the 1986 nesting season. These areas have been designated Wildlife Management Areas and trespass prohibited during the nesting season.

In addition to creating suitable nesting habitat for the target species, the management program has also included elements to more actively encourage the birds to nest on the islands. This has involved placing tern decoys and playing tapes of tern calls on the islands during the arrival and courtship stages. These attraction techniques have been used on Hearing and Barkers Islands since 1983 and Interstate Island beginning in 1985.

The past two years one further management tool was added to the program - the active discouragement of tern nesting at the Duluth Port Terminal and Erie Pier nesting sites. Reproductive success at both sites has been extremely poor for several years. Preventing the terns from nesting in these areas could not significantly lower success further but could increase the chances that the terns would successfully establish themselves and fledge young on the island management areas. Use of the Sky Harbor Airport site was also discouraged for the same reasons in 1986.

The above efforts have met some success in the past. In particular, during 1985, approximately 100 terns nested on Interstate Island and four terns on Hearing Island. Although no young fledged, the fact that the major portion of the tern population nested on the islands was a major breakthrough.

This report summarizes work done as part of the St. Louis River Estuary Colonial Bird Management Program during the 1986 nesting season. The work was done by this investigator under contract with the MDNR, Nongame Wildlife Program. During the early portions of the work, two field assistants were provided, one each by the MDNR and WDNR. Since Barkers Island is an integral part of this program and work on the island was coordinated with WDNR personnel, information pertaining to this site are included in this report.

OBJECTIVES

This study is the continuation of a program which has been underway for the past four years. The specific objectives of this year's work were:

1. To coordinate program activities between the MDNR, WDNR, local government, Port Terminal staff, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and local interest groups and citizenry.
2. To assist the MDNR in implementing plans for Hearing and Interstate Island Wildlife Management Areas.

- a. To provide recommendations to the MDNR regarding on-site vegetation management which may be necessary.
 - b. To implement plans to attract breeding Common Terns and Piping Plovers to the islands.
 - c. To implement plans to discourage Ring-billed Gull use of the islands as nesting sites.
 - d. To advise the MDNR of any need for predator control on the islands (e.g., removal of owls) and to assist in any efforts to remove problem animals.
3. To implement plans, if necessary, to discourage Common Tern use of traditional nesting sites that are highly disturbed or developed and where the birds' chances of success are quite low (i.e., the Port Terminal, Erie Pier, and Sky Harbor Airport sites).
 4. To census the Common Tern, Piping Plover, and Ring-billed Gull nesting populations in the St. Louis River estuary.
 5. To conduct a banding program in which a large portion of Common Tern chicks produced in the estuary would be marked so as to allow individuals to be identified by site and origin. This would be done in cooperation with the WDNR and was intended to determine if any movement of terns occurred between Duluth and Ashland, Wisconsin.
 6. To collect dead Common Tern chicks and adults and up to ten eggs for contaminant analysis.

METHODS

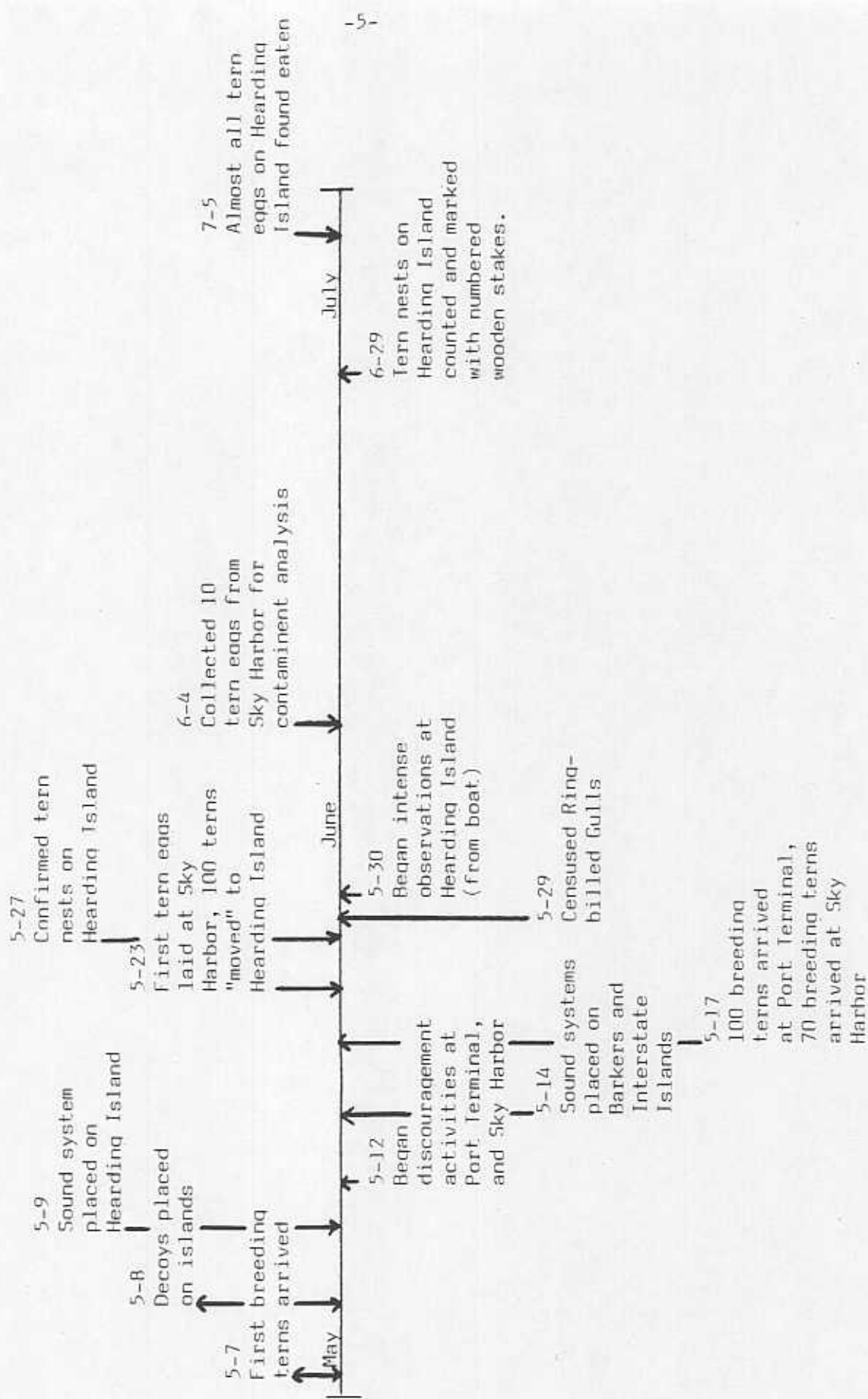
The methods used this year were essentially the same as in 1985 (Davis 1985). The major difference was the inclusion of the Sky Harbor site in discouragement Activities.

Discouragement Activities

Terns were discouraged from nesting at three sites this year - the Port Terminal, Erie Pier, and Sky Harbor Airport. The primary means of discouragement was human presence in the potential nesting areas during the arrival and courtship stages. Great Horned Owl decoys were also used extensively. They were placed in any area the terns appeared particularly interested in as a nesting site. The decoys were moved as required when the birds appeared to have habituated to their presence.

The planned disturbances usually involved walking and/or driving into any areas the terns appeared to be settling into. This was continued until the birds moved. This action was repeated as necessary. The disturbances usually took place for 6-10 hours each day with emphasis being placed on late afternoon to dusk when the birds were settling onto night roost areas.

Table 1. Chronology of major events and tasks performed.



These disturbance activities were begun immediately upon the arrival of breeding terns and continued until the birds abandoned the given site and/or egg-laying began (Table 1). At Erie Pier, no planned disturbances were necessary because ongoing dredged material deposition operations proved effective in keeping terns from nesting at this site. Disturbances at the Port Terminal and Sky Harbor began May 12 and continued to May 28.

It was not necessary to discourage Ring-billed Gull use of the islands since no nesting was attempted by this species.

Observations

Tern and plover use of the islands was assessed via regular offshore observations made from a boat. Each island was checked a minimum of three times a week during the arrival and courtship phase. This continued until discouragement activities had ended and breeding terns had obviously "settled" onto their nesting sites and laid eggs. At this time (May 23) observations focused on Hearing Island since it was the only Management Area being used by terns. Observations at Hearing Island were very intense during this period - ranging from 6 to 10 hours a day on almost all days. The purpose of this intense monitoring was to determine colony status/activity, as well as to note and deter human intrusions and predators. The other island sites were checked weekly at this time. Weekly checks were also made at other key sites including Sky Harbor, the Port Terminal, and Erie Pier.

Attraction Activities

Decoys of Common Terns were used to attract terns and plovers at all three management areas - Barkers, Hearing, and Interstate Islands. A total of 30 decoys in two groups of 15 each were placed on each island immediately after the arrival of the first breeding terns in the estuary (Table 1). They were left in place the entire nesting season.

In addition, portable tape playing systems which broadcast Common Tern calls during daylight hours were used on each island. These systems were operated from the time the decoys were placed on the islands until nesting had occurred or the nesting season had ended (early May to mid-July). For a detailed description of both the decoys and the tape system, see Davis (1983, 1984).

Censuses

All Common Tern, Piping Plover, and Ring-billed Gull nesting areas in the estuary were censused via total ground counts made during the peak of incubation for each species. In addition, Common Tern nests at Hearing Island and Sky Harbor Airport were marked with numbered wooden stakes and weekly nests and egg/chick counts made at these sites. A record of nest losses and predation and any production which occurred was kept until nests were no longer active.

Banding

Since no tern chicks survived to fledging, no banding was conducted.

Contaminants

Ten eggs were collected from the Sky Harbor colony early in incubation (June 4). The eggs were taken from ten separate nests, one egg from each, and only from nests with full three-egg clutches. The nests were selected randomly during a walk through the colony. The eggs were mailed to WDNR analytical lab in Madison, Wisconsin, for contaminants analysis.

RESULTS AND DISCUSSION

Discouragement Activities

Ring-billed Gull

As mentioned above, no discouragement of Ring-billed Gulls was required during the 1986 nesting season since no gulls attempted to nest in the management areas. As in prior years, gulls did use the beaches of the islands as loafing sites and a few individuals fed on the islands. Numbers ranged from a few birds to approximately 100 per island.

Common Tern

Terns were successfully discouraged from nesting at the three target areas - the Port Terminal, Erie Pier disposal site, and Sky Harbor Airport. No terns nested at Erie Pier, only four pairs at the Port Terminal, and approximately 33 pairs at Sky Harbor. The latter site proved difficult to work due to the large expanse of the area and conflicts with air traffic. In addition, several terns moved back to this area after it appeared they had been successfully discouraged. However, the 66 terns that eventually nested at Sky Harbor is only a portion of the initial 120 terns that showed intent to nest there during the early stages, and is appreciably lower than the 158 birds which nested there in 1985.

Discouragement activities at Erie Pier and the Port Terminal followed much the same pattern as in 1985 with the exception that at no time did a large group from any other site attempt to move to Erie Pier. Earth-moving activity at the latter site, conducted as part of the prescribed dredged material disposal program, proved sufficient to keep birds from nesting there and no focused activity was required as part of this project. Discouragement activities at the Port Terminal began on May 12, five days after the first breeding terns were observed, and continued for 16 days. At that point, most of the birds apparently moved to Hearding Island.

Attraction Activities

Hearding Island

The attraction program, in conjunction with the above described discouragement efforts, proved very successful in attracting breeding Common Terns to Hearding Island this year. In mid-May, during the arrival and courtship period, 10-16 adults were regularly seen at the island; and by late May this number grew to well over 100 as birds actively discouraged from using the Port Terminal and Sky Harbor congregated at the island. Eventually, 31 tern nests were found on the island.

Each nest was marked with a numbered wooden stake on June 29. At this time it was judged the eggs had been incubated approximately three weeks. On July 5, all but six nests were found preyed upon, i. e., all eggs had been eaten in these nests. The mass-eating of the eggs suggested a mammal was responsible, but no tracks were found. At a later point in the study, many mink tracks were found in the management area and local residents attested that they had seen mink around the island. Thus it appears most likely that mink were responsible for the depredation which occurred.

While Great Horned Owls appeared to be a potential problem on the island in the past, only one possible sighting was recorded this year, and area residents who often see and hear owls reported essentially no owl activity this year. Of the six nests not preyed upon initially, all but two were preyed upon within the next week. Two nests hatched young, but the chicks disappeared before fledging. Thus no production occurred on the island. No Piping Plovers were observed on the island this year.

Interstate Island

In contrast to 1985, no terns nested on Interstate Island in 1986. However, as many as 30 adults roosted on the island during much of the spring and early summer and some courtship was observed. This suggests the birds were interested, but not to the point of actually nesting. No Piping Plovers were observed on the island. Since no demolition activities relating to the adjacent Burlington Northern Railroad trestle were allowed until it was evident terns were not nesting on the island, these activities did not appear to affect use of the island this year.

Barkers Island

No Common Terns or Piping Plovers nested on Barkers Island this year, nor were any observed in the management area proper.

Censuses

The colonial birds under study nested at four locations in the estuary - the Port Terminal property, Sky Harbor Airport, the Minnesota Power Hibbard power plant, and the Hearding Island Wildlife Management Area (Map 1). Most notable regarding these populations are:

1. For the first time since its designation as a WMA, a large number of Common Terns nested on Hearding Island (31 nests).
2. No Piping Plover nests were found in the estuary for the first time in many years.
3. The Ring-billed Gull population increased appreciably once again (+1200 breeding birds).

The breeding populations at each site and estuary totals are given in Table 2. Data from previous years are included for comparative purposes. Estuary totals for the past decade are summarized in Figure 1. For data on specific sites prior to 1983, see Davis, 1985.

Ring-billed Gull

The Ring-billed Gulls nested at two locations in the estuary during 1986 - the Port Terminal property and the spit at the Minnesota Power Hibbard plant (MP). These sites have been used by this species since the early 1970's. No new nesting sites were noted. As in the past several years, gulls were often observed loafing on the beaches of Barkers, Hearding, and Interstate Islands.

The 1986 Ring-billed Gull breeding population was approximately 1200 birds greater than in 1985. All this increase occurred at the Port Terminal property. The increase at the latter site was actually 1900 breeding birds, but a decrease of about 700 nesters at the MP site resulted in an overall estuary increase of 1200. Thus the oft-mentioned Ring-bill explosion in the estuary appears to be continuing despite a decrease at the MP site.

The decrease observed at the MP site is a continuance of a change first noted in 1983. It was at this time that major changes in the nesting substrate and available nesting area occurred due to construction of the new Bong Memorial Bridge (Davis 1983). In 1983 the Ring-bill population at this site was near 1500 breeding birds compared to near 2400 breeding birds observed in earlier years. The population remained near 1500 through 1985, but this year dropped markedly (approx. 50% decline).

The population at the Port Terminal continued its spectacular growth. This year, for the first time, gulls nested on the snow piles left by city road crews. Common Terns used these snow piles in the past, and this merely accentuates the growing dominance of the Ring-billed Gull at this nesting site. The gulls appear to be making increased use of brushy willow areas as well, indicating this site will be used by the species for quite some time barring some major construction activities.

Although no objective assessment of Ring-bill reproductive success was made, the large number of chicks seen late in the year indicates the colonies are healthy and producing many young.

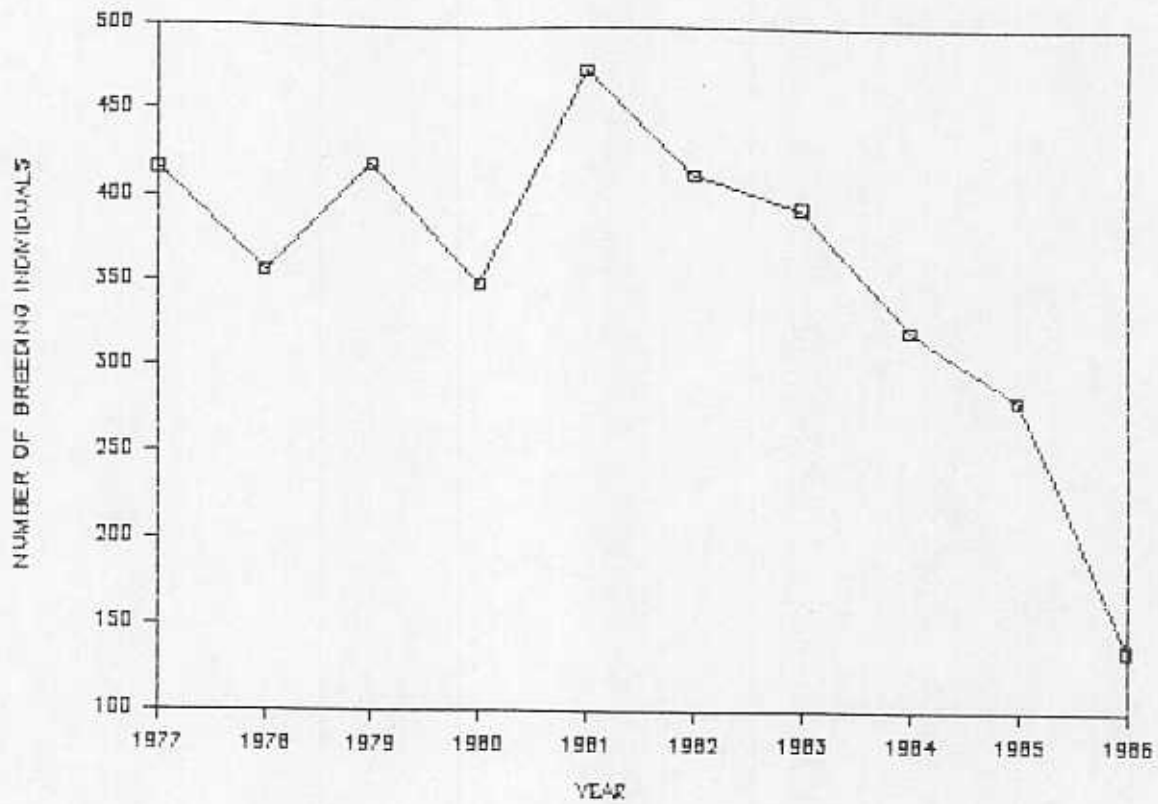


Fig. 1a. Common Tern Breeding Population in St. Louis River Estuary from 1977 through 1986.

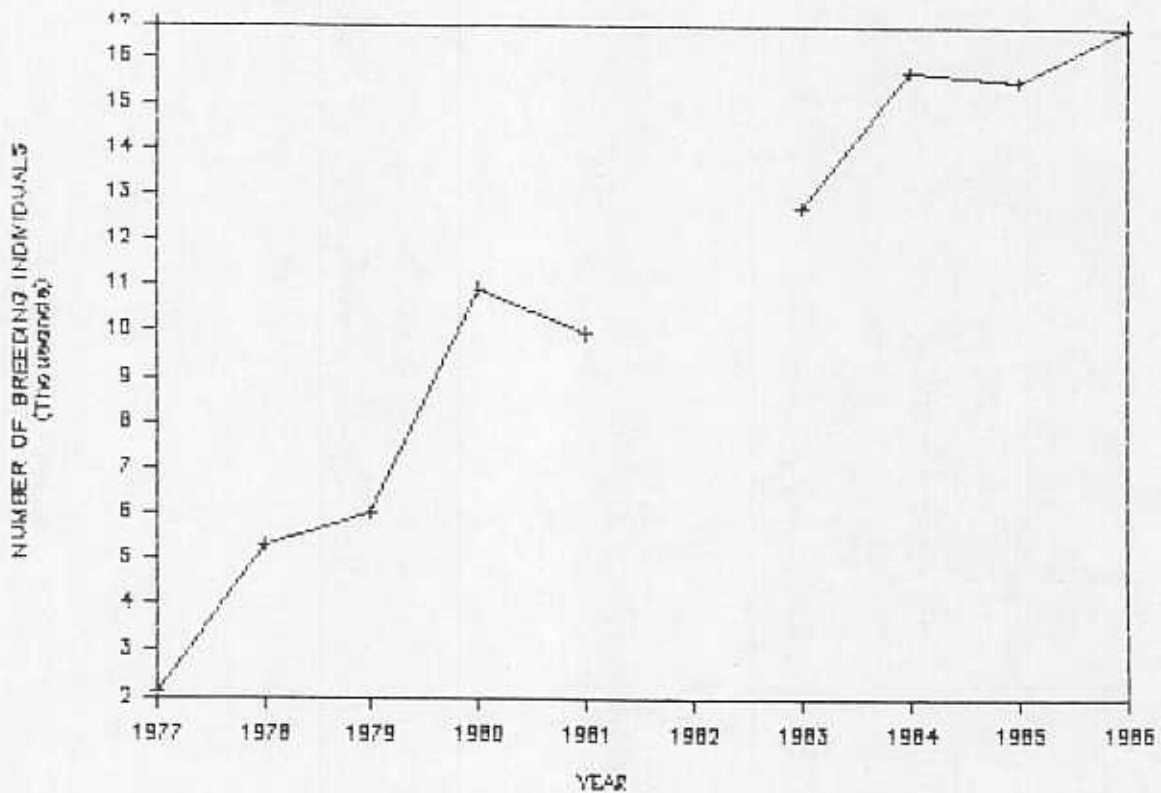


Fig. 1b. Ring-billed Gull Breeding Population in St. Louis River Estuary from 1977 through 1986.

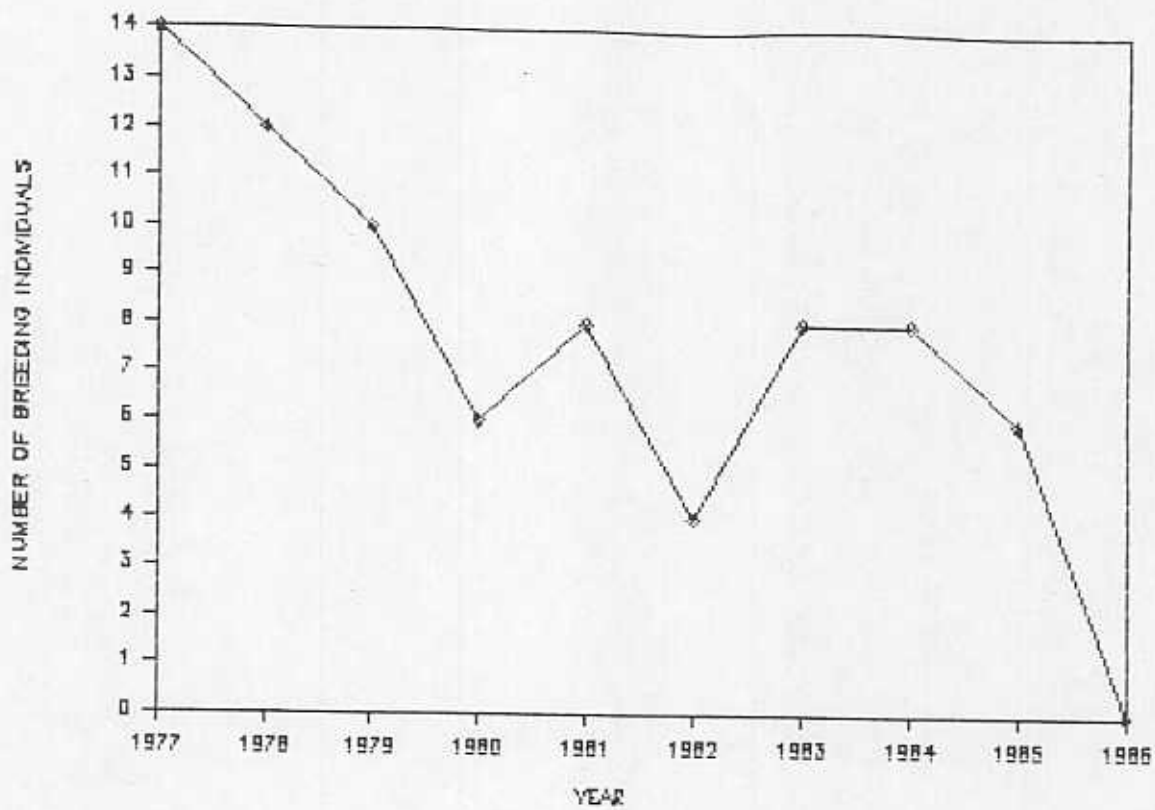


Fig. 1c. Piping Plover Breeding Population in St. Louis River Estuary from 1977 through 1986.

Piping Plover

1986 marks the first year in recent times that no Piping Plover nests were located in the St. Louis River estuary. This unfortunately is an event which was almost predictable given the lack of nesting success and steady population decline of the species over the past several years. It is this author's opinion that this may be the first time in modern history that no plovers have nested in the estuary.

It is worth noting that two Piping Plovers were observed in the spring at the Erie Pier disposal site. This area has been a nesting site for plovers in recent years. It is not known whether the birds seen were migrants or resident birds, but no nesting occurred. If these birds were breeding birds, it may be that the earth-moving activities which discouraged Common Terns from nesting there also affected the plovers.

It also is of interest that one of the birds sighted at Erie Pier had leg bands in place. While the exact pattern/color scheme was not clearly visible, it is known that this bird was not banded in Duluth. This same situation arose in 1985, and, as then, it is hypothesized that this bird may have come from the Lake-of-the-Woods population. If true, this is cause for some hope as this may mean the St. Louis River estuary population can be re-established via influx of birds from Lake-of-the-Woods.

Common Tern

The Common Tern breeding bird population appeared to drop dramatically in 1986 and thus continue the decline which was first noted in 1984 (see Figure 1). Only 68 active nests were found this year. Most of these were located at Hearing Island and Sky Harbor (Table 2). These figures may be somewhat misleading since many birds re-nested at Sky Harbor, making it difficult to really assess the total number of breeding birds present.

The largest number of terns observed in the estuary during the breeding season was approximately 210. This indicates that a number of non-breeding terns were present. This is corroborated by observations of 30-40 non-breeders which used Hearing Island and another 30 birds which roosted but did not nest on Interstate Island. However, even taking this into account, it appears the total number of adults in the harbor was down from 1985 when it was estimated that nearly 340 terns (breeders and non-breeders) were present (Davis 1985).

Common Tern nesting productivity in the estuary once again was zero. A few chicks did hatch at Sky Harbor and Hearing Island, but none of these fledged. The predation (suspected mink) has already been discussed with respect to Hearing Island. The events at Sky Harbor were much the same as reported the past several years, although the weekly nest inspections and marked nests gave a more concrete picture this year. Productivity at this site was zero due to predation by a Great Horned Owl and a

Table 2. Breeding populations of Common Tern, Ring-billed Gull, and Piping Plover at sites in the St. Louis River estuary, 1983-1986.

Site No. (see Map 1)	Location	Species	Number of Breeding Individuals			
			1983	1984	1985	1986
1	Sky Harbor Airport	Common Tern	58	58	158	66
		Piping Plover	0	0	2	0
2	Port Terminal	Common Tern	244	226	4	8
		Ring-billed Gull	11,216	14,206	14,030	15,938
		Piping Plover	6	4	2	0
3	Erie Pier	Common Tern	48	8	2	0
		Piping Plover	4	4	2	0
4	Minnesota Power Hibbard Plant	Ring-billed Gull	1,502	1,524	1,480	784
5	Grassy Point Islets	Common Tern	44	0	0	0
6	Wisconsin Point	Common Tern	no data	30	0	0
7	Interstate Island	Common Tern	0	0	100	0
8	Hearding Island	Common Tern	2	0	16	62
TOTALS FOR 1986						
		Ring-billed Gull				16,722
		Common Tern				136
		Piping Plover				0

red fox. Both have been a problem in the past. This year several owl sightings were made and fox tracks were in evidence around nests in which eggs had been eaten. It is worth noting that some eggs remained in nests, apparently abandoned. This again may indicate some viability problem (e.g. contaminants) or may merely reflect abandonment due to the predation.

MANAGEMENT RECOMMENDATIONS

Long-term management recommendations regarding this program were presented in last year's report (1985). In general, these recommendations remain valid and will not be reiterated here. What is given below is a discussion of the progress made on each of the above as well as any specific comments pertinent to their implementation in 1987 or recommended changes. The reader is referred to the 1985 report, Recommendations Section.

1. Censuses: The censuses were continued as recommended. An aerial survey of the Ring-billed Gull colony at the Port Terminal was tried, but vegetation and altitude limitations of the flight resulted in inadequate photos. This method does not appear suitable for future censuses. For the time being, continuance of absolute ground counts is recommended.
2. Attraction Program: The relative success on Hearding Island certainly raises its potential inclusion beyond the three-year "trial period" recommended. The lack of success on Barkers Island continued and it seems more and more evident that this site should be "traded" for some other site if possible. It is especially disheartening to see no activity at this site despite the discouragement of use at Sky Harbor Airport and subsequent relocation of many terns. These birds went to Hearding rather than Barkers Island. The primary modification of the Long-range Recommendation presented in 1985 is that sites besides additional newly created islands should be considered as "trade" for the present sanctuary at Barkers Island. In particular, the possibility of attaining a portion of the end of Wisconsin Point as plover/tern habitat should be seriously considered. Past use of the latter site by terns and plovers speaks well for its potential and it seems a good trade for the sanctuary which has not been used by plovers or terns since its inception.
3. Discouragement Activities: No change.
4. Hearding Island: Although no vegetation was removed prior to the 1986 nesting season, terns did use the island. Nevertheless it is apparent that the dense areas may provide cover for predators. Therefore areas of dense vegetation adjoining the area used for nesting in 1986 should be removed or "thinned". Furthermore, systematic plots should be established which will allow the efficiency of various means of removal to be assessed in coming years. Plots should also be established in the primary nesting area to monitor the rate of vegetation encroachment.

Finally, a project to trap out mink and/or other mammal predators should be initiated at the time of ice-out (approx. April). This effort should focus on removal of potential nest predators prior to arrival of breeding terns and plovers. Scent posts should be used throughout the nesting season to determine if any predators remain on the island.

NOTE: At the time of writing, the vegetation removal and establishment of study plots have been completed.

5. Interstate Island: No change. The trees located in the Minnesota portion of the buffer zone were removed prior to this year's nesting season, although the slash and brush piles remain. Demolition of the Burlington Northern railroad trestle was monitored carefully and was accomplished with no apparent detrimental effects on terns or plovers. Negotiations continue regarding transferral of the BN property to the State of Wisconsin. An agreement was reached with the demolition company in which it has agreed to place material on the island which can be used by the DNR to riprap portions of the shoreline requiring erosion protection. In addition, if it proves feasible for the company to place dredged material on the island (material to be dredged as part of demolitions project), it has agreed to perform actual riprapping and to eliminate the brush piles and cut down the few remaining trees. These agreements should be pursued. The sediments to be dredged were sampled for pollutants in August, 1986. A final determination has not been made by the Minnesota Pollution Control Agency as to whether these materials may be placed on the island.
6. Barkers Island: As indicated earlier in this report, the lack of success on Barkers Island indicates that potential land trades with the City of Superior should be pursued. In particular, earlier discussions regarding the possible acquisition of management authority of a portion of Wisconsin Point should be pursued. The area in question on Wisconsin Point is one which has an intermittent history as a tern and plover nesting site and appears to offer potential as a management area for these species.
7. Banding: At this time it is no longer recommended that piping plover chicks be banded. It is felt that disturbance and impact on any surviving chicks should be kept at an absolute minimum.
8. Contaminants: Eggs were collected for contaminant analysis this year. These were sent to WDNR labs and at this time analyses have not been completed. It is important that their results be obtained as well as those from eggs collected in 1984 (to be analyzed by U.S. Fish and Wildlife Service). No need is seen for further collections in 1987 unless obvious abnormalities are seen, e.g., deformed chicks or cracked eggs.
9. Liaison: No change.

REFERENCES

- Davis, T.E., and G. J. Niemi. 1980. Larid breeding populations in the western tip of Lake Superior. Loon 52:3-14.
- Davis, T.E. 1982a. Proposed Management Plan - Interstate Island. Unpublished report.
- . 1982b. Proposed Management Plan for the Hearinging Island Wildlife Management Area. Report to the Minnesota Department of Natural Resources, St. Paul, Minnesota. 59pp. and appendices.
- . 1983. St. Louis River Estuary Colonial Bird Program, 1983. Report to the Minnesota Department of Natural Resources, St. Paul, Minnesota.
- . 1984. St. Louis River Estuary Colonial Bird Program, 1984. Report to the Minnesota Department of Natural Resources, St. Paul, Minnesota. 21pp. and appendices.
- . 1985. St. Louis River Estuary Colonial Bird Program, 1985. Report to the Minnesota Department of Natural Resources, St. Paul, Minnesota. ?pp.
- Niemi, G.J., T. E. Davis, and P. E. Hofslund. 1979. Distribution and relationships of habitats and birds of the St. Louis River estuary. Report to the U.S. Fish and Wildlife Service, St. Paul Field Office, St. Paul, Minnesota. 59pp. and appendices.
- U. S. Fish and Wildlife Service. 1983. Regional Resource Plan. U.S. Dept. of the Interior. Fort Snelling, Twin Cities, Minnesota.