

2003 PLYMOUTH LONG BEACH SUMMARY REPORT

prepared by

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INTRODUCTION

Plymouth Long Beach (PLB) is a 3-mile long barrier beach which can be accessed via Ryder Way from the Bert's Restaurant parking lot off of route 3A in Plymouth, MA. PLB was home to breeding Piping Plover, Least Tern, Common Tern, and Arctic Tern this past summer. Piping Plover productivity was 1.4 fledglings/pair, Least Tern produced only 2 fledglings from roughly 75 pairs, and the Common Tern and Arctic Terns fledged zero young. The breeding habitat utilized by these four species was mainly focused from the Crossover to the tip, although Least Terns did attempt to nest south of the Crossover on both sides of Ryder Way.

The combined management efforts of the Town of Plymouth and the Massachusetts Audubon Society (MAS) were very well executed and the current PLB management plan did a fine job of providing protection for the wildlife and beach access to recreationalists.

BREEDING SUMMARY

I. Piping Plover

Fifteen pairs of Piping Plover nested on PLB, utilizing the habitat from the Crossover, on the bayside of PLB, to about 100 yards past the Daymarker, on the harborside of PLB. Nests were located most densely in areas near the tip and 790-line. Several nests were also placed in the cobbled blowouts created during this past winter's storm season.

Twenty-one fledglings were yielded from twenty total nest attempts. The nests that produced fledglings all hatched before June 17th and were all from pairs' first nest attempts. Seven nest attempts were abandoned; four abandonments were most likely due to the presence of fox (fox tracks were observed approaching and digging at Piping Plover exclosures many times throughout the summer). Two nests attempts were lost to

tidal overwash. Fox predation was suspected to have been the cause of death for seven chicks from three separate clutches. Six of the mortalities occurred on the hatch days of nest #8 and nest #10. When nest #8 was checked at 8:30 a.m. on June 14th, zero eggs remained in the nest and fox tracks densely covered a small area between the nest site and the water's edge. A similar event occurred on June 24th when nest #10 hatched. On June 26th a dead chick from nest #3 was found at the tip, with fox tracks approaching and going away from its body. Later in the season, one pair abandoned their two chicks causing two mortalities due to sun exposure. A total of five chicks were lost due to unknown reasons.

Pair Number: Nest Number	Fate	Number of Fledglings
1:1	Nest abandoned 5-15, fox tracks present.	0
1:2	Nest abandoned 6-12, fox tracks present.	0
2:1	4 fledged 7-3.	4
3:1	3 fledged 7-4, one chick predated by fox 6-26.	3
4:1	3 fledged 7-8, one egg did not hatch.	3
5:1	4 fledged 7-5.	4
6:1	3 fledged 7-9, one egg did not hatch.	3
7:1	Nest lost to tidal overwash 5-14.	0
7:2	Nest abandoned 6-23, fox tracks present.	0
8:1	3 chicks predated by fox 6-14.	0
8:2	3 chicks lost 7-24, 7-26, and 8-9, causes of death unknown.	0
9:1	2 chicks lost 6-16 and 6-17, causes of death unknown.	2
10:1	3 chicks predated by fox 6-24, 1chick found dead in scrape 6-24.	0
11:1	2 fledged 7-11.	2
12:1	Nest abandoned 6-29, after 36 days of incubation.	0
13:1	Nest abandoned 6-6, reason unknown.	0
13:2	Nest abandoned 7-20. *	0
14:1	Nest abandoned 6-27, fox tracks present.	0
15:1	Nest lost to tidal overwash 6-14.	0
15:2	2 chicks lost 7-26, mortalities possibly due to sun exposure after adults abandoned chicks on 7-23.	0
Total Number of Fledglings		21

* The 7-20 high tide coincided with a busy day of beach-goers and dog walkers, possibly causing nest abandonment.

II. Common Tern

This season the Common Tern of PLB nested at the tip, where they have historically formed their breeding colony. Zero fledglings were produced and zero hatchings were observed. The majority of the nests were found inside of the predator fence on a bare dune face, and in the vegetation at the base of the dune to the north. A large portion of the total nest counts (see Table 2) were from nests outside of the predator fence. These nests were fairly evenly dispersed within an area about 20 m. wide and 50 m. long located on the western part of the tip, between the extreme high tide line and the area thickly covered by American Beach Grass.

The first Common Tern nests were found on 5-24 and by 6-4 the colony had grown to 120 nests. According to the nest count data (see Table 2), the colony reached its largest size on 6-12, with 187 nests. The nest counts were conducted every other day, by MAS PLB shorebird monitor Steven Liptay, who was helped during each count by one other assistant. These assistants rotated between MAS's Lara Davis, and three PLB Natural Resource Officers (NRO).

After the colony reached its peak, the rate of predation by gulls increased dramatically while the numbers of abandoned nests increased relatively little (see Table 2). Gull predation was recorded when an observer discovered a punctured eggshell. Although no gulls were directly observed predating eggs, Great Black-backed Gulls and Herring Gulls, which roost in the hundreds on PLB, were often seen flying over the colony and being chased by Common Terns.

Fox also contributed greatly to the colony's demise. On several occasions (6-12, 6-20, 6-28, and 7-7) fox tracks were found inside the predator fence and on most occasions the tracks approached empty scrapes where nests were known to have been. On 6-12, fox tracks and empty scrapes covered the dune face inside the predator fence, where about 20 multi-egg nests were located. Fox tracks were equally as common outside of the predator fence; the fox did not seem to prefer one area to the other and seemed to enter and exit the fence at will. Although the foxes' impact on the Common Tern colony is not represented in Table 2, its magnitude is suspected to have been nearly equivalent to that of the Great Black-backed Gulls' and Herring Gulls'.

Table 2.
2003 COMMON TERN NEST COUNT DATA
PLYMOUTH LONG BEACH

Date	1 egg nests	2egg nests	3 egg nests	4 egg nests	Nest Total	Egg Total	Abandoned Eggs	Gull Predated Eggs
6-4	NA	NA	NA	NA	120	NA	0	2
6-6	NA	NA	NA	NA	134	NA	2	0
6-8	NA	NA	NA	NA	139	NA	0	8
6-10	105	48	13	0	166	240	6	5
6-12	82	75	21	0	187	295	6	5
6-14	76	62	45	0	184	335	10	6
6-16	64	61	38	0	164	300	5	12
6-18	61	50	35	1	147	270	12	28
6-20	51	53	31	1	136	254	6	26
6-23	25	31	11	1	68	124	11	42
6-25	21	32	12	1	66	121	16	61
6-28	11	19	5	1	36	68	10	47
7-4	13	18	2	0	33	55	8	50
7-7	2	4	0	0	6	10	8	36

III. Least Tern

The Least Tern nested in several areas of PLB; nests were found in several blowouts along Ryder Way (south of the Crossover) and along the bayside beach from the Crossover to the tip.

The first nest was found in a cobbled area a few meters above the high tide line on the harborside of Ryder Way. The next nests were found soon after on the beach just north of the Crossover, in the rock/sand substrate above the high tide line and below the American Beach Grass, during the first week of June. On 6-17 nesting was first observed north of the ‘adjustable groin.’

By 7-2 the nest total reached its peak at 65. Roughly 80% of the nests counted on 7-2 were located north of the ‘adjustable groin’ and south of the tip; these nests were scattered along the open beach, the dune slopes, and the cobbled blowouts in the dune interior. Occasionally nests were found on the open beach outside of the symbolic fencing. The remainder of the nests were located between the ‘adjustable groin’ and the

Crossover, in a blowout on the bayside of Ryder Way just south of the Crossover, and in various blowouts on the harborside of Ryder Way.

Due to high levels of predation from fox and gulls, relatively few nests hatched and only two fledglings resulted from these hatchings. It was suspected that predation also played a significant role in the low number of chick survivals.

The spreadsheet generated by the NRO staff gives a more in depth description of the Least Tern nesting than provided here. Contact David Gould at Plymouth Town Hall for more information.

IV. Arctic Tern

Three pairs of Arctic Terns nested at the tip and produced zero fledglings. The first nest attempts, on the harborside portion of the tip, were all placed less than 3 m. from the extreme high tide mark. These first nests were lost to tidal overwash. One pair renested in the same place. The other two pairs nested further south on the bayside of PLB; one of these nests was again placed very close to the extreme high tide mark, while the other was located south of the 790-line in a sandy area safe from the possibility of tidal overwash. Two of these renests (the nest south of the 790-line and the renest on the harborside of the tip) were predated by fox and the other renest was again lost to tidal overwash.

V. Roseate Tern

Zero Roseate Tern nest attempts were recorded this summer, though regular observations of resting and feeding adults were made. Often 2-3 pairs were sighted resting on the tidal flats or the rocks on the harborside of the tip. The highest single day count was twelve individuals at the tip on 6-24.

MANAGEMENT AND MONITORING

The Town of Plymouth hired three Natural Resource Officers and approximately ten assistants to perform the tasks necessary to open and close the beach to vehicular travel, monitor and study the breeding coastal birds, and to report and/or confront

unlawful beach-goers. The Massachusetts Audubon Society employed a full-time staff member who lived in the Goldenrod cottage on PLB from mid-May to mid-August to monitor and study the breeding waterbirds and also report violations. It was also the job of both the Town of Plymouth and MAS to provide education to the public about PLB's ecology, natural history, and the rules that ensure safety for the beach's wildlife. The Town of Plymouth staff and MAS worked effectively and harmoniously to preserve and study the PLB breeding waterbird populations during the summer of 2003.

The Town of Plymouth staff, in accordance to the current management plan, erected a travel corridor from the Crossover to the 790-line, providing a path for four-wheel drive vehicles accessing PLB's shoreline. The vehicle restriction line, imposed when unfledged Piping Plovers or Least Terns were inhabiting areas that intersected the vehicle corridor, was managed and monitored by the Town of Plymouth NROs and staff from the opening until the closing of the beach. The Town of Plymouth also erected and maintained symbolic fencing to separate the waterbird-breeding habitat from the public's recreational space. Predator exclosures for the Piping Plover nests were provided by the Town of Plymouth and were put up by town staff members and MAS staff. Wings were used for each exclosure to prevent fox and other predators from circling the nests. Exclosures were erected on the same day that nests were found, even when nests were found with one egg.

The NROs and their staff greeted and logged in/out the beach visitors driving off-road vehicles (ORVs) and informed the recreationalists of the Least Tern and Piping Plover nesting status; they did a good job comforting people who were unhappy with the limited amount of parking space north of the Crossover throughout most of the summer. From 6-6 to 8-11 the vehicle restriction line allowed a total of 60 to 80 cars to park along the town property north of the Crossover and in a small area to the south of the Crossover.

Dog walkers without leashes were the most common offenders of the current PLB Management Plan. Leash enforcement was a joint effort between the NROs, their staff, and MAS. The NROs aggressively urged dog walkers to keep their dogs leashed at all times, and regularly contacted the local police when dog walkers did not comply with their demands.

In response to the high level of Common Tern nest predation due to fox, the Town of Plymouth acquired a solar powered electric fence in early July. To erect the fence properly, the vegetation must be trimmed along the fence's course. Protecting the Common Tern colony would have required the removal of a substantial amount of vegetation and several hours of disruptive weed-wacking. The fence was instead constructed around three Least Tern nests in a thinly vegetated interdune cobbled blowout. The fence proved to effectively exclude the fox and all other mammalian predators from the nests during the incubation period and directly after hatching. All six of the eggs hatched and each of the chicks disappeared within two days of hatching, presumably due to fox predation once they exited the electric fence area. David Gould plans to erect the fence before the arrival of the Common Terns in 2004, protecting the area where the 2003 colony was located.

Morning walks to find new Piping Plover and Least Tern nests, monitor adults and chicks, and inspect the symbolic fencing and exclosures, were jointly performed by the NROs, their staff, and MAS staff. These walks allowed the NROs and MAS staff to share data, discuss concerns, and thoroughly monitor the breeding birds.

RECOMMENDATIONS

The most needed change at PLB has to do with the enforcement of leash laws. It was a very common occurrence throughout this year's tern and plover breeding season to find dogs off of their leashes in breeding areas. Although dogs would usually stay near the water line and out of the symbolic fencing when off of their leash, there were some instances when dog tracks were found inside the symbolic fencing. When the NROs, their staff, or myself approached offenders they would typically leash their dogs. However, many dog walkers would again unleash their dogs when a fair distance from anyone in a uniform. In my opinion, this lack of respect for the Town of Plymouth By-law would be quickly reversed if NROs had the power to ticket offenders on site. If dogs continue to be walked off-leash on PLB, I think that there is a possibility that the Town of Plymouth will experience the repercussions of a 'take' in the near future.

I also saw a need for a better system of communication between the NROs and myself. Important information was often past along in pieces or sometimes not at all. I think that both the NROs and the MAS shorebird monitor would benefit from arranging a meeting time and place where data can be shared and issues can be discussed on a weekly basis.

I also feel that there is a lack of educational opportunities for beach goers to learn more about their beach. The *Plymouth Long Beach Information Booklet* is a well-designed and thorough resource for people to begin learning about PLB, but I feel that experiential possibilities need to also exist. Beach walks, guest speakers, or an information bulletin board are possibilities that the Town of Plymouth and MAS should consider more seriously.

Unusual Sightings:

6-11, 2:45 pm - one Red-necked Grebe between 2nd and 3rd jetties of PLB parking lot

6-19, 6:30 pm - one Sandwich Tern at PLB tip

6-20, 6:30 pm - one Royal Tern at PLB tip, several other ROTE sightings in July