2007 Final Report on the Western Snowy Plovers

Coal Oil Point Reserve, Santa Barbara, CA

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Site: Sand's Beach, Coal Oil Point Reserve (COPR)

Location: RU5, Santa Barbara, CA

Lat-Long: 34 25 00 N, 119 52 30 W

USGS maps: Goleta 7.5, Dos Pueblos Canyon 7.5, Goleta 15

Jurisdiction: Owned and managed by the University of California Santa Barbara.

Climate: Avg precip 14-21 in/year, avg min temp 42 F, avg max temp 75 F

Total linear beach length: 1,200 m

Protected linear beach length: 300-400 m during Winter and fall and 800 m during the breeding season

Protected area during breeding season: 30,700 sq meters or 7.6 acres

Docent program? Yes, all year, most daylight hours

Interpretive and regulatory signs? Yes, at beach entrances and along protected areas

Management Plan? Yes

Enforcement? Docents request compliance with leash law and restricted areas. Officers are called when problem is not solved.

Monitoring: Yes, weekly in the winter and Fall and daily in the spring and Summer.

Predator management: harassment of crows, fencing to prevent skunk.

INDEX

ABSTRACT 3
INTRODUCTION 3
METHODS AND RESULTS 3
WINTERING POPULATION 4
BREEDING POPULATION 4
Beach nesting 5
Hand-raised chicks 7
Predation 5
Enforcement 8
Location of nests 8
Docent program 8
APPENDIX 1. Band sightings 10
CONCLUSION 10
RECOMMENDATIONS 10

ABSTRACT

In 2007 we continued with the management of the WSP population at Coal Oil Point Reserve as in previous year. We were not able to track chicks until fledged age as in previous years. I attribute this to the more complex beach profile that prevented a clear view of the beach and the large number of simultaneous broods that hatched in the beginning and again at the end of the breeding season. We experimented with replacing plover eggs with wood eggs and then returning the hatching egg to the plover nest. This was s successful way to improve hatchability during a high skunk predation time but it was very laborious.

INTRODUCTION

Sands beach at Coal Oil Point Reserve (COPR) has a wintering and a breeding population of the Western Snowy Plover. The beach is open to the public all year, but a portion of the dry sandy beach, which is the plover habitat, has been protected since Spring 2001. Presently, all of the potential breeding habitat is protected during the breeding season and the beach east of the slough mouth is protected during the wintering months. Although Sands beach is relatively small, it has a large population of wintering plovers.

METHODS AND RESULTS

The 2001-2004 report (Sandoval, 2004) describes the management actions taken to protect the wintering and breeding populations of WSP at the reserve since 2001. Figure 1 shows the location of the plover habitat and the permanent and seasonal fences to protect them.

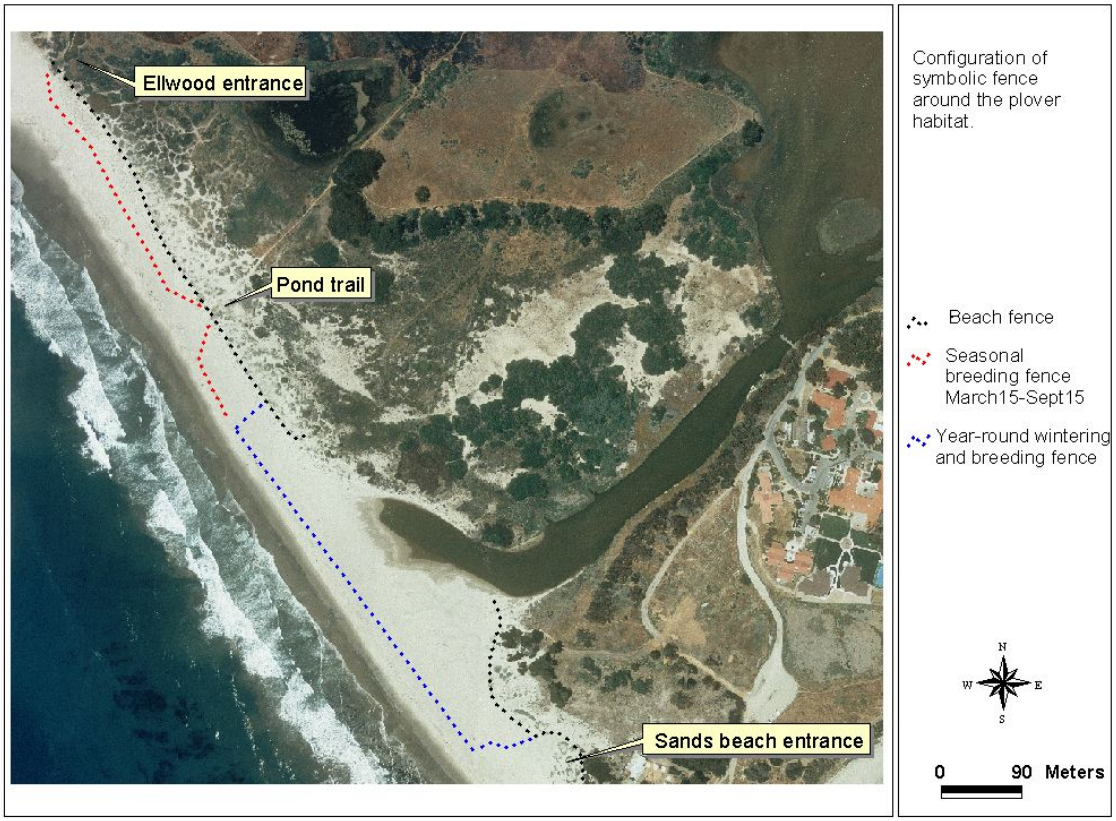

Figure 1. Location of the habitat protected for the Western Snowy Plovers on Sands beach at Coal Oil Point Reserve.

WINTERING POPULATION

In the 2007 winter window survey we counted 231 birds. When we counted, we walked along the wet sand from the eastern boundary of Sands beach to the western boundary of the Reserve (Figure 1) spotting and counting plovers with a binocular. This count is similar to the last year (Figure 2).

BREEDING POPULATION

Nesting

The number and location of adult plovers, nests, and chicks was counted 2-3 times per week by Cristina Sandoval, during the breeding season. 66 nests were found and, of those, 20 successfully hatched at least one chick. Thus, nest loss was 30% in 2007.

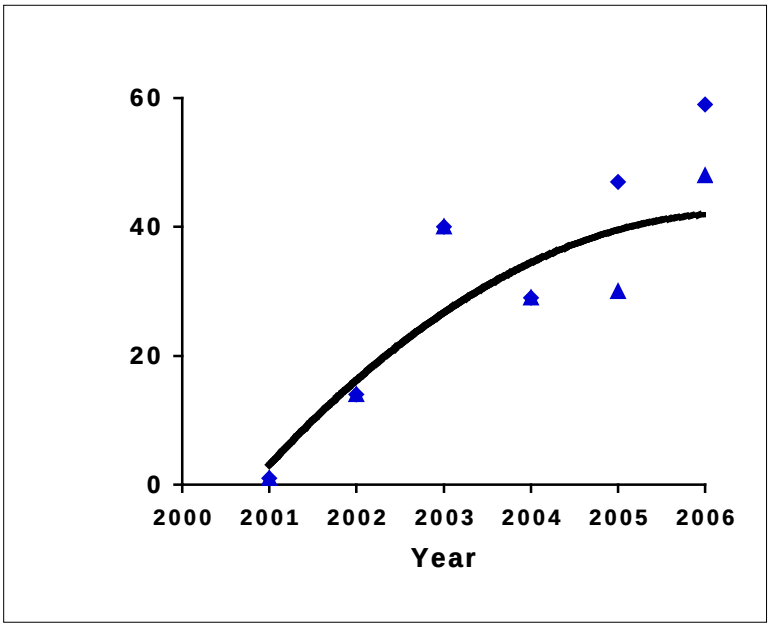

Figure 2. Number of fledglings at Coal Oil Point Reserve. Triangles are the number of chicks naturally fledged at the beach. The diamonds included the chicks fledged at the nursery.

Predation

Skunks were the main cause of nest failure (Figure 3). A meshed skunk fence was again used to help prevent skunks from moving from inland to the beach. Skunks were the main cause of nest failure in 2007, and 11 nests failed of unknown cause (Table 2). The reason for the higher than normal unknown cause of nest failure is that we did not investigate the nests that were near hatched broods to avoid disturbing them. Despite predation, the number of fledglings was still average (Figure 2).

Table 2. Number of nests lost by fate.

	2002	2003	2004	2005	2006	2007	Total

							nests
Total nests	**9**	**24**	**51**	**64**	**43**	**66**	**257**
Hatched	**6**	**17**	**20**	**16**	**25**	**30**	**114**
Skunk	0	0	10	18	2	19	**49**
Crow	2	4	8	3	0	0	**17**
Wind	1	3	2	6	1	1	**14**
Tide	0	0	5	5	2	0	**12**
Abandoned			0	9	3	0	**12**
Abandoned Owl	0	0	0	0	6	0	**6**
Flooded	0	0	0	3	0	0	**3**
Raccoon	0	0	2	1	0	0	**3**
Whimbrel	0	0	1	0	0	0	**1**
Gull	0	0	0	0	1	0	**1**
Opossum	0	0		1	0	0	**1**
Unknown cause	0	0	0	1	3	11	**15**
Unk pred	0	0	0	1	1	1	**3**
Unk fate	0	0	0	0	0	4	**4**
Total lost	**3**	**7**	**28**	**48**	**19**	**36**	**105**

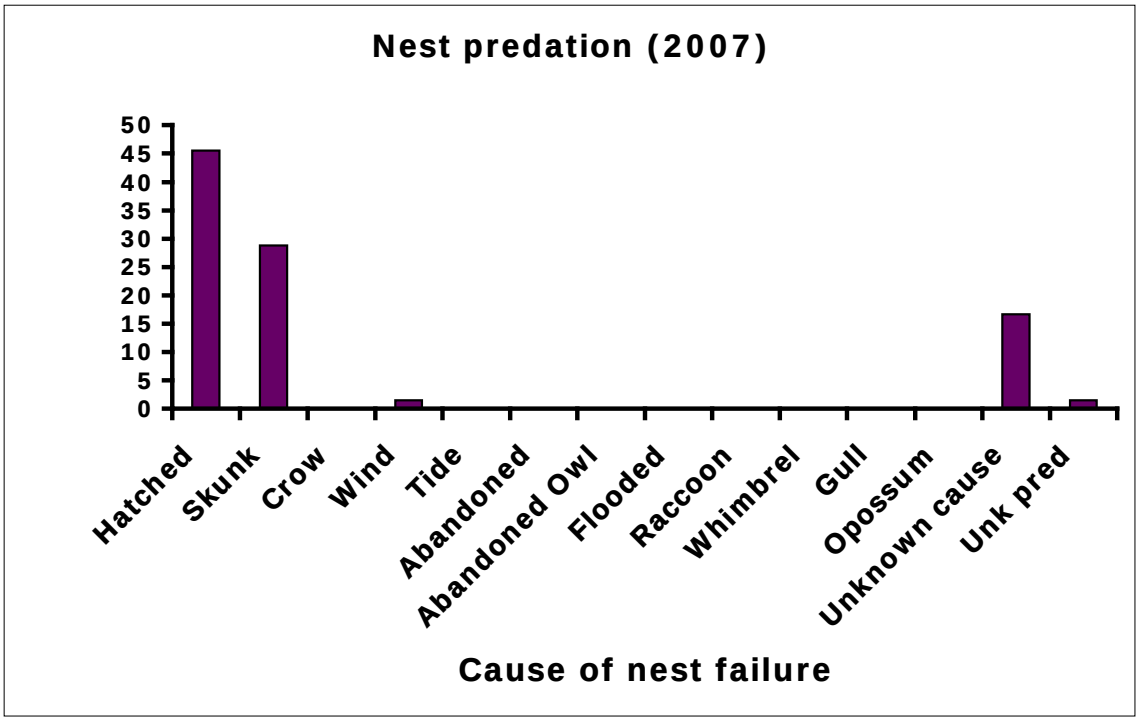

Figure 3. Nest predation in 2007.

Egg replacement experiment

Because of the intense predation by skunks, we attempted to have nests by replacing the real eggs with wood eggs during the incubation period. The real eggs were then returned to the nests when we heard piping and a chick was beginning to hatch.
Of the 11 nests that we conducted the replacement, 10 hatched. Of the 10 nests that hatched, the parents accepted the eggs and chicks of 9 of them. 1 nest that had a chick which hatched at night and was moving around in the morning when we attempted to return it to the nest, was rejected by the parents. We raised these chicks in captivity and released at fledgling age. This, we learned that the eggs need to be returned to their nests before the chicks are fluffed and moving.
Although the egg replacement was an effective way to improve hatching success, it was a very time consuming strategy. The reason for it is that the incubator and the eggs need to checked several times a day for signs of piping so the eggs can be returned to their nests before it is too late.

Hand-raised chicks

Eggs from abandoned or destroyed nests were brought to our plover nursery and incubated at 99.5 degrees F until hatching. After hatching, they were transferred to a terrarium measuring 2 ft wide, 4 ft long, and 1.5 ft tall. After 3-5 days, they were moved outside of the building into an aviary 5.5 ft wide x 16 ft long x 7 ft tall. At night, the chicks were moved back to the building until 2 weeks of age. After that, they were left to sleep outside, in a closed wooden box. The chicks had a source of heat from a warm lamp at all times. They were released back to the beach when they were 35 days old, or until they tails were fully developed. The chicks were fed beach hoppers ad libitum and mealworms, as a treat, once a day. The beach hoppers were collected daily from under kelp wrack on the beach.

Four nests were recovered from the beach because they were abandoned or destroyed by wind or tide (Table 3). From those, 3 chicks fledged and were released. We were not able to band these chicks.

Table 3. Cause and fate of the 2007 nests that were rescued to be raised in captivity.

Nest #	Cause	Date aband	Date collected	# eggs	Eggs hatched	Eggs infertile	Dead embryo	Fledged	chick death
227	tide	5/19/07	5/19/07	2	0				
210	wind	?	4/13/07	3	0	0	3	0	0
203	abandoned	?	4/23/07	1 egg + 2chicks	2	1	0	2	0
224	wind	5/3/07	5/4/07	1					
238	Abandoned (skunk)	6/14/07	6/14/07	1	1	0	0	1	0
Totals				10	3	1	3	3	0

Enforcement

Enforcement levels continued in 2007 as in previous years. The UCSB Police department has law enforcement jurisdiction at the Reserve. Docents phone Campus Police if beach users refuse to cooperate with requests to follow regulations. Citations to owners of unleashed dogs are at the discretion of each officer. The number of dogs entering the beach without a leash was around 60%. Due to a need for increased enforcement, the Reserve will continue to request regular police patrols of Sand's Beach during the day and at night and will push for a no-tolerance policy for unleashed dogs.

Location of nests

The location of nests was again not recorded in 2007 to avoid disturbance to nests and broods. In 2007, several broods were at the beach at the same time and intrusion into the nesting area by the monitor caused the broods to move and the adult plovers to dispute territories. Thus, the monitor only monitored nests from outside of the fence most of the time.

Docent program

The docent program continues at the same level as in 2006. The docents have been very instrumental in reducing the impact of beach users to the Snowy Plovers. The docents main duties include showing and educating people about the plovers, requesting compliance to the leash law, requesting people to stay away from the symbolic fence, requesting people to move around the plover flock, and scraring away crows.

APPENDIX 1. Band sightings banding at the reserve

Banding

We did not band the nursery chicks in 2007 as we were not able to find an available bander.

Sightings

One female plover (PA:AR) that was hand raised in our nursery in 2005, nested at the reserve in 2007. Her nest failed and we know the cause.

CONCLUSION

The plover breeding and wintering populations at COPR appear to have increased since 2001 and become stable relative to other populations along the coast. The combination of light predator management, education, and recreation control has been working to benefit the plovers.

RECOMMENDATIONS

- The skunk problem returned and we need to implement a predator control program for the next year. Several attempts to trap skunks and to reduce their presence on the beach with fencing of the dune area failed.
- The chick nursery was successful. We need obtain a banding permit for a local biologist because it was not feasible to "borrow" plover banders from other locations as their were busy during the breeding season.
- We need to acquire funds for a predator program as the skunks continue to be the main cause of nest failure.

ACKNOWLEDGEMENTS

We are very thankful to the following individuals who went the extra length to make the program work. Pat Walker and Callie Bowdish helped count plovers . Jennifer Stroh, the docent coordinator, managed the docent program. Steve Ferry continues to assist with

fence maintenance from the beach. Callie Bowdish recorded the beauty of the plovers and their natural history through photography. Her photos are kindly available at her website (http://homepage.mac.com/cjbowdish/COPP/). The USFWS staff and plover managers provided support, information and ideas, and most importantly, shared enthusiasm for the recovery of the WSP. The docents, too many to count, showed that people care and are willing to work from their hearts to save the plovers.

CALIFORNIA LEAST TERNS

The California Least Terns started appearing in the reserve on 2006. 4 tern pairs nested in the reserve in 2007 and 6 nests were destroyed by skunks (2 pairs re-nested) (Table 4). From 1 nest that hatched, a Red Tail Hawk ate the chicks on the same day of hatching

Table 4. Nesting of California Least Terns at Coal Oil Point Reserve.

Year	# pairs	# nests	# nests hatched	# chicks fledged	Observations
2006	5	4	4	7	
2007	4	6	1	0	Skunks ate 5 nests. Red Tail Hawk ate chicks

Bibliography of other Snowy Plover studies at COPR:

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