

AMERICAN OYSTERCATCHER (*Haematopus palliatus*) MONITORING AT
CAPE LOOKOUT NATIONAL SEASHORE

2008 SUMMARY REPORT



NPS Photo 2008

Prepared by:
Jon Altman
NATIONAL PARK SERVICE
CAPE LOOKOUT NATIONAL SEASHORE
131 CHARLES STREET
HARKERS ISLAND, NC 28531

Abstract

There were 57 documented nesting American Oystercatcher pairs throughout the seashore in 2008. North Core Banks had 14 pairs, Middle Core Banks and Ophelia Island had 8 pairs, South Core Banks had 24 pairs, and Shackleford Banks had 11 pairs. Egg-laying was initiated approximately on 18 April and a total of 91 nests were documented. Fifteen chicks fledged, 3 from North Core Banks, 7 from Middle Core Banks, five from South Core Banks. Middle Core Banks continues to be the most productive with a fledge success rate of 1.16 and Shackleford continues to be the least productive with a fledge success rate of 0.0. Overall the fledge success rate was 0.26 per nesting pair for the seashore.

Introduction

American Oystercatchers are common nesters throughout the park, primarily on the ocean beach. They are listed as a 'Bird of Special Concern' in North Carolina by the North Carolina Wildlife Resource Commission. Their choice of nesting habitat makes them particularly vulnerable to disturbance by park visitors and off-road vehicles.

Monitoring of American Oystercatcher nesting at Cape Lookout National Seashore (CALO) began in 1995. A researcher from Duke University studied nesting on South Core Banks and found low reproductive success. She also documented chick mortality caused by off-road vehicles. Since 1997 researchers from North Carolina State University (NCSU) and park staff have conducted censuses, monitored nesting success and banded birds in the park.

Site Description

Cape Lookout National Seashore is located in the southern Outer Banks of North Carolina between Beaufort and Ocracoke Inlets. The park is currently divided into five barrier islands. The northernmost island, North Core Banks (NCB) is approximately 19 miles long, extending from Ocracoke Inlet to Old Drum Inlet. From Old Drum Inlet to New Drum Inlet is a 3-mile long island of land formerly connected to NCB known unofficially as Middle Core Banks (MCB). In 2005 an inlet formed during Hurricane Ophelia creating a ¾ mile long island south of New Drum Inlet known as Ophelia Island (OI). South Core Banks (SCB) extends southward from Ophelia Inlet almost 25 miles to Barden Inlet. The Core Banks have a northeast to southwest orientation and exhibit a low profile landscape. The fifth island, Shackleford Banks (SH) is 9 miles long and has an east-west orientation with a higher dune system and larger areas of vegetation. All islands in the park are subject to constant and dramatic change by the actions of wind and waves.

Methods

Management and monitoring protocols are outlined in the Interim Protected Species Management Plan/ Environmental Assessment (IPSMP/EA) 2006. Weekly surveys of nesting habitat on Core Banks began in April. Nesting on North Core Banks and South

Core Banks was monitored five to seven days a week from April 1 to the end of the nesting season. Surveys of Shackleford Banks, Ophelia Island, and Middle Core Banks were made an average of once a week beginning in April.

The area around the nest was closed with “Bird Sanctuary” signs if the nest was in danger of being run over by off-road vehicles or stepped on by pedestrians. Generally, nests found in the dunes were not posted. There is some concern that predators might learn to associate posts with nests. Small posted areas may also unnecessarily attract curious park visitors and cause disturbance. Nest locations were marked with either a stake or objects like sticks or shells to facilitate follow up checks.

The locations of the nests were recorded using a GPS and the park’s mile marker system. Information about the habitat type was also noted. If one or both adults were banded, that information was recorded on the nest data sheet (Appendix 2).

Nests were checked regularly, 1 to 3 days, to monitor the status of incubation and document losses. Immediately at the time of hatch, the ocean beach in that area was closed to vehicles with traffic routed to the backroad. In areas north of Ramp 9 (where there is no backroad), signs warning of the presence of flightless chicks and reducing the speed limit to 15mph were placed on the beach. Also a vehicle escort program was used this year in this area. Chicks were monitored daily until they fledged or were lost.

Results

Fifty seven pairs of American oystercatchers nested at CALO (Table 1). Counts were for pairs on or near the ocean beach and did not include marsh islands.

Table 1. American Oystercatcher Nesting Pairs- 2008

North Core Banks	14 pairs
Middle Core Banks	6 pairs
Ophelia Inlet	2 pairs
South Core Banks	24 pairs
Shackleford Banks	11 pairs

Nesting pairs were spread throughout most of the ocean beach habitat in the park (Figures 1, 2 & 3). The birds did not use areas adjacent to buildings and concentrations of people. Six additional pairs were observed in the seashore, but nests were not located for various reasons.

Hatch and Fledge Success

Ninety one nests were found of which 17 hatched at least one egg. Fifteen chicks were known to survive to fledge (Table 2). Of the nests that failed, 32 nests failed due to unknown causes, 27 were lost to predation, 9 were lost during storms, 4 abandoned and 3

were lost to human disturbance (Table 3). Raccoons (12) and ghost crabs (9) were found to be the main predators of oystercatcher eggs. Table 4 summarizes the reproductive success over the last thirteen years. Note that fledgling success is calculated using the known nesting pairs not breeding pairs. This allowed for cross year comparisons with variable monitoring efforts and other unknowns. In 2008 fifty seven known nesting pairs produced fifteen fledglings for a fledge success rate of 0.26. Individual nest data are found in Appendix 1.

Table 2. Oystercatcher Nesting by Island 2008

Island	# pairs	#Nests	# Nests Hatched	# Chicks Fledged
North Core Banks	14	22	4	3
Middle Core Banks	6	6	4	7
Ophelia Island	2	2	1	0
South Core Banks	24	44	5	5
Shackleford Banks	11	17	3	0
CALO Total	57	91	17	15

Table 3. Causes of Nest Failure

Island	Predation	Flooding/ Storms	Human Disturbance	Abandoned	Unknown
North Core Banks	9	3	0	1	5
Middle Core Banks	0	0	0	0	2
Ophelia Island	0	1	0	0	0
South Core Banks	18	5	2	3	11
Shackleford Banks	0	0	1	0	14
CALO total	27	9	3	4	32

Table 4. Summary of Oystercatcher Reproductive Success Data

Year	Island	#Nests	#Nests Hatched	# Pairs (nesting)	#Chicks fledged
1995	South Core Banks	36	10 (28%)	--	7
1997	South Core Banks	34	4 (12%)	--	2
1998	North & South Core Banks	98	12 (12%)	--	6
1999	North & South Core Banks	114	16 (14%)	--	6
2000	North & South Core Banks	75	25 (33%)	51	9 (0.18)
2001	North & South Core Banks	109	19 (17%)	51	1 (0.02)
2002	North & South Core Banks	90	10 (11%)	45	6 (0.13)
2003	Cape Lookout N.S.	106	17 (16%)	47	8 (0.17)
2004	Cape Lookout N.S.	68	37 (54%)	53	45 (0.85)
2005	Cape Lookout N.S.	65	26 (40%)	53	18 (0.33)
2006	Cape Lookout N.S.	69	23 (33%)	53	25 (0.47)
2007	Cape Lookout N.S.	99	21(21%)	61	31 (0.51)
2008	Cape Lookout N.S.	91	17 (18%)	57	15 (0.26)

Banding

Twelve chicks were captured and banded in the park by a NCSU researcher. Park staff recorded band resights of individuals and nesting pairs in the seashore throughout the summer. Of the 57 nesting pairs 24 pairs had at least one of the pair banded, while 33 pairs were unbanded. NCB had 11 pairs (17 individuals) banded and 3 pairs (6 individuals) unbanded. SCB had 12 pairs (16 individuals) banded and 12 pairs (24 individuals) unbanded. SH had one banded individual and MCB and OH had no banded pairs. See appendix 1 for nesting pair re-sight data and 2008 chick band data.

Details on oystercatcher band combinations can be found at the website:

www4.ncsu.edu/unity/users/s/simons/www/AMOY%20Banding.htm

Winter Counts

Winter flock counts of roosting American Oystercatchers were conducted in December at high tide. The Bottle Run Point and Whale Creek Bay area on the soundside of Shackleford Banks had 71 birds on 12/4 and 81 birds on 12/17. Another soundside Shackleford roost site on the east end had 74 birds on 12/17. Also a small roosting flock of 16 birds was recorded on the soundside mudflats of Ophelia Inlet on SCB on 12/17. Roosting sites included marsh islands and shell rakes. Massachusetts and North Carolina banded birds were present and band combinations were reported. The roost sites at Bottle Run Point and the east end of Shackleford appear to be the most significant in the seashore containing 155 birds on 12/17 at the same sampling time.

Discussion

Hatch rates in 2008 varied throughout the park. Hatch success rates were 18% on North Core Banks, 66% on Middle Core Banks, 50% on Ophelia Island, 11% on South Core Banks and 17% on Shackleford Banks. Predators and flooding were the known causes of some nest losses. Twenty seven nests were known lost to predators, 18 on South Core Banks alone. Primary predators include raccoons, feral cats, and ghost crabs. An early May flooding event washed 9 nests away. The cause of failure for 32 nests was unknown. There were three human disturbance related nest failures. One nest on South Core Banks (nest 10) was run over by truck/s and destroyed. The nest was on the toe of the dune and posted with four signs. Apparently the tide came up high and forced vehicles to drive near the dunes. More than one vehicle drove through the closure and over the nest. Egg shell fragments were found in the fresh tire tracks. While the nest was posted according to the IPSMP/EA a slight variation in sign placement may have helped prevent this take. The other disturbance on South Core Banks was related to a group of campers set up close to nest 24 and the nest was abandoned. On Shackleford Banks nest 11 had numerous footprints and horseprints on/over the nest cup.

There was one incidence of chick mortality due to vehicles documented on North Core Banks. Nest 4 at mile 7.24 hatched three chicks by May 26. Signs were posted to reduce speed limit to 15mph and warning drivers to look out for the chicks. This area is without a backroad, north of ramp 9, to detour traffic around. The three chicks were observed in tire ruts near the tide line on May 27. On May 30 one chick was found dead in a tire track and the other two chicks were not seen. A backroad is planned to be open in this area, from mile 9 to mile 7, by the 2009 nesting season. In order to avoid a similar outcome for a hatched chick at mile 8.96, nest 18, staff escorted vehicles through the area on a scheduled basis. This escort operation allowed for the protection of the chick and for vehicle access to the northern half of the island. The chick successfully fledged from this beach area. In areas with a backroad system, the ocean beach was closed to vehicles when unfledged oystercatcher chicks were present. Off-road vehicle traffic was routed to the backroad via the nearest ramps.

The number of nesting pairs on North Core Banks and Middle Core Banks was lower than last year. In 2007, 17 nesting pairs on NCB and 11 pairs on MCB were documented. In 2008, on NCB 14 nesting pairs were recorded, but there were 4 more pairs present. No mating or breeding activity was observed for two pairs at mile 5 and 13. Two pairs at mile 19 and 11 were observed in courtship behavior, but no eggs were located. It is unknown if nests were laid and failed before staff could locate them or if their mating attempts were unsuccessful. On MCB at least eight pairs were present, but only six were recorded with nests. Staff access is limited by kayak from NCB or boat from Harker's Island. Once on the island foot travel can make it more difficult to monitor the birds. For the past several years a researcher from NCSU was dedicated to just studying oystercatchers on NCB and MCB. In 2008 that was not possible and staff were spread thin with multiple species to monitor.

Fledging success in the park was 0.26 chicks per nesting pair with a large variance by island (or 0.24 chicks per breeding pair). Fledgling success rates were 0.21 on NCB, 1.16 on MCB, 0.0 on OI, 0.20 on SCB, and 0.0 on SH. Shackleford banks again had no fledge success this year. A chick was last fledged there in 2004. Middle Core Banks continues to be the most successful habitat, especially the northeast part of the island near Old Drum Inlet.

Figure 1.

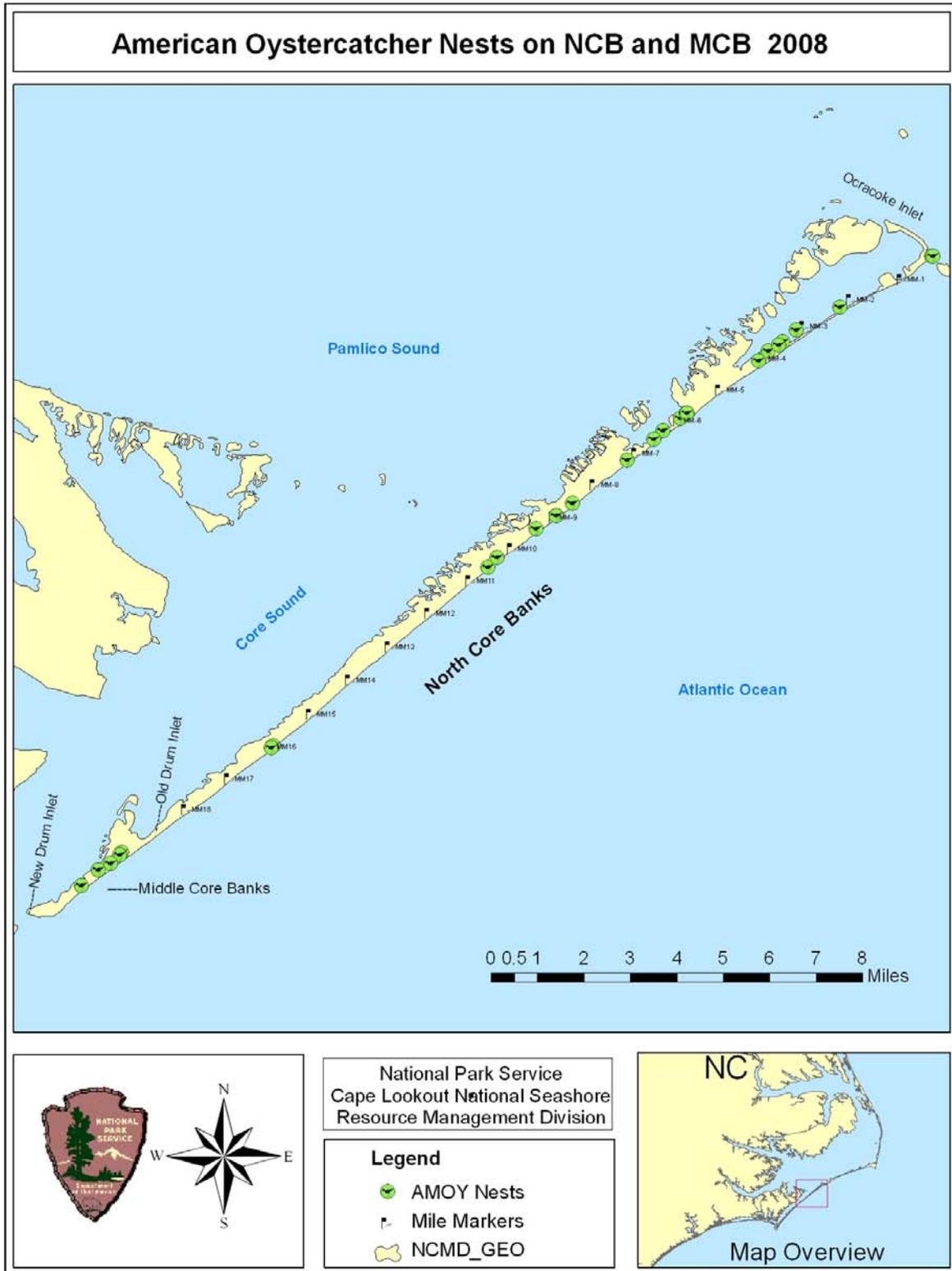


Figure 2.

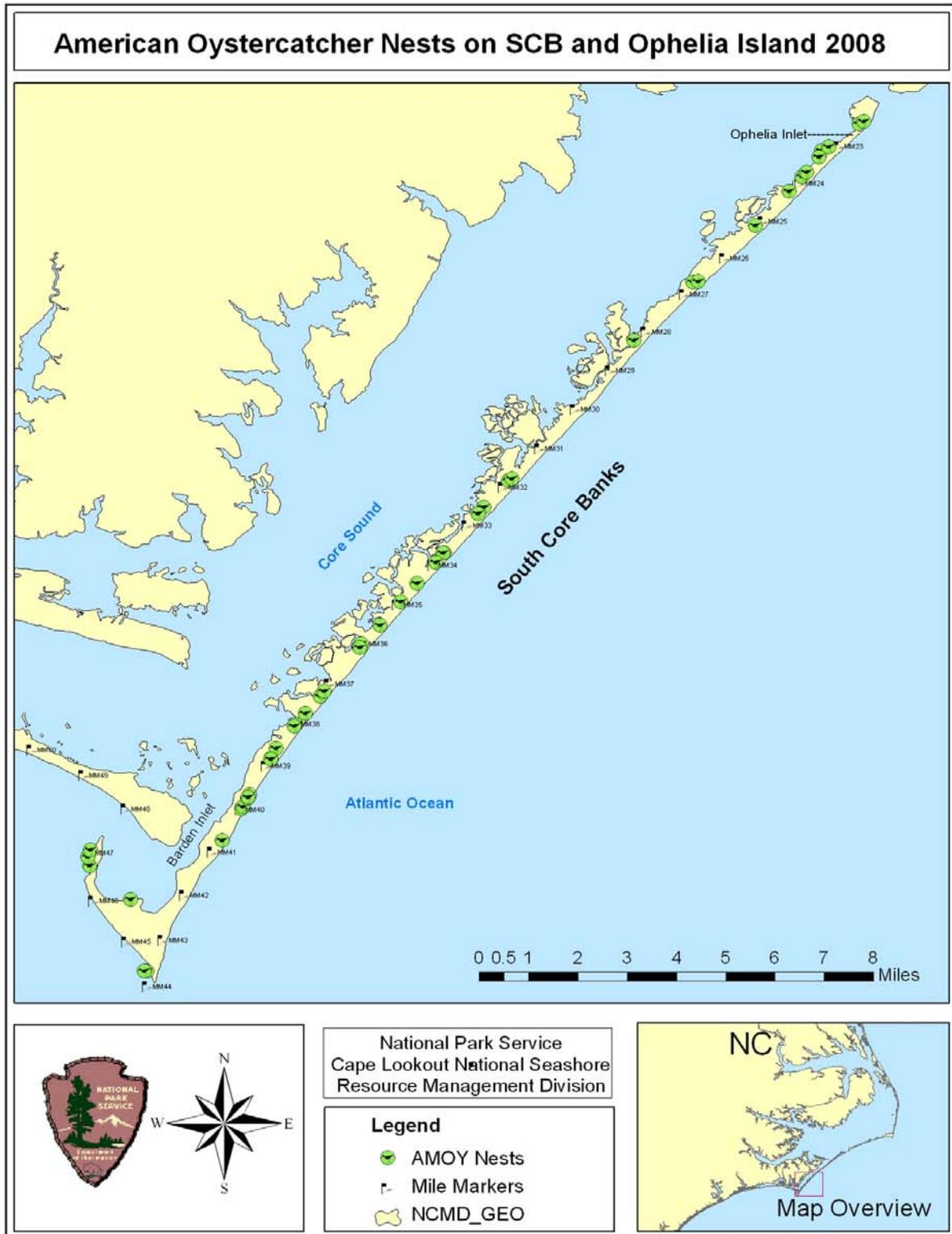
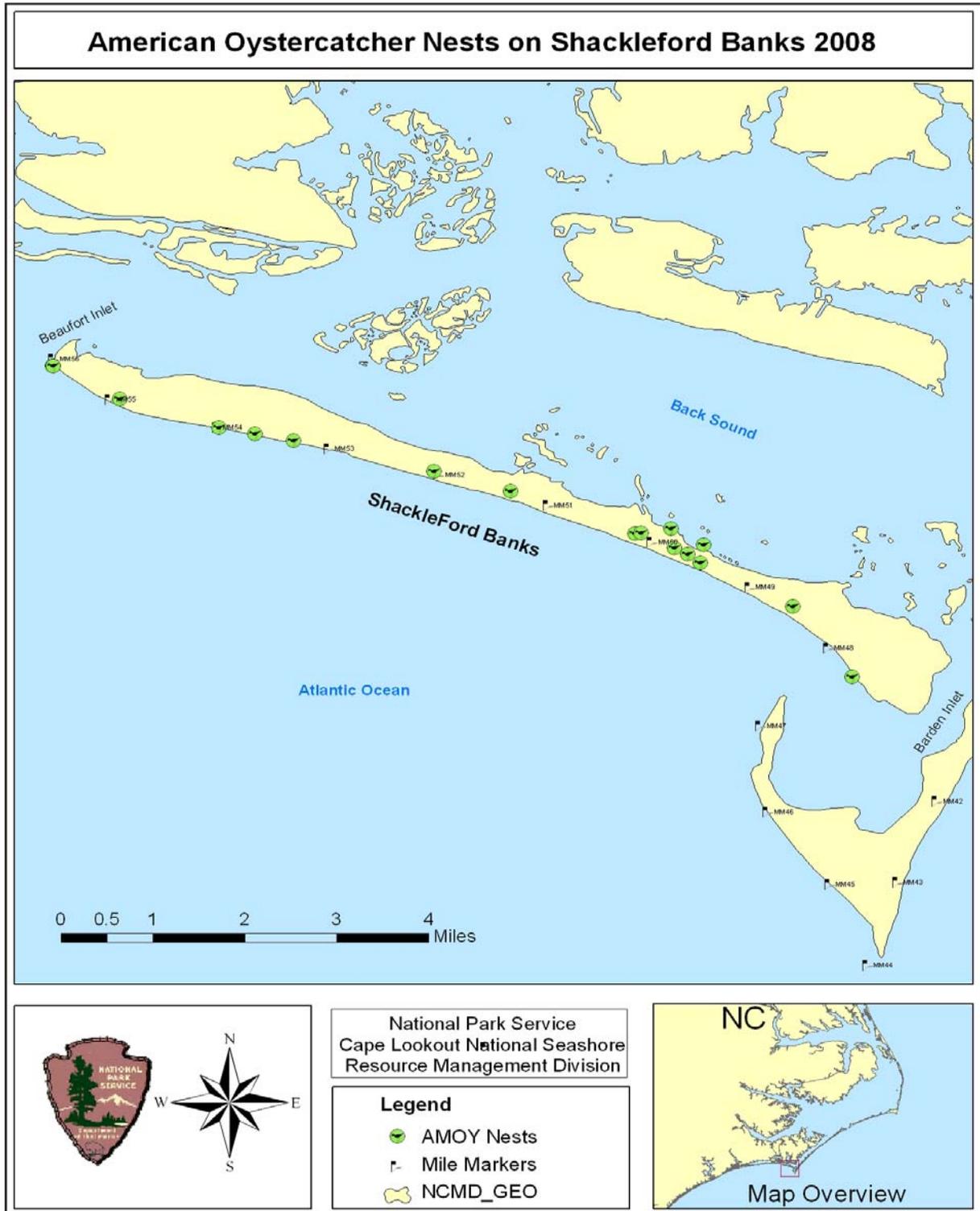


Figure 3.



APPENDIX 1A

AMERICAN OYSTERCATCHER NESTS- NORTH CORE BANKS-2008

Nest #	Pair #	BANDS	MILE	LOCATION	FOUND	EGGS	POSTED	COMMENTS
1	1	G(04)+G(73)	9.37	shell flat in dunes	4/24/08	3	No	7/3 1 chick banded G(W9); used sound & ocean beach
2	2	G(C1)+G(F3)	5.94	shell flat, toe of dune	4/27/08	3	Yes	5-14 lost to storm overwash
3	3	G(M3)+ --	10.59	toe of dune	4/30/08	2	Yes	6/6-ghost crab?; eggs viable?, incubating 12 days after exp. hatch
4	4	-- + --	7.24	on slope of dune	4/30/08	3	Yes	5/30 chicks obs. in tire ruts, confirmed dead chick in tire ruts
5	5	G(37) + GB	4.09	on slope of dune	5/1/08	3	Yes	5/10 lost to ghost crab predation, green and blue old bands
6	6	R + G(A0)	6.35	shell flat in dunes	5/2/08	3	Yes	5/28 eggs gone with no signs of predation, adults protective, single red band adult
7	7	G(03) + --	3.52	open shell flat	5/4/08	2	Yes	5/15 lost to storm
8	8	G(F5)+ --	6.59	open beach flat	5/4/08	3	Yes	7/3 1 chick banded G(W0), fledged
9	9	G(F4)+ O	8.95	open beach	5/13/08	3	Yes	5/14 lost to storm, nest site completely underwater, orange
10	10	G(30) + --	10.34	shell flat in dunes	5/14/08	3	No	6/11 est. hatch date, adults false brooding, raccoon tracks, no chicks
11	11	G(F6) + --	0.22	sand dune	5/18/08	3	No	5/28 nest lost to either nutria or ghost crabs
12	12	-- + --	0.24	sand dune	5/18/08	1	No	5/18 one eggs found partially buried, lost unknown
13	5	G(37) + GB	3.83	on dune	5/21/08	3	Yes	5/28 lost to ghost crab predation, green and blue old bands
14	13	G(E0)+ OS	15.96	middle of beach	5/24/08	1	Yes	6/4 lost unknown reasons, nest on high traffic beach near camp, orange lower right and silver lower left bands
15	2	G(C1)+G(F3)	5.71	shell flat	5/26/08	3	Yes	5/30 lost to avian predation
16	9	G(F4) + O	8.56	toe of dune	5/27/08	1	Yes	6/1 nest lost, possible ghost crab predation
17	7	G(O3) +--	3.6	shell flat	5/31/08	1	Yes	6/7 lost, possible ghost crab predation
18	9	G(F4) + O	8.96	upper beach	6/11/08	2	Yes	7/2 began vehicle "escort" through area until 1 chick fledged
19	14	-- + --	2.25	small dunes	6/12/08	2	Yes	7/1 abandoned? 1 egg partially covered, possible storm related
20	2	G(C1)+G(F3)	5.77	shell flat	6/12/08	2	Yes	6/24 lost unknown, bad weather night prior, heavy raccoon tracks
21	13	G(E0) + ?	16.01	mid-beach	6/16/08	2	Yes	7/1 eggs gone - lost to unknown reasons
22	7	G(O3) + --	3.17	shell flats	6/17/08	2	Yes	7/21 and 7/22 ghost crab predation

14 nesting pairs, 22 nests, 4 hatched, 3 chicks fledged

APPENDIX 1B AMERICAN OYSTERCATCHER NESTS- MIDDLE CORE BANKS-2008

Nest #	Pair #	BANDS	MILE	LOCATION	FOUND	EGGS	POSTED	COMMENTS
1	1	-- + --	19.47	shell flat behind dune	5/1/08	3	no	6/2 eggs gone, adults very protective, but no chicks found
2	2	-- + --	20.04	shell flat behind dune	5/1/08	2	no	1 fledgling
3	3	+++ --	20.48	low dune in overwash	5/1/08	3	no	6/2 eggs gone, adult protective & chick tracks, no chicks ever observed
4	4	-- + --	19.54	shell flat behind dune	6/2/08	2	no	7/3 chick banded by Shiloh, 1 fledgling
5	5	-- + --	19.78	small dune top	6/2/08	3	no	7/3 1 chick banded by Shiloh, 3 fledglings
6	6	-- + --	19.63	shell flat at toe of dune	6/9/08	2	no	7/3 2 chicks banded by Shiloh, 2 fledglings

6 nesting pairs, 6 nests, 4 nests hatched, 7 chicks fledged

APPENDIX 1C AMERICAN OYSTERCATCHER NESTS- Ophelia Island-2008

Nest #	Pair #	BANDS	MILE	LOCATION	FOUND	EGGS	POSTED	COMMENTS
1	1	-- + --	22.43	Shell flat	5/2/08	1	yes	probably failure due to storm tide 5/11- 5/13
2	2	unknown	22.34	Shell spot in dunes	5/2/08	3	yes	6/25 1 chick obs. ; 7/4 failed, campers on island for weekend

2 nesting pairs, 2 nests, 1 nest hatched, 0 chicks fledged

APPENDIX 1D

AMERICAN OYSTERCATCHER NESTS- SOUTH CORE BANKS-2008

Nest #	Pair #	BANDS	MILE	LOCATION	FOUND	EGGS	POSTED	COMMENTS
1	1	G(R8)+ OWO	38.01	toe of dune	4/23/08	3	yes	5/7 lost to raccoon predation, left upper orange/ lower white, right upper orange
2	2	G(L2)+G(L3)	38.83	top of dune	4/23/08	3	no	4/27 lost to unknown reasons
3	3	G(L1)+G(16)	43.66	between far dunes	4/23/08	3	yes	5/15 lost to unknown reasons
4	4	-- + --	39.98	toe of dune	4/24/08	2	yes	4/27 nest lost, raccoon tracks near nest
5	5	G(J0)+G(M1)	35.55	on top of dune	4/26/08	3	yes	4/29 nest lost to unknown reasons - possible predation
6	6	G(A8) + --	39.66	base of dune	4/26/08	1	yes	4/27 nest lost, raccoon tracks up to nest
7	7	G(R7) + ?	46.74	high in dunes	5/1/08	2	no	5/22 nest lost to ghost crab predation, ? band unknown combo
8	8	-- + --	32.54	small flat between dunes	5/2/08	3	yes	5/16 nest lost to unknown reasons
9	9	unknown	23.3	sound-side	5/2/08	3	yes	5/14 lost to storm tide
10	10	-- + metal	33.67	toe of dune	5/3/08	2	yes	5/4 run over by ORV's
11	11	G(K0) + --	31.85	shell flat behind dunes	5/4/08	3	no	6/1 mammal predation (fox?)
12	12	unknown	36.08	near back road	5/4/08	2	no	5/8 lost to unknown reasons, backroad closed
13	13	-- + --	26.6	shell flat	5/5/08	4	yes	5/21 lost to unknown reasons - in tern colony
14	14	unknown	34.46	upper beach	5/7/08	2	yes	5/14 lost to raccoon predation
15	15	R(R4)+--	23.4	sound-side	5/7/08	3	yes	5/14 lost to storm tide
16	16	unknown	23.88	oceanside	5/7/08	2	yes	5/14 lost to storm tide
17	2	G(L2)+G(L3)	38.8	in front of vegetation	5/9/08	3	no	5/20 abandoned
18	17	-- + --	46.92	sand flat	5/10/08	2	yes	5/22 raccoon predation
19	5	G(J0)+G(M1)	34.94	toe of dune	5/11/08	3	yes	6/4 lost to unknown reasons
20	4	-- + --	39.93	upper beach	5/7/08	2	yes	5/15 raccoon predation
21	6	G(A8) + --	39.74	upper beach	5/12/08	2	yes	5/13 one egg lost to storm; 5/29 2nd egg lost to unknown reasons
22	18	G(33) + --	24.25	in front of low dune	5/14/08	1	yes	5/14 lost to storm tide
23	19	-- + --	42.92	small dune, soundside	5/14/08	3	no	5/19 raccoon predation
24	20	-- + --	40.7	upper beach	5/14/08	2	yes	5/17 abandoned - busy area w/campers near by
25	21	G(J3) + --	25.16	15 ft in front of back rd	5/16/08	2	no	7/12 chick banded G(EH), 1 chick fledged
26	22	G(J9) + --	37.17	toe of dune	5/16/08	3	yes	5/25 lost to unknown reasons
27	23	-- + --	38.6	between back rd & dune	5/19/08	2	no	5/25 lost to unknown predator

28	1	G(R8)+ OWO	38.02	toe of dune	5/19/08	1	yes	5/25 lost to raccoon predation, left orange/white, right orange
29	24	unknown	28.28	interdunal	5/19/08	3	no	5/28 lost to unknown reasons
30	10	-- + --	33.7	flat behind dune	5/20/08	3	no	5/29 unknown reasons
31	12	RS + --	36.04	soundside of backroad	5/22/08	2	no	6/2 lost to unknown predator, right upper red, lower silver
32	8	-- + --	32.69	toe of dune	5/29/08	3	yes	6/4 lost to raccoon predation
33	13	-- + --	26.65	upper beach	6/2/08	3	yes	6/9 lost to raccoon predation
34	3	G(L1)+G(16)	44.34	flat	6/4/08	3	yes	6/18 abandoned (weather related?)
35	9	unknown	23.18	low dune on sound side	6/5/08	2	yes	6/13 lost to raccoon predation
36	1	G(R8)+ OWO	38.06	toe of dune	6/6/08	2	yes	8/7 chicks banded G(AA) & G(AC), 2 fledged
37	22	G(J9) + --	37.74	toe of dune	6/6/08	2	yes	6/20 lost to unknown reasons
38	10	metal + --	33.92	toe of dune	6/8/08	2	yes	6/16 lost to unknown predator
39	12	R/S + --	36.1	shell flat behind dunes	6/12/08	2	no	6/14 lost to avian (?) predation, right red over silver
40	11	G(K0) + --	31.78	upper beach	6/12/08	2	yes	8/7 chicks banded G(AE); G(AF), 2 fledged
41	6	G(A8) + --	39.71	mid-beach	6/13/08	2	yes	7/3 lost to ghost crab predation
42	16	Y/G, W + --	23.76	front of low dune	6/13/08	2	yes	8/4 chick not observed after search with Shiloh
43	17	-- + --	47.13	on top of dune	6/15/08	2	yes	7/11 chick lost, collected chick for necropsy, sea gull predation
44	2	G(L2)+G(L3)	38.83	toe of dune	6/16/08	1	yes	6/20 nest abandoned

24 nesting pairs, 44 nests, 5 nests hatched, 5 chicks fledged

APPENDIX 1E

AMERICAN OYSTERCATCHER NESTS- SHACKLEFORD BANKS-2008

Nest #	Pair #	BANDS	MILE	LOCATION	FOUND	EGGS	POSTED	COMMENTS
1	1	-- + --	56	toe of dune	4/17/08	3	yes	4/23 nest lost
2	2	G(E8)+ --	54.95	washover shell flat in dunes	5/1/08	3	yes	6/5 no chicks or adult seen, chicks lost
3	3	-- + --	53.7	toe of dune	5/1/08	3	no	5/8 lost to unknown reasons
4	4	-- + --	52.06	shell flat	5/1/08	3	no	5/27 lost to unknown reasons
5	5	-- + --	49.68	large shell flat	5/1/08	2	no	5/1 ATV tracks over nest, 5/22 horse tracks over nest, 6/1 chicks lost
6	6	-- + --	50.19	flat in dunes	5/1/08	3	no	5/8 lost to unknown reasons
7	1	-- + --	55.65	inlet spit shell area	5/8/08	3	yes	5/22 lost to unknown reasons
8	7	-- + --	48.64	grassy shell flat behind dunes	5/8/08	2	no	5/15 lost
9	8	-- + --	50.39	shell flat behind dune	5/15/08	3	no	5/22 lost
10	9	-- + --	49.65	sound side island/shoal	5/15/08	3	no	6/5 adults defensive but no chicks ever found
11	10	-- + --	49.82	shell flat	5/15/08	3	no	5/27 footprints & horse prints all over nest area, nest gone
12	3	-- + --	53.34	dune cliff mound	5/22/08	3	no	6/5 lost to unknown reasons
13	11	-- + --	49.54	unknown	5/22/08	2	no	6/6 no chicks observed
14	6	-- + --	50.14	shell flat	5/22/08	1	no	6/6 lost to unknown reasons
15	3	-- + --	53.99	high on steep berm	6/12/08	1	no	6/19 lost to unknown reasons
16	7	-- + --	47.62	low dune on low flat	6/12/08	2	no	6/19 lost to unknown reasons
17	9	-- + --	50.23	soundside base of shell mound	6/19/08	2	no	6/26 lost to unknown reasons

11 nesting pairs, 17 nests, 3 nests hatched, and 0 chicks fledged

