

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

2007 SUMMARY REPORT



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## **Introduction**

American Oystercatchers are common nesters throughout the park, primarily on the ocean beach. They are listed as a 'Bird of Conservation Concern' on the southeast coastal plain. 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 N. C. State University 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  $\frac{3}{4}$  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**

Weekly surveys of nesting habitat on Core Banks began in April. Nesting on North Core Banks and South Core Banks was monitored 7 days a week from April 9 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 early May.

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. Generally, nests found in the dunes were not posted. There was concern that predators might learn to associate posts with nests. 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 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. Chicks were monitored daily until they fledged or were lost. Most chicks on North Core Banks were monitored using radio transmitters.

## Results

Sixty one 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- 2007

North Core Banks	17 pairs
Middle Core Banks	11 pairs
Ophelia Inlet	2 pairs
South Core Banks	21 pairs
Shackleford Banks	10 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.

### Hatch Success

99 nests were found of which 21 hatched at least one egg. Thirty one chicks were known to survive to fledge (Table 2). Of the nests that failed, 37 nests failed due to unknown causes, 25 were lost during storms, 13 were lost to predation, 2 lost to human disturbance and 1 abandoned (Table 3). Raccoons (12) and one cat were found to be the main predators of oystercatcher eggs. Individual nest data are found in Appendix 1.

Table 2. Oystercatcher Nesting by Island 2007

<b>Island</b>	<b># pairs</b>	<b>#Nests</b>	<b># Nests Hatched</b>	<b># Chicks Fledged</b>
North Core Banks	17	32	8	14
Middle Core Banks	11	11	7	10
Ophelia Island	2	3	2	3
South Core Banks	21	41	4	4
Shackleford Banks	10	12	0	0
<b>CALO Total</b>	<b>61</b>	<b>99</b>	<b>21</b>	<b>31</b>

Table 3. Causes of Nest Failure

<b>Island</b>	<b>Predation</b>	<b>Flooding/ Storms</b>	<b>Human Disturbance</b>	<b>Abandoned</b>	<b>Unknown</b>
North Core Banks	5	12	0	0	7
Middle Core Banks	2	0	0	0	2
Ophelia Island	0	1	0	0	0
South Core Banks	6	10	1	1	20
Shackleford Banks	0	2	1	0	8
CALO total	13	25	2	1	37

Table 4. Summary of Oystercatcher Reproductive Success Data

<b>Year</b>	<b>Island</b>	<b>#Nests</b>	<b>#Nests Hatched</b>	<b>#Chicks fledged</b>
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%)	9
2001	North & South Core Banks	109	19 (17%)	1
2002	North & South Core Banks	90	10 (11%)	6
2003	Cape Lookout N. S.	106	17 (16%)	8
2004	Cape Lookout N. S.	68	37 (54%)	45
2005	Cape Lookout N.S.	65	26 (40%)	18
2006	Cape Lookout N.S.	69	23 (33%)	25
2007	Cape Lookout N.S.	99	21(21%)	31
All		963	220 (23%)	164

### **Banding**

Two adult birds and 14 chicks were captured and banded in the park. Details on oystercatcher band combinations can be found at the website:

[www4.ncsu.edu/unity/users/s/simons/www/AMOY%20Banding.htm](http://www4.ncsu.edu/unity/users/s/simons/www/AMOY%20Banding.htm)

Radio transmitters were placed on 16 chicks on North Core Banks.

## Discussion

Hatch rates in 2007 were vastly different in each area of the park. Hatch success rates were 25% on North Core Banks, 64% on Middle Core Banks, 67% on Ophelia Island, 10% on South Core Banks and 0% on Shackleford Banks. Predators and flooding were the known causes of some nest losses. Sub-Tropical storm Andrea in early May and Tropical Storm Barry in June caused the majority of flood losses. The cause of failure for 37 nests was unknown. There were two human disturbance related nest failures. One on South Core Banks (nest 21) was due to campers and a clean up crew picking up styrofoam in the dunes and staging near a nest site. This clean up effort took place throughout the seashore after Sub-Tropical storm Andrea washed in a large amount of styrofoam. The other disturbance related nest lost took place on the west end of Shackleford Banks at Beaufort Inlet (nest 6). This is a busy area as the water taxis and other boaters land here. The nest site was posted and upon return the next week one sign was missing and there were multiple pedestrian tracks in the closed area. Fledging success in the park was 0.51 chicks per nesting pair with large variance by island. Fledgling success rates were 0.82 on NCB, 0.90 on MCB, 1.5 on OI, 0.19 on SCB, and 0.0 on SH. The use of radio transmitters aided in the determination of the causes of mortality in chicks.

No incidences of chick mortality due to vehicles were documented. 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. In areas without a backroad, signs advising visitors that chicks were in the area and limiting speeds to 15 mph were posted.

Figure 1.

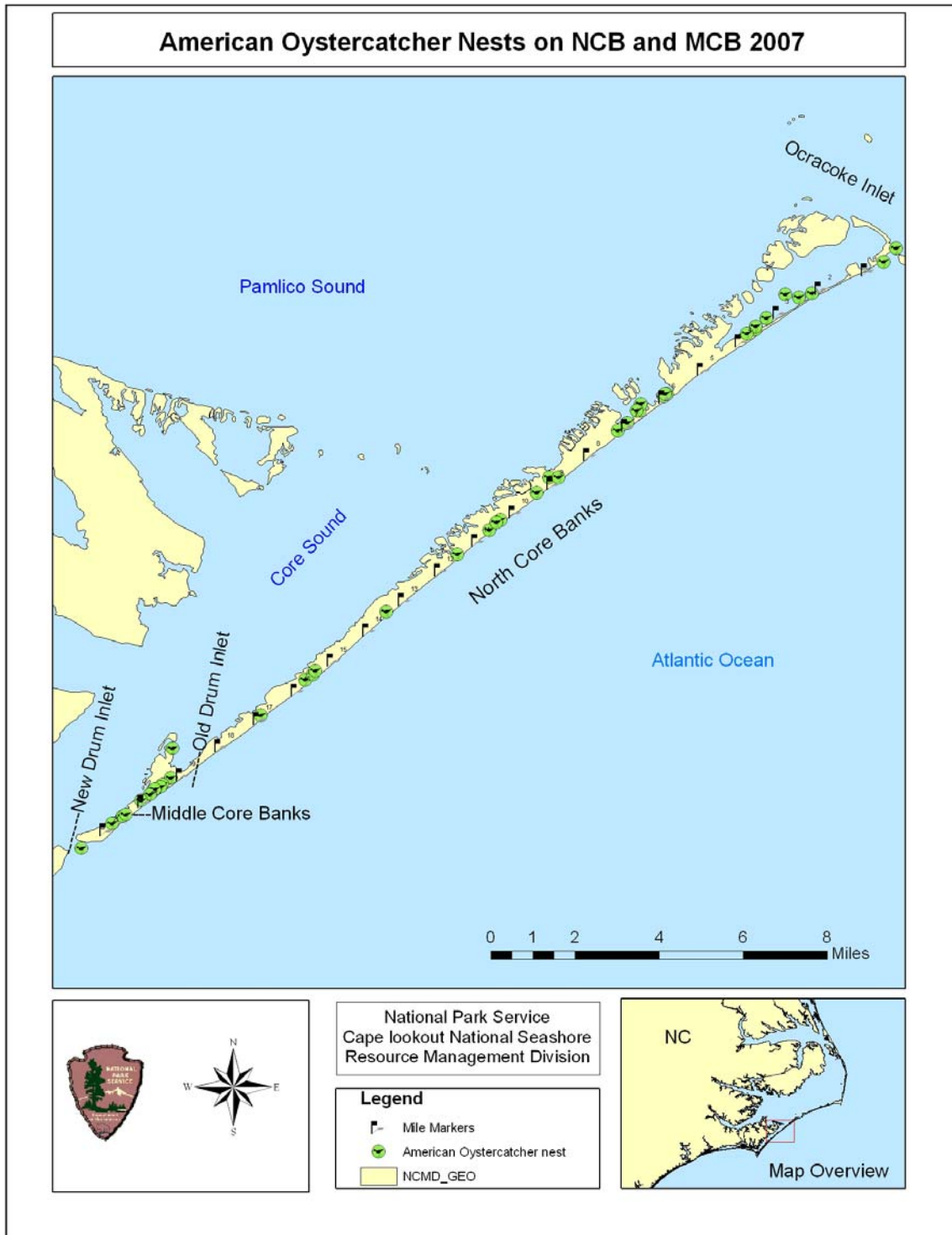


Figure 2.

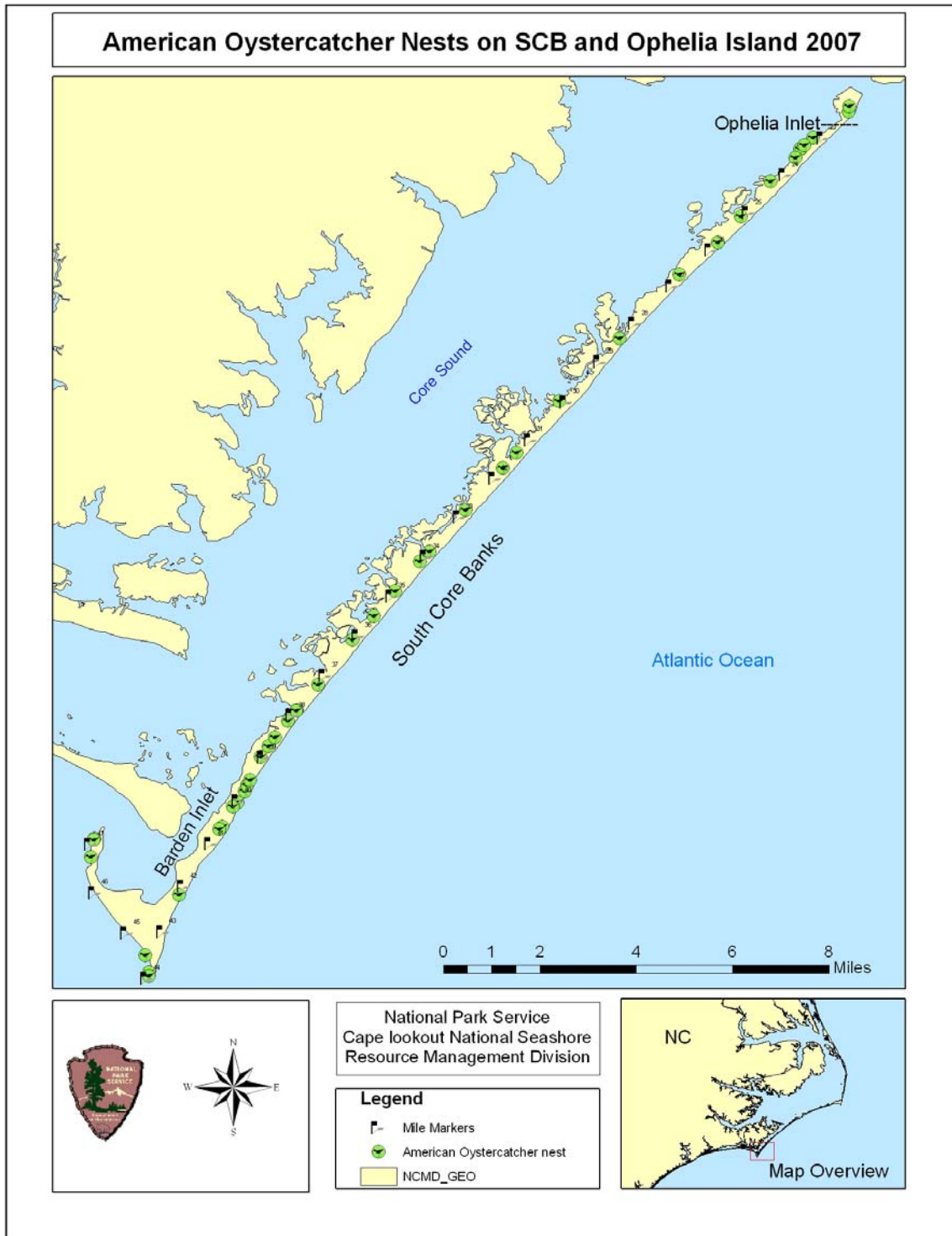
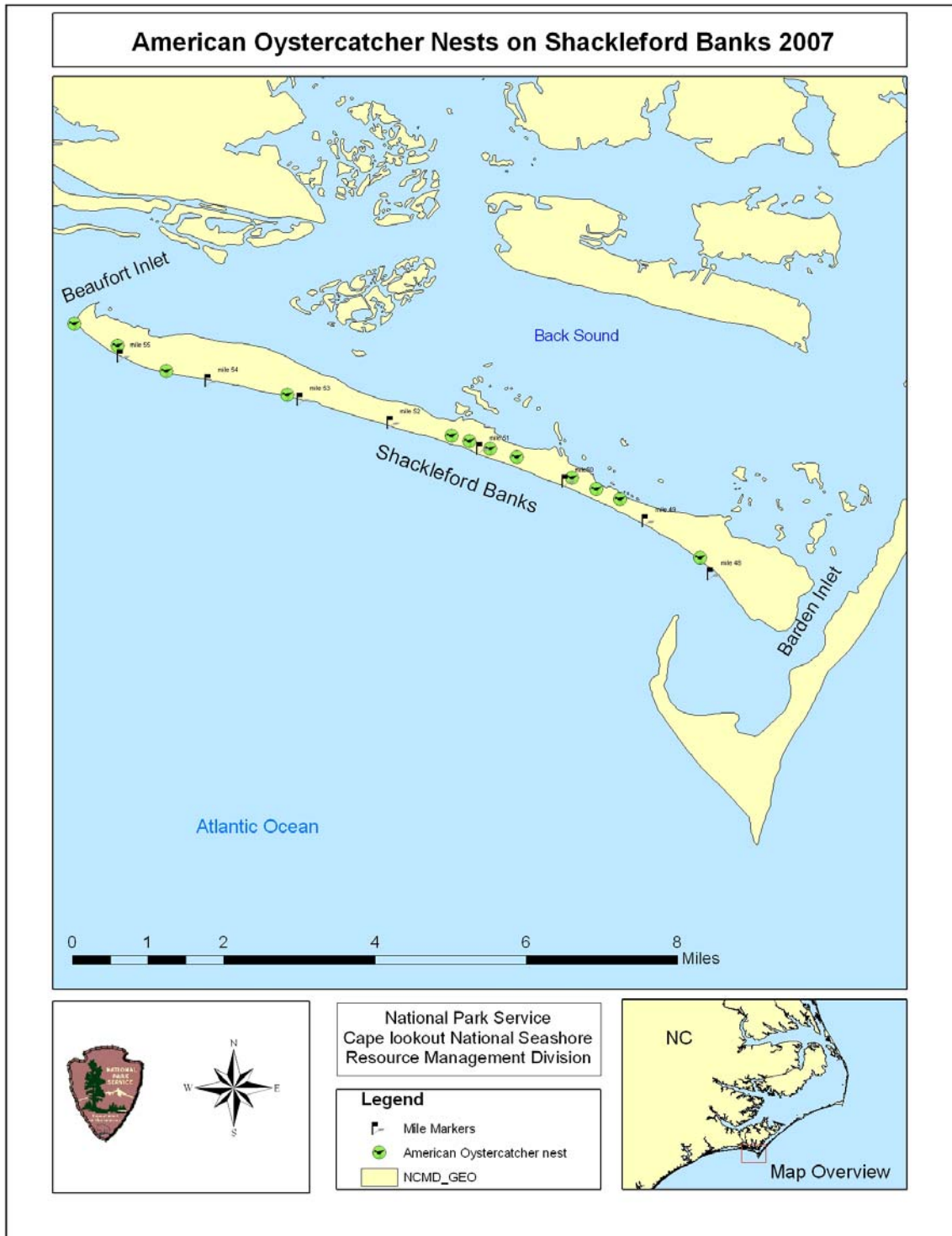


Figure 3.



## APPENDIX 1A

## AMERICAN OYSTERCATCHER NESTS- NORTH CORE BANKS-2007

Nest #	Pair #	MILE	LOCATION	FOUND	EGGS	POSTED	Latitude	Longitude	COMMENTS
1	1	7.5	small dune	4/10/2007	3	N	35.18111	-76.15305	nest lost to storm, 4/18
2	2	9.1	small dune	4/18/2007	2	N	34.98086	-76.1532	nest lost 4/20, unknown
3	3	15.4	shelly flat, west of back road	4/19/2007	1	Y	34.91408	-76.23684	nest lost 4/22, possible mammalian
4	4	9.4	shell flat	4/20/2007	3	N	34.97544	-76.16068	banded 3 chicks, G T7, T8, T9
5	1	7.5	behind dunes	4/26/2007	3	N	35.15138	-76.19833	nest lost to storm, 5/11
6	5	4	shell flat	4/26/2007	3	N	35.18916	-76.22027	nest lost to storm, 5/11
7	6	6	shell flat	5/2/2007	2	N	35.00954	-76.1164	nest lost during storm, 5/9
8	7	6.45	shell flat	5/4/2007	2	Y	35.00602	-76.12479	nest lost to storm, 5/9
9	8	6.6	shell flat	5/4/2007	3	Y	35.00377	-76.12628	nest lost to storm, 5/11
10	9	15.75	shelly flat, west of back road	5/4/2007	3	N	34.91119	-76.24034	nest lost 5/15, unknown
11	2	2	shell flat	5/5/2007	3	Y	34.98073	-76.15642	banded 1 chick, G (T0)
12	3	15.4	shelly flat, west of back road	5/5/2007	2	N	34.913	-76.23782	nest lost to storm, 5/8
13	10	3.3	shell flat on small mound	5/5/2007	1	Y	35.03562	-76.08163	flooded to storm, 5/9
14	11	2.25	small dune	5/5/2007	1	Y	35.04425	-76.06601	flooded to storm, 5/9
15	12	0	small shell flat in dunes	5/5/2007	3	N	35.0597	-76.03706	nest lost to storm, 5/9
16	13	3.6	shell flat	5/5/2007	3	Y	35.03175	-76.08549	flooded to storm, 5/9
17	14	10.3	shelly flat	5/5/2007	3	N	34.96624	-76.17321	nest lost 5/27, unknown
18	15	10.6	toe of dune, beach	5/5/2007	3	N	34.96262	-76.17695	nest lost to storm, 5/9
19	13	3.6	small dune	5/17/2007	3	Y	35.0328	-76.08524	banded chick, G(X7)
20	15	10.48	sand flat	5/19/2007	3	N	34.96531	-76.17454	raccoon predation, 6/15
21	1	7.24	top of dune	5/21/2007	3	N	34.99689	-76.13274	raccoon predation, 6/10
22	8	6.99	top of dune	5/21/2007	3	N	34.99949	-76.12958	raccoon predation, 5/25
23	12	0.07	sand flat	5/23/2007	2	N	35.05506	-76.04133	banded 2 chicks G (X5) (X6)
24	10	2.73	small dune	5/23/2007	2	Y	35.04375	-76.07515	nest lost 6/10, unknown
25	7	6	top of dune	5/25/2007	3	Y	35.00873	-76.11691	nest failed 6/3

26	5	3.8	top of dune	5/25/2007	3	Y	35.03038	-76.08833	Banded 3 chicks, G(X8), (X9), (Y3)
27	16	13.2	dunes	5/25/2007	3	N	34.93455	-76.21252	nest failed 5/28
28	17	11.5	sand flat	5/31/2007	1	N	34.95439	-76.18807	banded 1 chick, G (Y4)
29	11	2.5	sand flat	5/31/2007	2	Y	35.04271	-76.07035	nest abandoned 6/15
30	6	5.95	sand flat	6/3/2007	2	Y	35.00965	-76.11591	banded 2chicks G (Y7), (Y8)
31	8	6.7	top of dune	6/6/2007	2	Y	35.00386	-76.12518	raccoon predation, 6/15
32	14	10.38	small dune	6/8/2007	3	N	34.89899	-76.25558	hatched 7/4, fledged 1 chick, banded G (Y2)

17 nesting pairs, 32 nests, 8 hatched, 14 chicks fledged

APPENDIX 1B AMERICAN OYSTERCATCHER NESTS- MIDDLE CORE BANKS-2007

Nest #	Pair #	MILE	LOCATION	FOUND	EGGS	POSTED	Latitude	Longitude	COMMENTS
1	1	20.55	shell flat	5/12/2007	1	N	34.86421	-76.30318	hatched 6/6, fledged 1 chick on 8/3
2	2	19.25	shell flat	5/25/2007	2	N	34.8775	-76.28668	lost, unknown
3	3	19.45	shell flat	5/25/2007	3	N	34.87532	-76.28954	2 chicks fledge, banded 1 chick G (Y6)
4	4	19.53	shell flat	5/25/2007	2	N	34.87451	-76.29008	chicks lost by 7/7
5	5	19.66	shell flat	5/25/2007	3	N	34.87358	-76.29217	3 chicks fledge, banded 1 chick G (Y5)
6	6	19.8	shell flat	5/25/2007	3	N	34.87173	-76.29382	hatched 6/16, fledged 2 chicks by 8/3
7	7	20.05	shell flat	5/25/2007	3	N	34.86972	-76.2969	raccoon predation, 6/4
8	8	20.4	small dune	5/25/2007	3	N	34.86479	-76.30222	raccoon predation, 6/9
9	9	20.82	shell flat	5/25/2007	3	N	34.86179	-76.30689	hatched by 6/18, fledged 1 chick 7/7
10	10	19	shell bank	5/28/2007	2	N	34.88762	-76.28597	failed by 6/18
11	11	21	low dunes	6/2/2007	2	Y	34.85334	-76.31749	hatched 6/16, fledged 1 chicks on 8/3

11 nesting pairs, 11 nests, 7 nests hatched, 10 chicks fledged

APPENDIX 1C AMERICAN OYSTERCATCHER NESTS- Ophelia Island-2007

Nest #	Pair #	MILE	LOCATION	FOUND	EGGS	POSTED	Latitude	Longitude	COMMENTS
1	1	22.42	low dunes	5/2/2007	3	Y	34.84672	-76.32591	lost to storm, 5/16
2	1	22.2	small shell flat	6/7/2007	2	Y	34.84837	-76.32572	hatched 6/26, fledged 1 chick by 8/8
3	2	22.7	low dunes	n/a	n/a	Y	34.8454	-76.32852	found 3 young chicks on 7/8, fledged 2 chicks on 8/8

2 nesting pairs, 3 nests, 2 nests hatched, 3 chicks fledged

## APPENDIX 1D

## AMERICAN OYSTERCATCHER NESTS- SOUTH CORE BANKS-2007

Nest #	Pair #	MILE	LOCATION	FOUND	EGGS	POSTED	Latitude	Longitude	Comments
1	1	44	open beach	4/17/2007	3	Y	34.58858	-76.53596	Storm
2	2	39.9	open beach	4/19/2007	3	Y	34.66716	-76.49148	Raccoon
3	3	23.14	small flat-soundside	4/20/2007	3	Y	34.83899	-76.33666	Storm
4	4	23.45	small flat-soundside	4/23/2007	1	Y	34.83555	-76.34004	Storm
5	5	33.9	dunes	4/23/2007	1	N	34.71476	-76.45174	Storm
6	6	28.4	open Beach	4/24/2007	3	Y	34.77884	-76.39467	Storm
7	7	39	small flat	4/24/2007	2	N	34.65328	-76.50236	Raccoon
8	8	35.54	small flat	4/25/2007	2	N	34.69539	-76.4684	Abandoned - Eggs scattered - cats
9	9		open beach	4/26/2007	2	Y	34.8076	-76.36321	Unknown
10	10	40.7	open beach	4/26/2007	1	Y	34.63219	-76.51382	Unknown
11	11	39.7	open beach	4/30/2007	1	Y	34.64294	-76.50719	Storm
12	12	42.2	open beach	5/1/2007	2	Y	34.61175	-76.52674	Storm
13	13	40.26	open beach	5/1/2007	1	Y	34.75993	-76.41287	Storm
14	14		Ophelia Island						
15	15	31.76	small flat	5/3/2007	2	N	34.73991	-76.42972	Storm
16	16	46.7	dunes	5/3/2007	2	N	34.62331	-76.55331	1 Chick hatched, disappeared shortly
17	17	24.28	small flat	5/11/2007	3	Y	34.82591	-76.3494	Unknown
18	18	47	dunes	5/11/2007	?	Y	34.62878	-76.55227	Found with broken eggshells
19	5	34.16	small flat	5/15/2007	3	Y	34.71179	-76.45451	2 Chicks fledged
20	19	38.78	dunes	5/15/2007	2	N	34.65635	-76.49996	Unknown
21	2	37.9	dunes	5/16/2007	1	N	34.66706	-76.49171	Disturbance (campers, cleanup crew)
22	13	40.15	small flat	5/17/2007	1	N	34.63835	-76.51069	Unknown
23	4	23.44	small flat	5/21/2007	3	Y	34.83563	-76.34052	Unknown
24	6	26.7	small flat	5/21/2007	3	N	34.798	-76.3767	2 Chicks fledged
25	1	44.47	large flat	5/22/2007	2	Y	34.59368	-76.53696	Raccoon
26	21	37.24	beach	5/22/2007	3	N	34.6748	-76.48515	Unknown
27	20	32.48	beach	5/22/2007	3	N	34.72722	-76.4408	Unknown
28	11	39.6	dunes	5/22/2007	2	N	34.64479	-76.50647	Unknown
29	18	47	dunes	5/23/2007	2	Y	34.62828	-76.55244	Unknown

30	9	25.2	small flat	5/24/2007	3	N	34.81538	-76.3582	Unknown loss, one chick hatched
31	10	40.68	dunes	5/25/2007	2	N	34.63145	-76.51478	Unknown
32	15	31.37	dunes	5/27/2007	2	N	34.74451	-76.42566	Unknown
33	2	38.15	beach	5/27/2007	2	N	34.66405	-76.49415	Unknown
34	3		small flat-soundside	6/2/2007	2	Y	34.83669	-76.33933	Unknown
35	13	40.5	dunes	6/6/2007	2	N	34.63955	-76.50925	Unknown
36	14		Ophelia Island						
37	8	36.15	small flat	6/11/2007	2	N	34.6883	-76.47476	Raccoons
38	19	38.55	small flat	6/11/2007	2	N	34.65909	-76.49811	Unknown
39	1	44	large flat	6/11/2007	2	Y	34.58743	-76.53584	overwash by high tides
40	11	39.66	dunes	6/12/2007	2	N	34.64463	-76.506454	Unknown
41	7	39.53	dunes	6/12/2007	1	N	34.64636	-76.50559	Unknown
42	22	34.9	small flat	6/13/2007	3	N	34.70302	-76.46207	Unknown
43	3	23.63	small flat	6/28/2007	2	Y	34.83291	-76.34188	Raccoon

21 nesting pairs, 41 nests, 4 hatched, 4 chicks fledged (-2 nest/pair Ophelia Island)

APPENDIX 1E AMERICAN OYSTERCATCHER NESTS- SHACKLEFORD BANKS-2007

Nest #	Pair #	MILE	LOCATION	FOUND	EGGS	POSTED	Latitude	Longitude	COMMENTS
1	1	51.2	between dunes	5/4/2007	3	N	34.66566	-76.58924	lost by 5/18/2007, unknown
2	2	55.1	between dunes	5/4/2007	3	N	34.68389	-76.65654	unknown loss
3	3	49.43	shell flat	5/11/2007	2	N	34.6545	-76.56035	unknown loss
4	4	49.71	shell flat	5/11/2007	2	N	34.65646	-76.56492	possible hatch, undetermined, unknown loss
5	5	50.65		5/11/2007	3	N	34.66256	-76.58007	unknown loss
6	6	56	shell flat	5/11/2007	1	Y	34.68809	-76.66479	lots of pedestrian tracks by nest, disturbance
7	7	50.39	shell flat washout	5/18/2007	2	N	34.66664	-76.5926	unknown loss
8	8	50	shell flat	5/25/2007	3	N	34.65861	-76.56952	unknown loss
9	9	53.19	dune cliff	5/25/2007	3	N	34.67447	-76.62405	unknown loss
10	2	54.52	toe of dune	5/25/2007	2	N	34.67906	-76.64718	storm event, flooding
11	10	48.2	toe of dune	6/2/2007	1	N	34.64322	-76.54504	storm event, flooding

10 nesting pairs, 11 nests, 0 hatch, and 0 chicks fledged



