

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

2011 SUMMARY REPORT



*An American Oystercatcher Chick and Egg. Photo Credit: Andy Lawrence 2011*

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## **Abstract**

There were 62 American Oystercatcher pairs nesting throughout the ocean beach habitat of the seashore in 2011. North Core Banks had 32 pairs, South Core Banks had 24 pairs, and Shackleford Banks had 6 pairs. Egg-laying was initiated on April 10<sup>th</sup> and a total of 114 nests were documented. Thirty-seven chicks fledged: 24 from North Core Banks, 12 from South Core Banks, and 1 from Shackleford Banks. North Core Banks was the most productive with a fledge success rate of 0.75, while South Core Bank's fledge success was 0.50, and Shackleford continues to be the least productive with a fledge success rate of 0.17. Overall for the entire seashore, the fledge success rate was 0.60 per nesting pair.

## **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 oystercatchers in the park.

## **Site Description**

Cape Lookout National Seashore is located in the southern Outer Banks of North Carolina between Ocracoke and Beaufort Inlets. The seashore was divided into three barrier islands during the 2011 breeding season. The northernmost island, North Core Banks (NCB), was approximately 23 miles long, extending from Ocracoke Inlet to Ophelia Inlet. 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 third island, Shackleford Banks (SB), 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**

The Interim Protected Species Management Plan/ Environmental Assessment (IPSMP/EA) 2006 contains outlines of management and monitoring protocols. Park service staff conducted surveys of Shackleford Banks nesting birds once a week beginning in April. Weekly surveys of nesting habitat on North and South Core Banks also began in April and breeding monitoring was continued seven days per week until the end of the nesting season. In 2011, NCSU researchers conducted focused monitoring of American Oystercatchers on North and South Core Banks allowing park staff to closely

monitor other protected species. Park staff still performed management actions for oystercatchers.

Management actions for oystercatchers included closing the area around the a nest 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.

In addition to the closure around the nest, a 600-foot buffer was established around each nest. This buffer allowed vehicle and pedestrian traffic to pass by on the lower beach by the ocean shoreline, but prevented stopping, parking, or camping near the nest. The buffer zone was defined by two sets of 18” X 18” yellow signs placed on each side of a nest.

The locations of the nests were recorded using a GPS unit and the park’s mile marker system. Nest locations were marked inconspicuously with either a stake or objects like sticks or shells to facilitate follow-up checks. Information about the habitat type was also noted. If one or both adults were banded, that information was recorded on the nest data sheet.

Nests were checked regularly, every 1 to 3 days, to monitor the status of incubation and document losses. One day before the expected time of hatch, the ocean beach in that area was closed to vehicles with traffic routed to the backroad. In areas where there is no backroad, signs were placed on the beach warning of the presence of flightless chicks and reducing the speed limit to 15mph. Chicks were monitored daily until they fledged or were lost. Since 2010, chicks were considered fledged at 35 days old for productivity purposes. For management purposes, the chicks are considered fledged when strong flight is actually observed.

## Results

Sixty two 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- 2011

North Core Banks	32 pairs
South Core Banks	24 pairs
Shackleford Banks	7* pairs

Nesting pairs were spread throughout most of the ocean beach habitat in the park (Figures 1 & 2). The birds did not use areas adjacent to buildings and concentrations of people.

\*Shackleford and South Core shared a nesting pair

## Hatch and Fledge Success

One hundred fourteen nests were found of which 29 hatched at least one egg. Thirty-seven chicks were known to survive 35 days to fledge (Table 2). Of the nests that failed, 46 were lost to predation, 32 nests failed due to unknown causes, 5 were abandoned, one was lost to a weather event, and one was lost to human disturbance (Table 3). Raccoons (34), mink (7) cat (1), ghost crab (1), fish crow (1) and undetermined mammalian (3) were found to be predators of oystercatcher eggs. Table 4 summarizes the reproductive success over the last 15 years. Table 4 data were reviewed and updated for this current report and differ slightly from past report summaries. The fledgling success is calculated using the known nesting pairs. This allowed for cross-year comparisons with variable monitoring efforts and other unknowns. In 2011, sixty-two known nesting pairs produced thirty-seven fledglings for a fledge success rate of 0.60. Individual nest data are found in Appendix 1. Tables 5, 6, 7, and 8 summarize the reproductive success by island with known and comparable data.

Table 2. Oystercatcher Nesting by Island 2011

<b>Island</b>	<b># pairs</b>	<b>#Nests</b>	<b># Nests Hatched</b>	<b># Chicks Fledged</b>
North Core Banks	32	54	18 (33%)	24
South Core Banks	24	51	9 (18%)	12
Shackleford Banks	7*	9	2 (22%)	1
CALO Total	62	114	29 (25%)	37

\*Shackleford and South Core shared a nesting pair

Table 3. 2011 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	28	1	0	4	3
South Core Banks	18	0	0	1	23
Shackleford Banks	0	0	1	0	6
CALO total	46	1	1	5	32

Table 4. Summary of Seashore Oystercatcher Reproductive Success Data, 1995-2011

<b>Year</b>	<b>Island</b>	<b>#Nests</b>	<b>#Nests Hatched</b>	<b># Pairs (nesting)</b>	<b>#Chicks fledged</b>
1995	South Core Banks	36	12 (33%)	20	7 (0.35)
1997	South Core Banks	34	4 (12%)	23	2 (0.08)
1998	North & South Core Banks	98	12 (12%)	58	7 (0.12)
1999	North & South Core Banks	114	16 (14%)	67	6 (0.09)
2000	North & South Core Banks	74	25 (34%)	54	7 (0.13)
2001	North & South Core Banks	109	20 (18%)	56	2 (0.03)
2002	North & South Core Banks	89	8 (10%)	46	6 (0.13)
2003	Cape Lookout N.S.	105	17 (16%)	54	8 (0.15)
2004	Cape Lookout N.S.	71	38 (54%)	52	45 (0.86)
2005	Cape Lookout N.S.	66	26 (39%)	54	18 (0.33)
2006	Cape Lookout N.S.	70	23 (33%)	52	26 (0.50)
2007	Cape Lookout N.S.	99	21(21%)	61	31 (0.51)
2008	Cape Lookout N.S.	91	17 (19%)	57	15 (0.26)
2009	Cape Lookout N.S.	83	20(24%)	61	21 (0.34)
2010	Cape Lookout N.S.	113	28 (25%)	62	34 (0.55)
2011	Cape Lookout N.S	114	29 (25%)	62	37 (0.60)

Table 5. Summary of North Core Banks Oystercatcher Reproductive Success Data, 1998-2011

<b>Year</b>	<b>Island</b>	<b>#Nests</b>	<b>#Nests Hatched</b>	<b># Pairs (nesting)</b>	<b>#Chicks fledged</b>
1998	North Core Banks	72	5 (7%)	38	4 (0.10)
1999	North Core Banks	62	11 (18%)	39	5 (0.13)
2000	North Core Banks	36	7 (19%)	29	1 (0.03)
2001	North Core Banks	53	12 (22%)	29	1 (0.03)
2002	North Core Banks	46	4 (9%)	23	5 (0.22)
2003	North Core Banks	36	7 (19%)	20	2 (0.10)
2004	North Core Banks	25	20 (80%)	21	31 (1.48)
2005	North Core Banks	20	11 (55%)	16	6 (0.38)
2006	North Core Banks	18	8 (44%)	14	5 (0.36)
2007	North Core Banks	32	8 (25%)	17	14 (0.82)
2008	North Core Banks	22	4 (18%)	14	3 (0.21)
2009*	North Core Banks *	40	7 (18%)	29	8 (0.28)
2010*	North Core Banks *	58	15 (26%)	31	15 (0.48)
2011*	North Core Banks *	54	18 (33%)	32	24 (0.75)

\* Includes former Middle Core Banks and Ophelia Island.

Table 6. Summary of former Middle Core Banks and Ophelia Island, Mile 19 to Mile 22.5, Oystercatcher Reproductive Success Data from 2004 to 2011.

<b>Year</b>	<b>Island</b>	<b>#Nests</b>	<b>#Nests Hatched</b>	<b># Pairs (nesting)</b>	<b>#Chicks fledged</b>
2004	MCB	5	4 (80%)	5	7 (1.40)
2005	MCB	9	5 (55%)	7	9 (1.28)
2006	MCB and OI	10	8 (80%)	10	10 (1.00)
2007	MCB and OI	14	9 (64%)	13	13 (1.00)
2008	MCB and OI	8	5 (62%)	8	7 (0.88)
2009	MCB and OI	13	3 (23%)	10	1 (0.10)
2010	MCB and OI	24	4 (17%)	13	2 (0.15)
2011	MCB and OI	23	8 (35%)	14	12 ( 0.86)

Table 7. Summary of South Core Banks Oystercatcher Reproductive Success Data from 1995 to 2011

<b>Year</b>	<b>Island</b>	<b>#Nests</b>	<b>#Nests Hatched</b>	<b># Pairs (nesting)</b>	<b>#Chicks fledged</b>
1995	South Core Banks	36	12 (33%)	20	7 (0.35)
1997	South Core Banks	34	4 (11%)	23	2 (0.09)
1998	South Core Banks	26	7 (27%)	20	3 (0.15)
1999	South Core Banks	52	5 (10%)	28	1 (0.04)
2000	South Core Banks	38	18 (47%)	25	6 (0.24)
2001	South Core Banks	56	8 (14%)	27	1 (0.04)
2002	South Core Banks	43	4 (9%)	23	1 (0.04)
2003	South Core Banks	59	9(15%)	27	6 (0.22)
2004	South Core Banks	33	13 (39%)	20	6 (0.30)
2005	South Core Banks	27	9 (33%)	22	3 (0.14)
2006	South Core Banks	31	6(19%)	19	10 (0.53)
2007	South Core Banks	41	4(21%)	21	4 (0.19)
2008	South Core Banks	44	5 (11%)	24	5 (0.21)
2009	South Core Banks	30	11(37%)	22	11 (0.50)
2010	South Core Banks	43	11 (25%)	23	17 (0.74)
2011	South Core Banks	51	9 (18%)	24*	12 (0.50)

\*Shackleford and South Core shared a nesting pair

Table 8. Summary of Shackleford Banks Oystercatcher Reproductive Success Data from 2003 to 2011

Year	Island	#Nests	#Nests Hatched	# Pairs (nesting)	#Chicks fledged
2003	Shackleford Banks	10	1 (10%)	7	0 (0.00)
2004	Shackleford Banks	8	1 (14%)	6	1 (0.17)
2005	Shackleford Banks	10	1 (10%)	9	0 (0.00)
2006	Shackleford Banks	11	1 (9%)	9	1 (0.11)
2007	Shackleford Banks	12	0 (0%)	10	0 (0.00)
2008	Shackleford Banks	17	3 (18%)	11	0 (0.00)
2009	Shackleford Banks	13	2 (15%)	10	2 (0.20)
2010	Shackleford Banks	12	2 (17%)	8	2 (0.25)
2011	Shackleford Banks	9	2 (22%)	7*	1 (0.14)

\*Shackleford and South Core shared a nesting pair

### **Banding**

Thirty-five chicks and one adult were captured and banded in the park by NCSU researchers. Two chicks were lost after banding and four fledged without bands. Park staff and researchers recorded band re-sights of individuals and nesting pairs in the seashore throughout the summer. Of the 62 nesting pairs 39 pairs (63%) had at least one individual of the pair banded, while 23 pairs (37%) were unbanded. NCB had 21 pairs banded and 11 pairs unbanded. SCB had 17 pairs banded and 7 pairs unbanded. SB had two pairs banded and 5 unbanded pairs. There are 56 (45%) individual adults that are banded and 68 (55%) that are unbanded in the nesting population in 2011. See appendix 1 for nesting pair re-sight data and 2011 chick band data. Green flags with 3 letter codes were introduced this year in the banding program. Details on oystercatcher band combinations can be found at the website: <http://www.amoywg.org/banding-re-sighting/>.

## Discussion

Both Old Drum Inlet and New Drum Inlet remained closed in the 2011 nesting season. In late August Hurricane Irene passed over Cape Lookout and the both inlets were reopened. These inlets are relatively shallow and may fill in by the summer of 2012. Old Drum and New Drum Inlets closed naturally in March 2009. This action joined the previously isolated 3.5 miles of Middle Core Banks and Ophelia Island to North Core Banks and provided for vehicle access down to Ophelia Inlet. The breeding seasons from 2000 to 2008 on Middle Core Banks experienced little recreational disturbance and reduced predation levels as a 3 mile separate island. Ophelia Island was similarly isolated for the three breeding seasons from 2006 to 2008 until New Drum Inlet closed. The hatch rates and fledgling success in this area were the highest in the seashore during those years of isolation, Table 6. Table 6 contains data from 2004 to 2011. Monitoring and data collection were inconsistent from 2000 to 2003. In 2008, seven oystercatcher chicks fledged from mile 19 to mile 22.5 of the seashore, while only one chick in 2009 and two chicks in 2010 fledged from this same area. A backroad vehicle trail behind the dunes was established from mile 19 to mile 21 with three access ramps in early 2011. This enabled traffic to be detoured off the ocean beach to the backroad when chicks were present. In 2011 twelve chicks fledged from this area and the productivity and the hatch success increased from 2009 and 2010 levels. These productivity and hatch success rates are still lower than the years when Middle Core Banks was an isolated island.

North Carolina State University research activity in the seashore continued to study the raccoon population and the American Oystercatcher breeding success on SCB in 2011. A separate research project studying American oystercatcher response to a lowered military flight ceiling over a section of NCB concluded at the end of the 2011 nesting season.

Hatch rates in 2011 varied throughout the park. Hatch success rates were 33% on North Core Banks, 18% on South Core Banks and 22% on Shackleford Banks. Predators, flooding, and human disturbance were the known causes of some nest losses. Forty seven nests were known lost to predators, 28 on NCB and 19 on SCB. Research use of video cameras on nests on NCB documented raccoons as the primary predator and decreased the number unknown causes of nest loss. There were three unknown nest failures on NCB compared to 25 unknown nest failures on SCB, which did not have nest cameras. On SB six of the nine nests were lost for unknown reasons. Mink were a significant predator of nests (7) on SCB. Only one nest was lost to flooding and /or high wind events. Five nests were abandoned. There was one human disturbance related nest failure on SB, identified as such by footprints up to the nest and a campsite within 100 feet. An egg was missing from the nest and the adults had abandoned the remaining egg. In addition there was a pair setting up territory on the west end of SB in early April that was not seen after the Easter Holiday. Pedestrian traffic is high in this area where boat ferries drop off passengers. This, combined with the loss of habitat due to erosion may have contributed to the lack of two pairs from nesting in former year territories on the west end of SB. Hurricane Irene improved the habitat by flattening the dunes and creating sand flats in this area, which should provide good nesting habitat in 2012.

There were no incidences of chick mortality due to vehicles documented in the seashore in 2011. Nest 25 on NCB at mile 21.30 hatched on May 28<sup>th</sup> during Memorial Day weekend onto a section of beach without a backroad for detouring traffic. Signs were placed to slow down beach traffic and to warn of the chick's presence, however the chicks were not seen after May 29<sup>th</sup>. The heavily tire-rutted beach was searched for dead chicks, but none were found and the chick loss was classified as unknown. Researchers on NCB reported a chick from nest NCB 21 with a leg injury after it was banded at age 32 days: the chick, G (KU), was not seen again. Its sibling, G (TL), did fledge from the same beach that was open to vehicles due to the lack of a backroad. The chick loss was classified as unknown. There was one known chick mortality that occurred during the recapture and weighing process. One chick from nest NCB 42 banded G (CEL), at age 30 days, was recaptured at age 38 days to be weighed. It sustained a wing injury and died in hand. Its sibling, G (CEM), did fledge from this nest.

Fledging success in the park was 0.60 chicks per nesting pair with a large variance by island. Fledging success rates were 0.75 on NCB, 0.50 on SCB, and 0.14 on SB. Fledge success on NCB was the third highest on record and Shackleford Banks continues to have low fledge success (Table 5 & 8). A range-wide productivity standard was established defining fledging at 35 days old. This standard provides consistence throughout the nesting range. A total of 37 chicks reached 35 days old and were considered fledged: this is reflected in the 0.60 productivity rate. However, we know that not all chicks can actually fly at day 35. The average age of chicks fledging in 2011 from 18 broods was 42 days from the hatch date. This calculation excludes four broods with unknown exact fledge dates. The range of fledging age, determined from the 18 broods, was from 38 to 46 days (Appendix 1). Chicks are monitored and managed until they exhibited strong flight greater than 150 feet.

Figure 1.

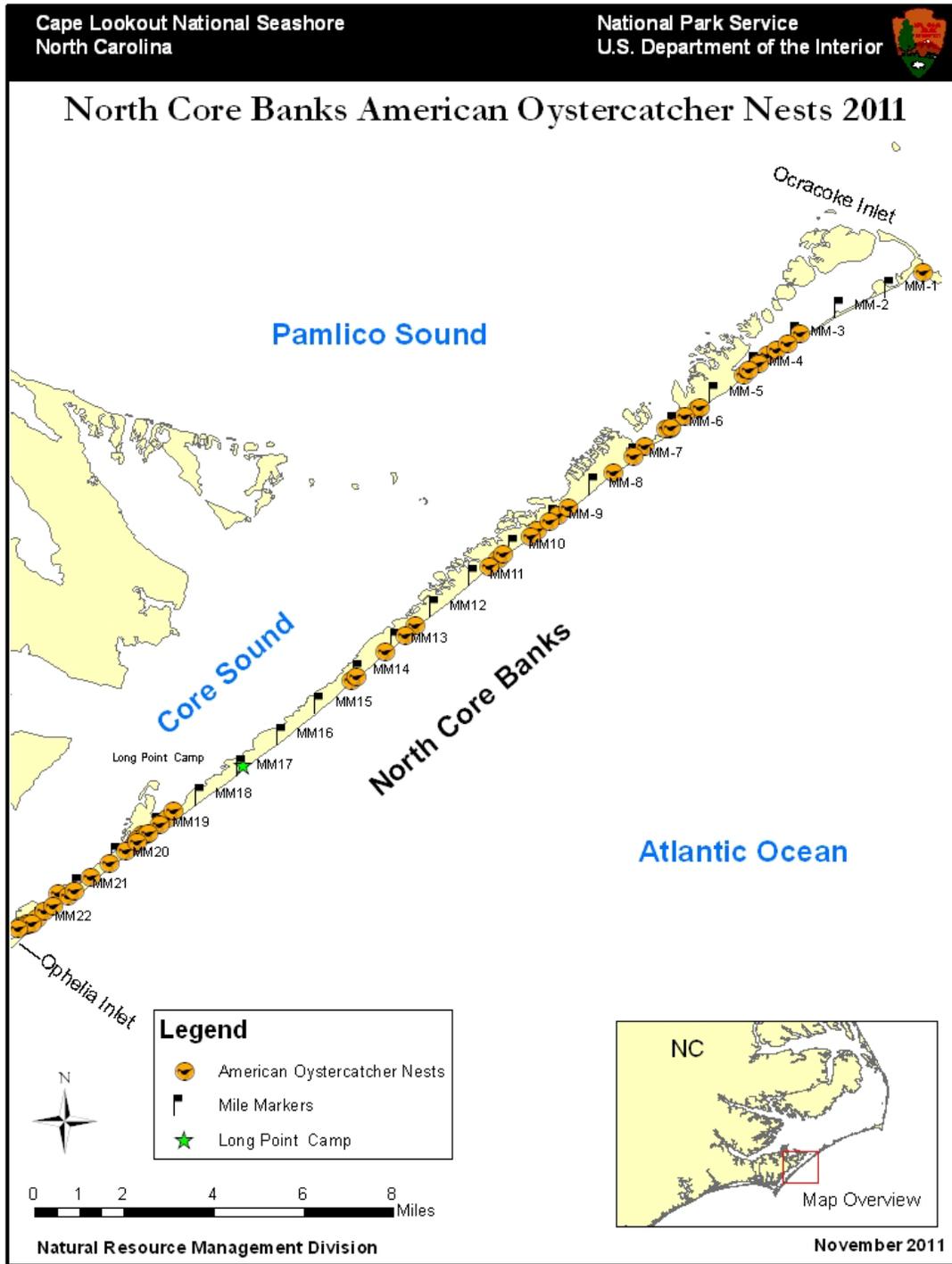
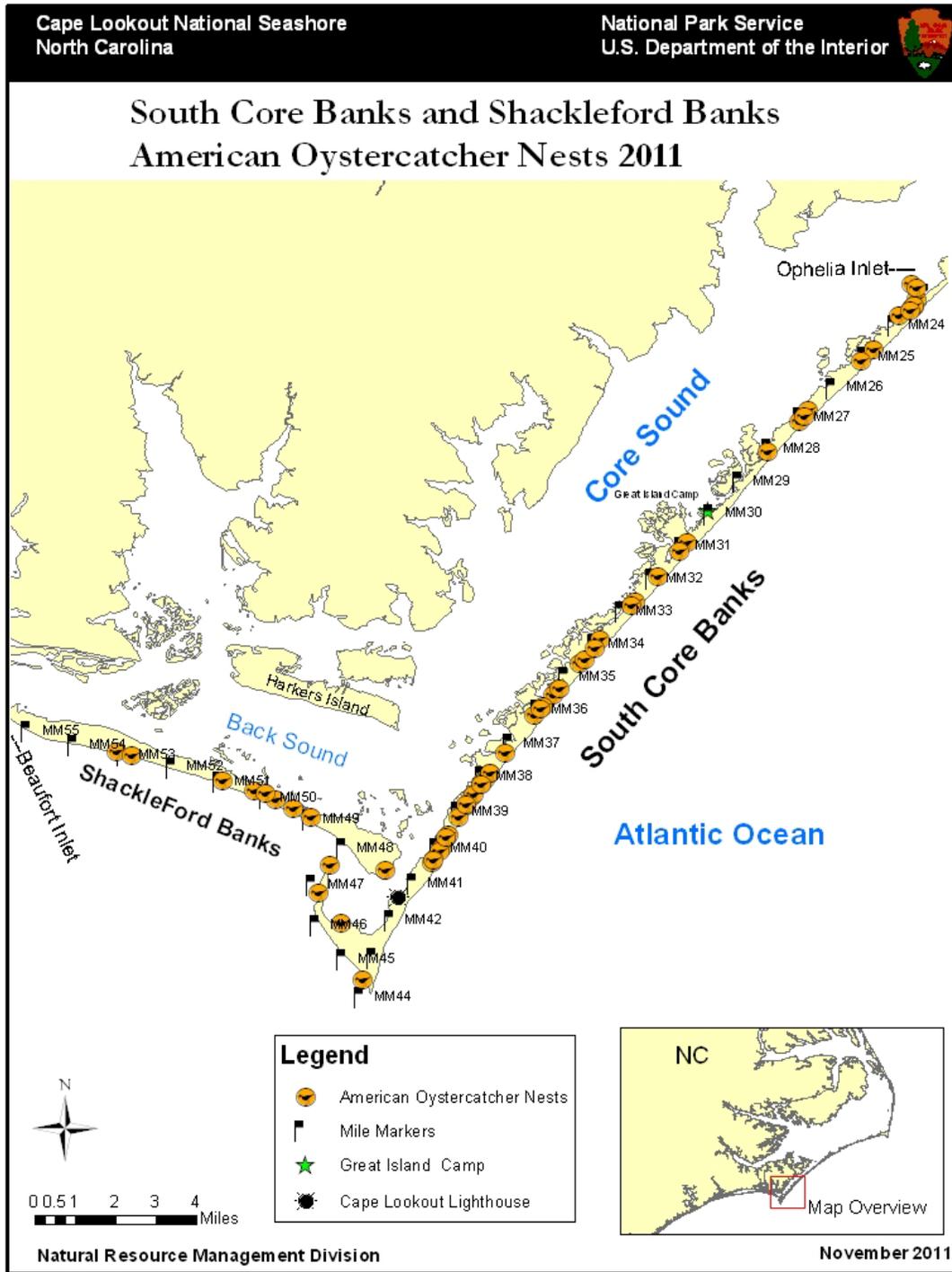


Figure 2.



## APPENDIX 1A

## AMERICAN OYSTERCATCHER NESTS- NORTH CORE BANKS-2011

Nest #	Pair #	Adult BANDS	MILE	LOCATION	FOUND	EGGS	POSTED	COMMENTS
1	1	G(04) & G(73)	9.53	Open Beach	14-Apr	3	yes	Raccoon ate 1 chick and two eggs caught on video
2	2	UNB +UNB	20.32	Open Beach	17-Apr	3	yes	Chicks: G(TN) & G(RT), 2 fledged day 41
3	3	G(UW) & UNB	7.63	Open Beach	18-Apr	3	yes	Chicks: G(RU) & G(TR), 2 fledged day 41
4	4	UNB +UNB	19.40	Behind Dunes	22-Apr	3	no	Chicks: G(CEF) Flag , 1 fledged day 39
5	5	UNB +UNB	19.72	Base of Dune	22-Apr	3	Yes	Chicks: G(CEN) & G(CEE) flags, 2 fledged day 40
6	6	UNB +UNB	19.95	Open Beach	22-Apr	3	yes	Chicks: G(RR) & G(RP), 2 fledged day 38
7	7	UNB +UNB	22.38	dunes	22-Apr	3	yes	Nest Failed 5/12/11, raccoon tracks at nest, predation
8	8	G(EO) & _,X:_	14.30	Open Beach	22-Apr	3	yes	Chicks: G(CEC) & G(CEA), two chicks seen on 6/24-6/26 day 35 to 37, only one chick seen flying for sure on 7/3 ay day 44 2 chicks fledged
9	9	G(M3) & UNB	10.51	Near base of dune	22-Apr	2	yes	Failed 4/26/11, Raccoon/Cat
10	10	G(UU) & UNB	9.00	Base of Dune	22-Apr	4	yes	Failed 5/11/11, Raccoon tracks present
11	11	G(AU) & _:R, X	12.62	Base of Dune	23-Apr	3	yes	Failed 5/8/11, Egg yolk and ants near nest, Ghost crab tracks present, also raccoon tracks nearby.
12	12	G(AO) & R;X:_	6.20	shell flat	23-Apr	2	yes	Failed 5/3/11, predated, Raccoon tracks present
13	13	_,silver:_white & UNB	19.00	shell flat	23-Apr	3	yes	Failed 5/20/11, Raccoon tracks present
14	14	G(F3) & G(CI)	5.53	Base of Dune	23-Apr	3	yes	Failed 5/14/11, Raccoon tracks present
15	15	UNB & G(M8)	19.59	Behind Dunes	23-Apr	3	yes	Failed 5/12/11, Raccoon tracks present
16	16	G(?H) & X;_	4.42	Open Beach	23-Apr	3	yes	Failed 5/9/11, Raccoon tracks, Camera was at nest
17	17	G(T6) & _,X:B	3.73	Open Beach	23-Apr	3	yes	Failed 4/26/11, Unknown
18	18	R(P9) & UNB	22.52	Top of Dune	23-Apr	2	yes	Failed 4/29/11, Eggs buried under 8" sand after high winds on 4/28/11
19	19	UNB & UNB	20.78	In Dunes	24-Apr	3	yes	G(CEJ) & G(CK) 2 fledged day 42, G(CEH) not seen
20	20	G(F6) & UNB	0.32	open beach	24-Apr	3	yes	Failed 5/20/11, unknown
21	21	UNB & UNB	6.82	Shell bed	26-Apr	3	no	G(TL);G(KU)-released with injured left leg, not seen after day 32
22	22	G(F1) & UNB	3.60	Shell bed	29-Apr	3	yes	Failed 5/24/11, 1 chick predated, Aerial?, 1 egg abandoned
23	23	G(P5) & UNB	22.10	Sand Flat	28-Apr	3	yes	Chicks: G(CEK), G(KR), 2 fledged day 42
24	24	UNB& _b/X:_ , g	21.40	Soundside	29-Apr	3	yes	Failed 5/6/11, Raccoon caught on Video predated nest
25	25	UNB & G(K2)	21.30	Behind Dunes	29-Apr	2	no	Failed 5/30/11, UNK,

26	26	G(W5) & UNB	13.25	Base of Dune	30-Apr	2	yes	Failed 5/6/11, UNK
27	27	G(EL) & UNB	7.12	Base of Dune	1-May	2	yes	Failed 5/27/11, Raccoon
28	28	UNB & UNB	9.71	Open Beach	5-May	2	yes	Failed 5/26/11, Raccoon
29	29	G(74) & G(MD)	19.37	Behind Dunes	6-May	2	yes	Failed 5/7/11, predation, unknown animal
30	9	G(M3) & UNB	10.74	Base of Dune	8-May	3	yes	Chick: G(CEY) flag 1 fledged day 41
31	30	UNB & UNB	3.02	low dune	9-May	1	yes	Failed 5/12/11, Abandoned, UNK why
32	31	UNB & UNB	10.34	Behind Dunes	10-May	2	yes	Failed 5/29/11, Raccoon
33	18	Red(P9) & UNB	22.46	shell bed	10-May	2	yes	Failed 6/1/11, Raccoon seen on video
34	17	G(T6) & _,X:B	4.00	Base of Dune	11-May	3	yes	lost 5/23/11 GC hole in nest & raccoon tracks near nest
35	32	UNB & UNB	19.07	Old Drum	13-May	2	yes	Failed 6/3/11, Raccoon on video
36	12	G(AO) & R;X:_	6.24	On top of dune	16-May	3	yes	Failed 5/26/11, Abandoned UNK, lost two eggs
37	26	G(W5) & UNB	14.19	Open Beach	17-May	2	yes	Failed 7/14/11, Abandoned 1 month after hatch date, Fish Crow took 1 egg 6/15 on video
38	29	G(74) & G(MO)	19.36	Shell bed	18-May	2	yes	Failed 6/7/11, Raccoon
39	11	G(AU) & _,R, X	12.91	Open Beach	19-May	3	yes	Chicks: G(CEX) & G(CEU), 2 fledged day 44
40	24	UNB & Blue/silver: Green	21.95	dune	20-May	3	yes	Failed 6/1/11, Raccoon
41	16	UNB & G( ?,H)	4.26	Base of Dune	20-May	3	yes	Failed 6/15/11, Feral Cat tracks at nest
42	10	G(UU) & UNB	8.76	Base of Dune	21-May	3	yes	Chick G(CEM) fledged day 44, Chick:G(CEL) died at day 38 during capture, considered fledged
43	15	G(M8) & UNB	19.62	Base of Dune	23-May	1	yes	Chick: G(CEP) fledged day 40
44	1	G(04) & G(73)	9.24	Open Beach	25-May	3	yes	chick unbanded 1 fledged day 45
45	14	G(F3) & G(CI)	5.48	Open Beach	25-May	3	yes	Failed 6/7/11, Raccoon
46	7	UNB & UNB	22.36	Base of Dune	26-May	2	yes	Failed 5/30/11, predation, unknown animal
47	12	G(AO) & R;X:_'	6.18	Open Beach	1-Jun	2	no	Failed 6/8/11, yolk in and around nest, Raccoon tracks.
48	13	G(CER) & _,X:_,W	18.68	Soundside	6-Jun	2	Yes	Chick: G(W4), seen at day 35, 36 and 44, 1 fledged
49	22	G(F1) & UNB	3.35	Open Beach	7-Jun	2	yes	Failed 6/27/11, Raccoon caught on video
50	7	UNB & UNB	22.30	Shell bed	11-Jun	2	yes	Failed 6/24/11, Raccoon on video
51	24	UNB&_b/X:_, g	21.74	Shell bed	13-Jun	2	yes	Failed 6/25/11, Raccoon on video
52	25	G(K2) & UNB	21.22	In Dunes	13-Jun	2	yes	Failed 7/1/11, Raccoon on video
53	18	R(P9) & UNB	22.56	Shell bed	14-Jun	1	yes	Failed 6/21/11, Abandoned reason UNK
54	14	G(F3) & G(CI)	5.84	Shell bed	20-Jun	2	yes	Failed 6/29/11, Raccoon seen on video

32 nesting pairs, 54 nests, 18 nests hatched, 24 chicks fledged

## APPENDIX 1B

## AMERICAN OYSTERCATCHER NESTS- SOUTH CORE BANKS-2011

Nest #	Pair #	Adult BANDS	MILE	LOCATION	FOUND	EGGS	POSTED	COMMENTS
1	1	G(16) & UNB	44.42	open beach	10-Apr	3	yes	Chicks: G(YM) & G(68), 2 fledged day 39
2	2	G(R8) & UR-O,UL-O	38.1	Base of dune	16-Apr	2	yes	Failed 5/4/11, UNK
3	3	G(AK) & G(AL)	23.26	Soundside	21-Apr	4	yes	Failed 4/27/11, UNK
4	4	G(UP) & G(UR)	39.9	Base of dune	21-Apr	3	yes	Failed 5/7/11, Mink tracks around nest
5	5	G(KO) & UNB	31.92	Open Beach	21-Apr	3	yes	Chicks: G(HH), G(YP), G(N8), 3 fledged by day 48
6	6	G(AP) & G(AR)	33.88	Behind Dune	21-Apr	3	yes	Failed 5/2/11, UNK
7	7	UNB & UNB	26.8	Base of dune	22-Apr	3	yes	Chick: G(T3) 1 fledged day 46
8	8	G(J3) & G(P4)	24.8	Shell bed	22-Apr	3	yes	Failed 4/29/11, Raccoon track near nest
9	9	UNB & UNB	38.58	dunes	22-Apr	3	yes	Failed 5/3/11, Mink track leading to nest
10	10	G(JO) & G(M1)	35.4	Behind Dune	23-Apr	3	yes	Failed 4/27/11, UNK
11	11	O, S: B, - & UNB	28.1	Behind Dune	23-Apr	3	yes	Failed 5/1/11, Raccoon tracks present
12	12	UR-Red & UNB	36.17	Behind Dune	24-Apr	3	no	Failed 5/2/11, Nutria and snake tracks near nest
13	13	G(J6) & UNB	34.62	Behind Dune	24-Apr	3	yes	Failed 4/28/11, UNK, mink tracks near nest on 4/24
14	14	G(L2) & LL-silver	39.6	Base of dune	24-Apr	3	yes	Failed 5/2/11, Mink tracks at nest, yolk in sand
15	15	Yello, _:White, _ & UNB	23.8	Shell bed	25-Apr	3	yes	Failed 4/30/11, Raccoon
16	16	UNB & UNB	45	Open Beach	25-Apr	3	yes	Failed 5/21, UNK, soundside west of coastguard dock
17	17	G(J9) & UNB	37.29	Base of dune	26-Apr	3	yes	Failed 5/17/11, Mink
18	18	G(N3) & G(R7)	40.38	dune	26-Apr	2	yes	Failed 5/3/11, Raccoon tracks near nest
19	19	UNB & UNB	30.88	Shell bed	30-Apr	3	yes	Failed 5/13/11, UNK
20	20	G(AN) & UNB	32.7	Top of dune	30-Apr	3	yes	Failed 5/8/11, Mink tracks all around nest
21	21	UNB & G(UY)	23	Soundside sandbar	3-May	2	yes	Failed 5/29/11, UNK
22	22	UNB & UNB	47	Grass clumps	4-May	2	yes	day 35 on 6/28, day 45 on 7/8- last seen in closure with adult , 1 considered fledged
23	23	UNB & UNB	46.8	Behind Dune	4-May	2	yes	Failed 5/7/11, UNK Raccoon or Mink
24	13	G(J6) & UNB	34.47	In Vegetation	7-May	1	yes	Failed 5/31/11, UNK
25	10	G(JO) & G(M1)	35.57	Behind Dune	8-May	3	yes	Failed 5/26/11, UNK
26	3	G(AK) & G(AL)	23.45	Shell bed	8-May	3	yes	Failed 5/30/11, Ghost crab hole beside nest
27	8	G(P4) & G(J3)	25.17	Behind Dune	10-May	3	no	Failed 6/17/11, UNK

28	6	G(AP) & G(AR)	34.11	Base of dune	12-May	3	yes	G (65),G (NL) : 1 Not banded, 3 fledged day 41
29	12	UR-Red & UNB	35.91	Shell bed	12-May	3	yes	Failed 5/27/11, UNK
30	14	G(L2) & _,:S, _	39.74	On dune	12-May	3	yes	Failed 5/23/11, UNK
31	9	UNB & UNB	38.81	Base of dune	14-May	3	yes	Failed 5/24/11, UNK
32	2	G(R8) & UR-O,UL-O	38.18	Base of dune	16-May	3	yes	Failed 6/6/11, Mink tracks near nest, to and from nest
33	15	UNB & UL-Y,UR-W	23.5	Shell bed	16-May	3	yes	Failed 6/1/11, Raccoon tracks near nest
34	24	UNB & UNB	39.17	Base of dune	17-May	1	yes	Failed 5/23/11, UNK
35	11	O, S: B, - & UNB	27.12	On dune	17-May	2	yes	Failed 5/29/11, Raccoon
36	4	G(UP) & G(UR)	40.06	Base of dune	19-May	3	yes	Failed 5/25/11, UNK Mink tracks near nest
37	20	G(AN) & UNB	32.82	Base of dune	20-May	2	yes	Failed 6/8/11, UNK
38	17	G(J9) & UNB	37.87	Base of dune	30-May	2	yes	Failed 6/2/11, Mink tracks near nest
39	19	UNB & UNB	31.17	Behind Dune	30-May	3	yes	Failed 6/20/11, UNK
40	9	UNB & UNB	38.5	Open Beach	4-Jun	2	yes	Failed 6/7/11, Both Mink & Raccoon tracks near nest
41	14	G(L2) & LL-silver	39.71	Top of dune	4-Jun	2	yes	Failed 7/13/11, UNK
42	10	G(M1) & G(JO)	35.33	Base of dune	6-Jun	3	yes	Chicks: G(CEM) & 1 chick unbanded, 2 fledged day 38
43	4	G(UP) & G(UR)	40.33	Base of dune	6-Jun	1	yes	Failed 6/18/11, UNK mammalian predator
44	12	UR-Red & UNB	35.98	west of backroad	7-Jun	3	yes	Failed 6/18/11, UNK
45	3	G(AL) & G(AK)	23.4	Shell bed	9-Jun	2	yes	Failed 7/1/11, Raccoon tracks at nest,yolky sand in nest
46	11	UL-O, UR-B & UNB	26.98	On dune	13-Jun	1	yes	Failed 6/17/11, Abandoned
47	17	G(J9) & UNB	37.86	Shell bed	15-Jun	2	yes	Failed 7/28/11, UNK
48	15	UL-Y & UR-W & UNB	23.53	Sand flat	16-Jun	2	yes	Failed 7/9/11, UNK
49	2	G(R8) & UR-O,UL-O	38.22	Mid Beach	18-Jun	2	yes	Failed 6/25/11, UNK
50	9	UNB & UNB	38.8	Base of dune	20-Jun	1	yes	Failed 6/25/11, Large RV next to Yellow signs, UNK
51	21	G(UY) & UNB	23	Shell bed	23-Jun	2	yes	Failed 7/2/11, Raccoon

24 nesting pairs, 51 nests, 9 nests hatched, 12 chicks fledged

APPENDIX 1C AMERICAN OYSTERCATCHER NESTS- SHACKLEFORD BANKS-2011

Nest #	Pair #	Adult BANDS	MILE	LOCATION	FOUND	EGGS	POSTED	COMMENTS
1	1	UNB & UNB	53.26	Top of dune	25-Apr	3	No	Failed 5/19/11, UNK
2	2	UNB & UNB	50.39	Shell bed	29-Apr	3	No	Failed 5/19/11, UNK
3	3	UNB & UNB	49	Sand flat	6-May	2	No	Failed 5/12/11, Abandoned-human disturbance, 1 egg missing, footprints up to nest, old campsite 100 feet away, lots of footprints at campsite
4	4	UNB & UNB	49.9	Sand flat	12-May	3	No	Failed 5/19/11, UNK, yolky sand
5	5	G (E9) & UNB	49.5	Base of dune	12-May	2	No	Chick not banded, last saw chick at day 37 on soundside with adults
6	SCB 18	G(N3) & G(R7)	47	Soundside	19-May	2	Yes	chick lost by 6/23
7	4	UNB & UNB	50.15	Shell bed	25-May	1	No	Failed 6/9/11, UNK
8	6	UNB & UNB	51.05	Open beach	25-May	2	No	Failed 6/9/11, UNK
9	1	UNB & UNB	52.96	On dune	1-Jun	2	No	Failed 6/9/11, UNK

6 nesting pairs, 9 nests, 2 nests hatched, 1 chick fledged

