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

2003 SUMMARY REPORT

NATIONAL PARK SERVICE
CAPE LOOKOUT NATIONAL SEASHORE
131 CHARLES STREET
HARKERS ISLAND, NC 28531

2003 American Oystercatcher Monitoring-Cape Lookout National Seashore

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. The primary focus of this research has been to find ways to measure impacts of park visitors and improve nesting success.

Methods

Surveys of nesting habitat on Core Banks were conducted 2-5 times a week from early April to mid-July. Surveys of Shackleford Banks were made an average of less than once a week. When nests were located they were marked with a wood stake and given a number. The stakes were usually placed about 10 feet to the seaward side of the nest. 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. Locations of the nests were recorded using a GPS and the park's mile marker system. Information about the habitat type was also noted.

Nests were checked every few days to monitor the number of eggs present and hatch date. Chicks were monitored until they fledged or were lost.

Results

A park-wide census was conducted in May. Fifty-one nesting pairs were counted (Table 1). Counts were for pairs on or near the ocean beach and did not include marsh islands or soundside habitat.

Table 1. American Oystercatcher Census- May 2003

North Core Banks	19 pairs
Middle Core Banks	4 pairs
South Core Banks	21 pairs
Shackleford Banks	7 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

106 nests were found of which 17 hatched at least one egg. Eight chicks were known to survive to fledge (Table 2). The average clutch size was 2.3 eggs. Of the nests that failed, 31 were lost to predation, eight were flooded or buried in storms, one nest was lost due to human disturbance and three were abandoned. 46 nests failed due to unknown causes (Table 3). Raccoons were found to be the main predator but feral cats and ghost crabs also depredated nests and a peregrine falcon killed an adult bird. Individual nest data are found in Appendix 1.

Table 2. Oystercatcher Nesting by Island 2003

Island	# pairs	#Nests	# Nests Hatched	# Chicks Fledged
North Core Banks	19	37	7	2
South Core Banks	21	59	9	6
Shackleford Banks	7	10	1	Unknown

Table 3. Causes of Nest Failure

Island	Predation	Flooding/ Storms	Human Disturbance	Abandoned	Unknown
North Core Banks	18	4	1	1	6
South Core Banks	13	4	0	2	31
Shackleford Banks	0	0	0	0	9
CALO total	31 (35%)	8 (9%)	1 (1%)	3 (3%)	46 (52%)

Table 4. Summary of Oystercatcher Reproductive Success Data

Year	Island	#Nests	#Nests Hatched	#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%)	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
All		662	113 (17%)	45

Banding

Six adult birds were captured and banded. Three of the birds were recaptures that had been previously banded in the park. A green band and a USFWS metal band were placed on the lower left leg. This was used as a unique marker of birds that nest in the park. One or two color bands were used in various combinations on the lower right leg to identify individuals. Details on oystercatcher band combinations can be found at http://www4.ncsu.edu/unity/users/s/simons/www/AMOY% 20Banding.htm.

Four chicks were also captured and banded. Three of these chicks survived to fledge. Radio transmitters were used to track the movements of four chicks. A list of band combinations used is found in Appendix 2.

Discussion

Productivity continued to be poor with 47 pairs only known to fledge eight chicks. The hatch success of oystercatcher nests this year (16% of the nests had at least one egg hatch) was near the park's average (Table 4). Predators continued to be the biggest documented threat to nesting success, with flooding only a minor factor this season.

Direct human impacts on nesting success included a nest abandoned when a campsite was located too close to the nest. Several nests had off-road vehicles drive within a few feet of the eggs. Three oystercatcher chicks were run over by vehicles on South Core Banks July 4. Two of the chicks were only a day old but the third was a month old.

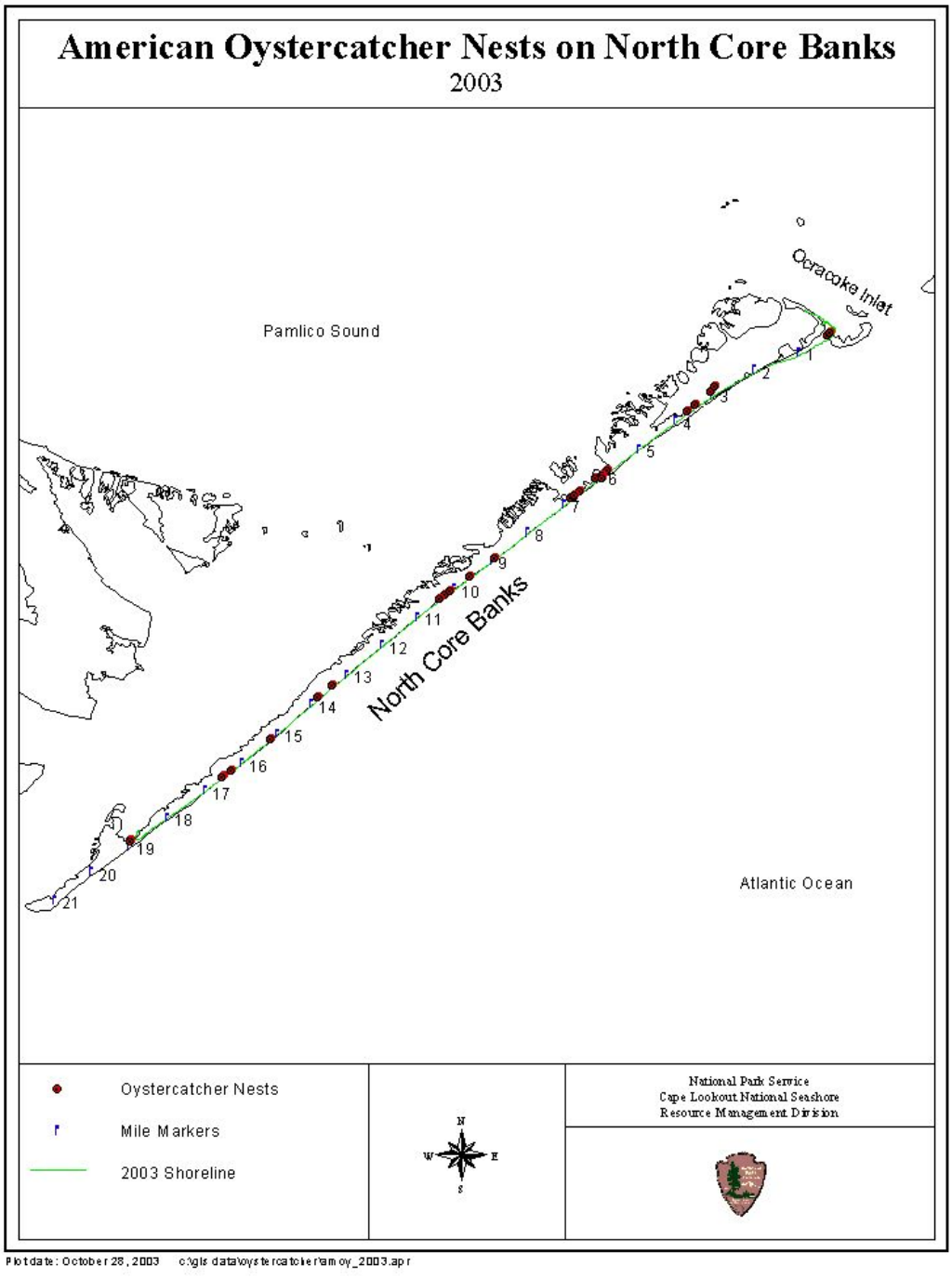
Measuring the indirect impact of disturbance continued to be a focus of field research. The presence of people and off-road vehicles in the proximity of incubating nests was recorded during nest checks. Some nests were also remotely filmed to document disturbance. The results of this disturbance study will be published in a Master's Thesis at a future date.

The monitoring at Cape Lookout National seashore seems to confirm that American Oystercatchers have inherently low reproductive productivity. Despite this, the number of nesting pairs in the park has remained stable over the past seven years.

Management Recommendations

Monitoring should continue to document factors limiting nesting success of American Oystercatchers at CALO. It is unknown what level of productivity is necessary to maintain the population in the park. Observations of banded birds could provide vital information on survival rates and site fidelity of nesting birds. Efforts should continue to limit the impacts of off-road vehicles on nests and chicks.

Figure 1.


American Oystercatcher Nests on North Core Banks
2003
Pamlico Sound
Ocracoke Inlet
North Core Banks
Atlantic Ocean
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
Oystercatcher Nests
Mile Markers
2003 Shoreline
N
W
E
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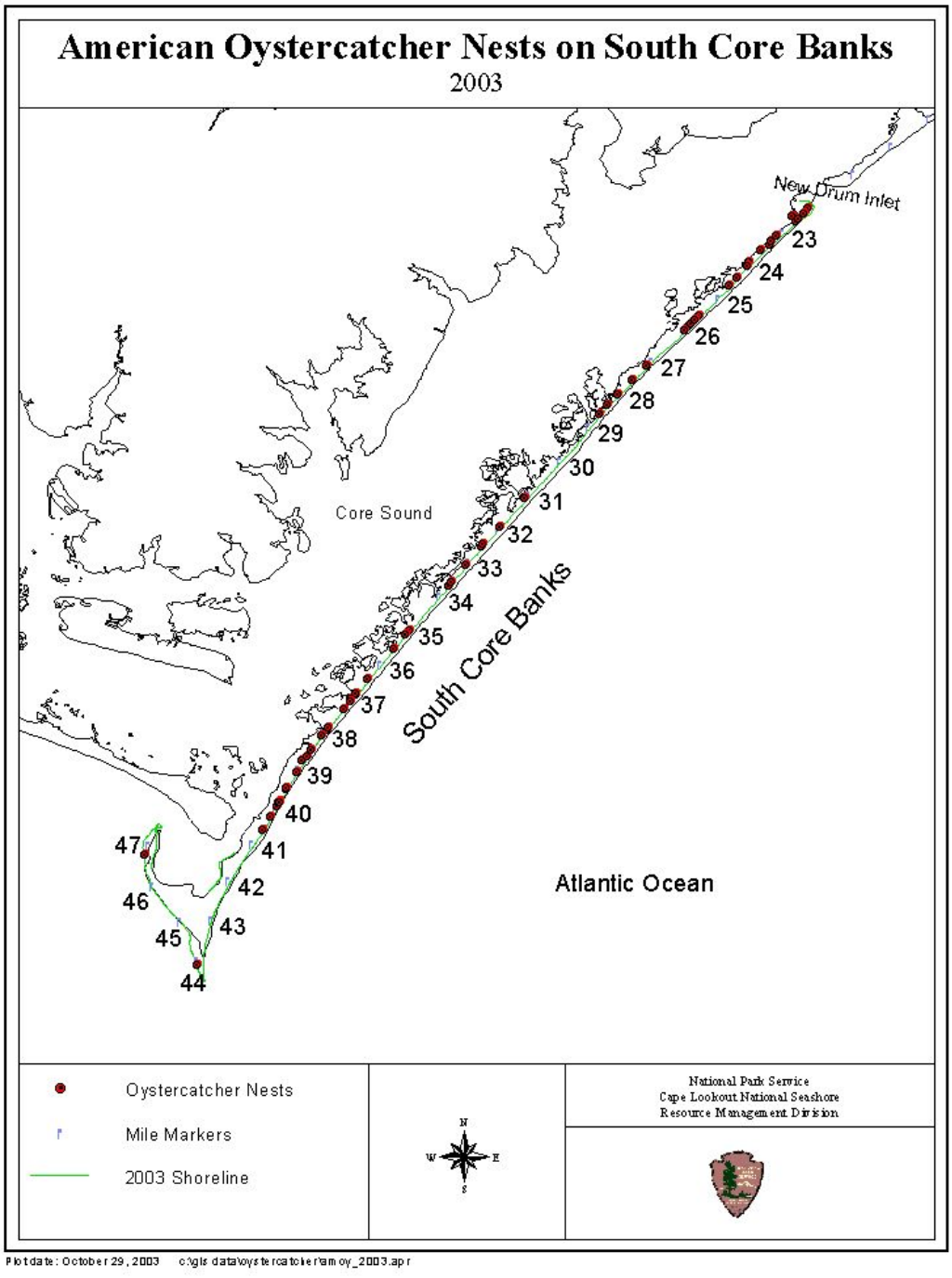
National Park Service
Cape Lookout National Seashore
Resource Management Division
Plot date: October 28, 2003 c:\gis data\oystercatcher\ramoy_2003.apr

Figure 2.


American Oystercatcher Nests on South Core Banks
2003
New Drum Inlet
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
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40
41
42
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44
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46
47
Core Sound
South Core Banks
Atlantic Ocean
Oystercatcher Nests
Mile Markers
2003 Shoreline
N
W
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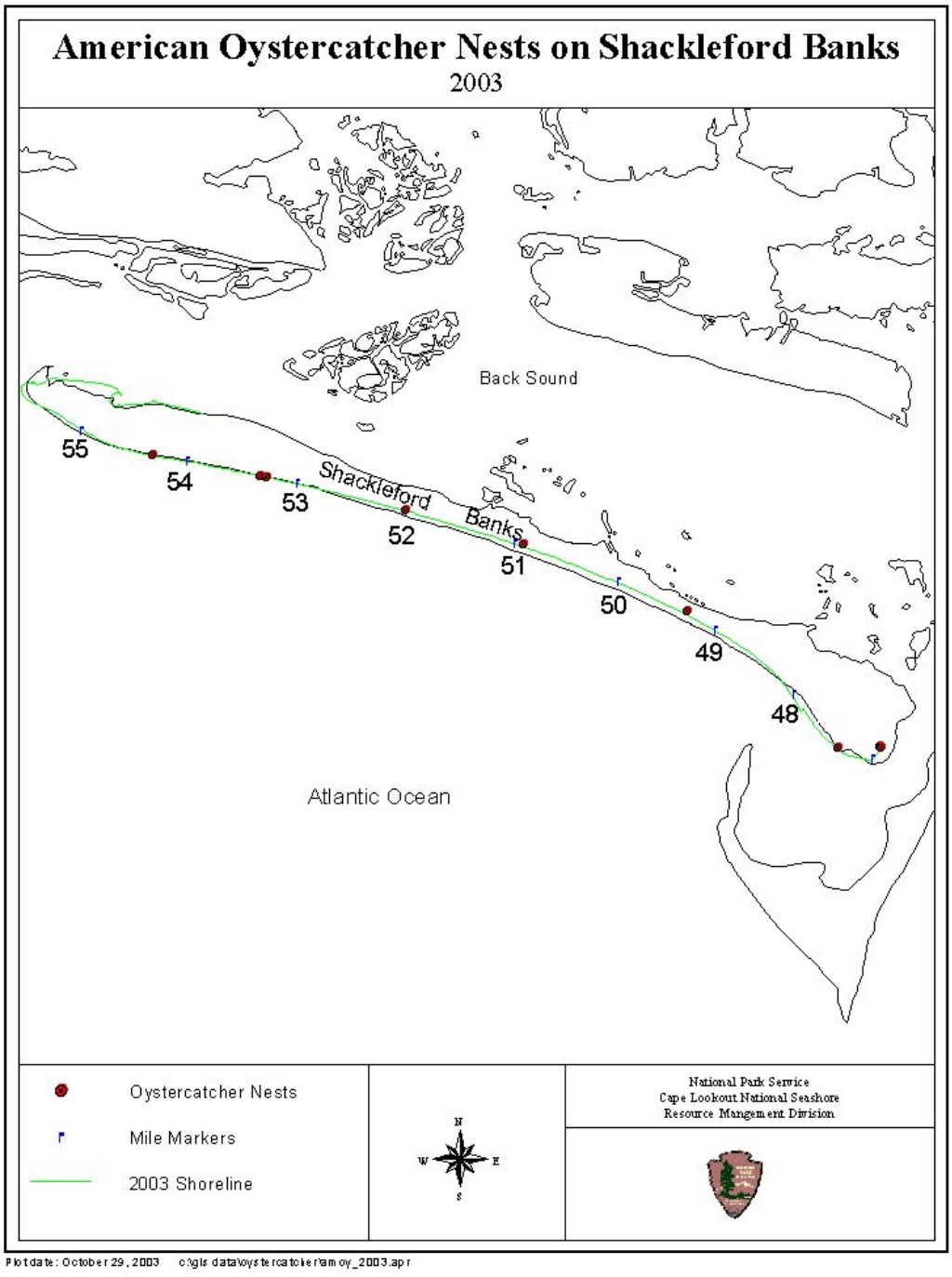
National Park Service
Cape Lookout National Seashore
Resource Management Division
Plot date: October 29, 2003 c:\gis data\oystercatcher\amoy_2003.apr

Figure 3.


American Oystercatcher Nests on Shackleford Banks
2003
Back Sound
Shackleford Banks
55
54
53
52
51
50
49
48
Atlantic Ocean
Oystercatcher Nests
Mile Markers
2003 Shoreline
N
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Cape Lookout National Seashore
Resource Mangement Division
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APPENDIX 1A AMERICAN OYSTERCATCHER NESTS- NORTH CORE BANKS-2003

Nest #	Location	Date Found	Date End	Latitude	Longitude	Eggs	Comments
1	Dune Blow out Mile 10.25	14-Apr	20-Apr	34.966850	-76.171450	3	Washed out by storm
2	Whalebone Flats Mile 6.0	14-Apr	20-Apr	35.009150	-76.115520	3	Washed out by storm
3	Dunes at mile 18.65	5-May	25-May	34.880808	-76.282197	3	Cat Predation
4	Dune Blow out Mile 10.3	7-May		34.965722	-76.173006	3	Hatched 5/29, Fledged 1 Chick 7/3
5	Dunes at mile 8.95	7-May	16-May	34.979844	-76.153925	2	Cat Predation
6	Whalebone Flats Mile 5.85	7-May	29-May	35.010694	-76.114119	2	Unknown cause of Failure
7	P. Flats mile 3.7	7-May	8-May	35.031589	-76.085781	3	Mammalian Predation
8	P. Flats mile 3.0	7-May		35.038464	-76.077683	3	Hatched 6/3, Fledged 1 chick 7/10
9	P. Flats mile 3.8	30-Apr	18-Jun			3	Hatched 5/30, Chicks lost by 6/18
10	K.J. Flats Mile 6.55	7-May	9-May	35.003219	-76.123650	3	Adult depredated by Peregrine falcon on 5/9
11	Dunes mile 13.3	7-May	16-May	34.930978	-76.215967	3	Mammalian Predation
12	Dunes mile 6.15	8-May	24-May	35.007906	-76.118067	3	Burried by sand in storm on 5/23
13	K.J. Flats Mile 6.6	9-May	26-May	35.001228	-76.125978	3	Mammalian Predation
14	Beach mile 16.2	9-May	16-May	34.903039	-76.249039	1	Raccoon Predation
15	Beach berm mile 14.9	16-May	17-May	34.916364	-76.232833	2	Mammalian Predation
16	Dune Blow out, mile 9.5	16-May	25-May	34.973250	-76.162569	3	Proximal Cause Unknown. Campers with in feet of nest scrape.
17	dunes @ mile 2.15	16-May	3-Jul	35.040133	-76.076153	2	Hatched 6/12, Chicks lost in storm on 7/3
18	Dunes @ Ocrakoke inlet	16-May	4-Jun	35.058125	-76.036783	2	one egg lost on 5/25, Nest predated by Raccoon
19	P. Flats Mile 2.8	20-May	29-May	35.040133	-76.076153	1	Raccoon Predation
20	P. Flats Mile 3.5	21-May	24-May	35.033611	-76.083167	2	Washed over in storm on 5/23
21	dunes, mile 9.0	21-May	3-Jun			3	predated by cat
22	Dune road, mile 10.1	22-May	17-Jun	34.968192	-76.169594	3	2 eggs taken by cat on 6/13, nest predated by cat on 6/17
23	P. Flats mile 3.5	24-May	16-Jun	35.033589	-76.083297	1	May be same nest as 20 only moved after wash over on 5/23. Hatched on 6/14, chick died on 6/16
24	Ocracoke inlet flats	25-May	31-May	35.059028	-76.035592	2	Predated by raccoon
25	Beach Berm mile 13.1	25-May	16-Jun	34.934947	-76.210906	2	Cause of failure is unknown
26	Beach mile 16.2	26-May	3-Jun	34.902625	-76.249619	2	Raccoon Predation
27	P. Flats	30-May	23-Jun	35.031614	-76.085853	3	2 Chicks hatched on 6/16, lost by 6/23
28	Beach at Mile 9.6	4-Jun	14-Jul			2	1 chick hatched on 7/15, Lost by 7/14
29	K.J. flats, Mile 6.85	10-Jun	12-Jun	35.000814	-76.127114	2	predated by cat

Nest #	Location	Date Found	Date End	Latitude	Longitude	Eggs	Comments
30	K.J. Flats Mile 6.5	10-Jun	16-Jun	35.003314	-76.123600	2	Raccoon Predation
31	Whalebone flats mile 5.95	10-Jun	15-Jun	35.009044	-76.116092	2	Unknown cause of Failure
32	Old Drum flats	10-Jun	10-Jun	34.880133	-76.282067	1	Egg shell found next to scrape
33	Ocracoke inlet flats	12-Jun	18-Jun			2	Lost to Ghost crab predation
34	Beach at mile 16.0	14-Jun	26-Jun	34.904883	-76.246650	2	lost to raccoon predation
35	beach at mile 8.9	14-Jun	23-Jun	34.979681	-76.153669	3	Unknown cause of Failure
36	K.J. Flats Mile 6.6	23-Jun	14-Jul	35.001806	-76.125456	3	Unknown predation
37	Flats at mile 6.3	24-Jun	2-Jul	35.007906	-76.116092	1	Raccoon predation

Total = 37 nests
7 nests hatched and 2 chicks fledged from 2 different nests
Causes of failure:
- 4 lost to Weather
- 17 lost to Mammalian predation
  - 8 lost to raccoons
  - 5 lost to Cats
  - 4 lost to unidentified mammals
- 1 lost to ghost crab predation
- 1 nest abandonded (after Peregrine Falcon predated on adult)
- 1 Nest lost due to campers
- 6 lost to unknown causes

APPENDIX 1B AMERICAN OYSTERCATCHER NESTS- SOUTH CORE BANKS-2003

#	MILE	LOCATION	FOUND	EGGS	POSTED	Latitude	Longitude	COMMENTS
1	39.8	Beach berm	15-Apr	3	Y	34.64290	-76.50736	Lost 4/18
2	39.0	Beach berm	15-Apr	3	Y	34.65311	-76.50151	Washed away ~4/19
3	36.8	Beach berm	15-Apr	3	N	34.67950	-76.48108	Lost 4/21
4	25.8	Flats between dunes	15-Apr	2	N	34.80763	-76.36534	Washed away ~4/19
5	34.9	Beach berm	15-Apr	1	Y	34.70192	-76.46242	Lost to cat predation 4/16
6	46.8	Flats in closure	16-Apr	3	N	34.62422	-76.55393	Lost to raccoon predation? 4/22
7	38.1	Beach berm	16-Apr	1	N	34.66762	-76.49113	Washed away ~4/19
8	37.0	Dunes east of backroad	16-Apr	3	N	34.67845	-76.48266	Lost to predation 4/25
9	38.7	Dunes east of backroad	16-Apr	3	N	34.65712	-76.49949	Lost 5/12
10	27.5	Flats between dunes	17-Apr	3	N	34.78889	-76.38502	Lost to cat predation 5/7
11	23.9	Flats in vehicle closure	17-Apr	3	N	34.82961	-76.34440	Washed away ~4/19
12	38.0	Beach berm	21-Apr	4	Y	34.66581	-76.49273	Lost 5/12
13	44.0	Flats in closure	23-Apr	3	N	34.58622	-76.53591	Hatched 5/20. Chicks lost by 5/26
14	23.3	Flats in closure	28-Apr	3	N	34.83581	-76.33755	Hatched 5/26, chicks lost in first week
15	25.9	Flats between dunes	28-Apr	3	N	34.80613	-76.36683	Hatched 5/26, chicks lost in first week
16	22.3	Flats in closure	30-Apr	3	N	34.84713	-76.32515	Lost by 5/20
17	24.0	Dunes east of backroad	30-Apr	1	N	34.82833	-76.34526	Lost to raccoon predation 5/5
18	39.8	Beach berm	30-Apr	3	Y	34.64227	-76.50763	Lost to predation by 5/26
19	40.5	Top of primary dune	30-Apr	3	N	34.63303	-76.51341	Hatched, fledged 1 chick, chick banded
20	36.4	Flats between dunes	5-May	2	N	34.68518	-76.47679	Lost, possibly to crow predation
21	32.5	Flats between dunes	5-May	2	N	34.73100	-76.43754	Lost, possibly to crow predation
22	22.4	Flats in closure	5-May	3	N	34.84580	-76.32983	Lost by 5/12
23	23.6	Top of dune in closure	5-May	3	N	34.83358	-76.34067	Lost to raccoon predation 5/7
24	28.3	Flats between dunes	5-May	1	N	34.78037	-76.39350	Lost by 5/12
25	31.9	Flats between dunes	7-May	3	N	34.73794	-76.43101	Lost
26	28.0	Flats between dunes	9-May	2	N	34.78385	-76.39016	Lost by 5/20
27	35.5	Beach berm	9-May	1	Y	34.69568	-76.46763	Lost
28	22.5	Flats in closure	12-May	3	N	34.84393	-76.32838	Lost by 5/20
29	37.3	Beach berm	13-May	3	N	34.67488	-76.48512	Lost
30	24.6	Flats between dunes	15-May	3	N	34.82142	-76.35160	Lost by 5/26
31	25.5	Top of primary dune	15-May	3	N	34.81096	-76.36170	Buried and abandoned by 6/16

#	MILE	LOCATION	FOUND	EGGS	POSTED	Latitude	Longitude	COMMENTS
32	40.2	Beach berm	15-May	3	Y	34.63755	-76.51046	Lost by 5/19
33	33.7	Behind dune	15-May	2	N	34.71765	-76.44890	Lost to gull predation 5/26
34	28.6	Beach berm	20-May	1	Y	34.77681	-76.39647	Lost by 6/2
35	33.0	Beach berm	21-May	2	N	34.72486	-76.44277	Lost by 5/26
36	36.9	In dunes	21-May	1	N	34.68010	-76.48110	Lost by 6/2
37	35.1	Beach berm	26-May	2	Y	34.70050	-76.46373	Lost by 6/2
38	39.5	Beach berm	26-May	1	Y	34.64709	-76.50515	Lost by 6/2
39	22.5	Flats in closure	2-Jun	3	N	34.84475	-76.32732	Lost by 6/11
40	31.1	Flats between dunes	2-Jun	2	N	34.74786	-76.42255	Lost 6/11
41	38.6	Beach berm	2-Jun	2	Y	34.65857	-76.49784	Lost
42	37.0	Beach berm	2-Jun	2	Y	34.67766	-76.48276	Lost by 6/16
43	37.7	Beach berm	6-Jun	2	Y	34.66832	-76.49061	Lost 6/18
44	33.7	In dunes	5-Jun	2	N			Lost to raccoon predation 6/11
45	22.2	Flats in closure	5-Jun	2	N	34.84812	-76.32437	Lost by 6/11
46	24.3	Beach berm	6-Jun	1	Y	34.82425	-76.34863	Abandoned 7/14
47	39.8	Beach berm	6-Jun	2	Y	34.64128	-76.50814	Lost 6/11
48	25.7	Flats between dunes	11-Jun	3	N	34.80856	-76.36452	Lost to predation 6/17
49	39.4	Beach berm	11-Jun	2	N	34.64752	-76.50488	Lost to predation?
50	28.0	Flats between dunes	13-Jun	1	N	34.78379	-76.39002	Lost 6/17
51	25.6	Flats between dunes	13-Jun	2	N	34.80987	-76.36309	Lost 6/18
52	32.5	In dunes	13-Jun	1	N	34.73216	-76.43668	Lost by 6/17
53	27.1	Beach berm	17-Jun	1	Y	34.79367	-76.37990	Lost 7/7
54	23.2	Dunes in closure	13-Jun	2	N	34.83688	-76.33696	Lost by 6/17
55	33.5	Base of primary dune	20-Jun	2	N	34.71872	-76.44787	Hatched 7/16, 1 chick fledged 9/3
56	38.4	At duneline	20-Jun	2	N	34.66081	-76.49649	Hatched 7/15, 1 chick fledged 8/22
57	39.8	Beach berm	12-Jun	2	Y	34.64237	-76.50754	Hatched 7/3,chicks run over by ORV 7/4
58	22.3	Flats in closure	27-Jun	2	N	34.84639	-76.32536	Hatched 7/18, 2 chicks fledged 8/27
59	23.1	Flats between dunes	30-Jun	2	N	34.83858	-76.33523	Hatched ~7/25, 1 chick fledged 9/1

59 nests, 9 nests hatched, 6 chicks fledged from 5 different nests
4 nests washed away, 13 nests lost to predators, 2 nests abandonded
31 nests lost to unknown causes

APPENDIX 1C AMERICAN OYSTERCATCHER NESTS- SHACKLEFORD BANKS-2003

#	MILE	LOCATION	FOUND	EGGS	POSTED	Latitude	Longitude	COMMENTS
1	47.0	Top of dune	22-Apr	3	N	34.63213	-76.52875	
2	53.2	Beach Berm	13-May	3	N	34.67473	-76.62593	
3	52.0	Flats between dunes	13-May	3	N	34.66964	-76.60400	3 chicks 5/21
4	47.0	Top of dune	13-May	3	N	34.63213	-76.52875	Soundside of Barden Inlet
5	51.0	Flats between dunes	21-May	2	N	34.66424	-76.58525	
6	54.4	Beach Berm	21-May	1	N	34.67828	-76.64402	Lost by 6/5
7	47.3	Top of dune	12-Jun	2	N	34.63189	-76.53541	Lost by 6/19
8	47.0	Top of dune	12-Jun	1	N	34.63195	-76.52854	Soundside of Barden Inlet
9	49.3	Flats between dunes	12-Jun	2	N	34.65356	-76.55915	Lost by 6/26
10	53.3	Beach Berm	19-Jun	2	N	34.67492	-76.62688	Lost by 6/26

APPENDIX 2 BAND COMBINATIONS USED ON AMERICAN OYSTERCATCHERS IN 2003

USFWS Band	Left leg (UL;LL/LL)	Right Leg (UR;LR/LR)	Date	Location	Nest #	Age	Comments
80560047	B,GF/usfws	Y,G/R	6/8/2000	Mile 8.2		Chick	Recaptured as an adult at Mile 8.2 4/5/03
80560027	W,G("B")/usfws	W,-/-	5/13/1999	Mile 6.7	21	Adult	Recaptured at mile 6.7 on NCB on 5/30/03
805-60055	G("B");G/usfws	-;-/W	5/31/2001	Mile 6.6	34	Adult	Recaptured at mile 6.5 on NCB on 5/30/03
975-85207	Y;G(“B”)/usfws	W;-/-	6/5/03	Mile 24.1		Adult	
975-85208	R;G(“B”)/usfws	Y;-/-	6/6/03	Mile 39.7		Adult	
975-85209	B;G(“B”)/usfws	R;-/O	6/6/03	Mile 44		Adult	
975-85291	usfws;G(“A”)	W;O/O	6/18/03	Mile 3.2	8	Chick	Transmitter attached to usfws band
975-85210	G(“H”);-/G(“A”)	W;O/usfws	6/18/03	Mile 3.2	8	Chick	Transmitter attached to G("H") band; fledged
975-85293	Usfws;-/G(“A”)	-;G/W	6/23/03	Mile 10.4	4	Chick	Transmitter attaced to usfws band; fledged
975-85211	-;-G(“A”)	R;R/R/usfws	6/25/03	Mile 40.5	19	Chick	Transmitter attached but later removed; Fledged

GF= green flag, G= green, Y= yellow, O= orange, R= red, B= blue, W= white, Usfws= numbered steel Fish and Wildlife Service band