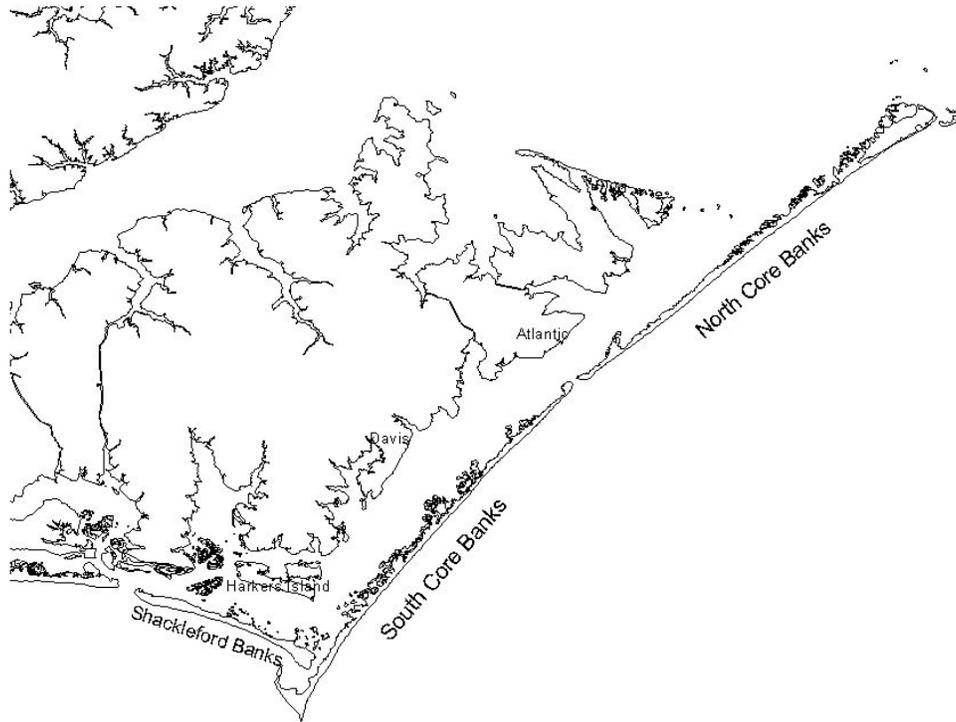


RED KNOT (*Calidris canutus*) MONITORING AT  
CAPE LOOKOUT NATIONAL SEASHORE

2006 SUMMARY REPORT



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

## **Introduction**

Serious declines in the population of red knots (*Calidrus canutus*) led to several petitions to the U.S. Fish and Wildlife Service for protection under the Endangered Species Act. In September 2006 the red knot was designated as a candidate for Endangered Species Act protection (Federal Register, 2006). Red knots use the Outer Banks of North Carolina as a stopover site in spring and fall migration. While not as important as some other coastal sites, the Outer Banks may still contribute to the survival of this species.

Previous monitoring of red knots at Cape Lookout National Seashore (CALO) was limited to surveys as part of a broader shorebird study in 1992 and 1993. North Core Banks had greater numbers of red knots than other areas in the Outer Banks (Dinsmore and Collazo, 1995) but surveys in that study did not include any of the areas south of New Drum Inlet.

This report contains a summary of monitoring results for 2006 and comparisons to results from the earlier study and discussions of long-term monitoring of red knots at CALO.

## **Methods**

Surveys for red knots were made of the entire ocean beach and inlet areas on North Core Banks, South Core Banks and Shackleford Banks beginning in mid March. The area between Old Drum Inlet and Ophelia Inlet was not monitored (Figure 1).

Our survey frequency and timing followed the International Shorebird Census guidelines for spring and fall. Counts were done near the 5<sup>th</sup>, 15<sup>th</sup>, and 25<sup>th</sup> of the month from March 15<sup>th</sup> to June 15<sup>th</sup> and from July 15<sup>th</sup> to October 15<sup>th</sup>.

Surveys were conducted by the park biologist or SCA Interns with experience identifying shorebirds. Surveys were at different times of day, tides and weather conditions. Monitors recorded the number of red knots observed, the mile location, the latitude and longitude, the amount of human disturbance, tide level and the accuracy of the count (See Appendix 1).

Some counts on South Core Banks and Shackleford Banks were missed because of staffing problems. Results were entered in a Microsoft Access database and mapped using ArcView 3.2.

## **Results**

Most of the red knots counted during our surveys were found on North Core Banks with an average of 95 birds found. South Core Banks averaged 12 birds and Shackleford Banks only nine. The peak numbers were during spring migrations with almost 700 birds counted in the May 5 census. There was also a small peak in late August when fall

migrants moved through (Figure 2). No banded red knots were observed during our surveys.

Red knots were distributed the entire length of North Core Banks, with the greatest concentration of birds on the north end of the island (Figure3). On South Core Banks most birds were seen on the north end of the island. On Shackleford all the birds counted were found near the east end of the island.

### **Discussion**

Our monitoring confirmed the importance of North Core Banks as a stopover site for red knots, particularly during spring migration. The relative abundance of red knots on North Core Banks during spring migration was 21 birds/kilometer compared to 34 birds/kilometer in 1992-1993. The island likely has the greatest number of knots in the Outer Banks. Although the Outer Banks may not be as important as some other sites in the region, the area still provides habitat that may be important for the recovery and long-term survival of red knots.

The methods used in this study would be easy to replicate with just a few trained monitors. Red knot surveys should be integrated into the park's long-term monitoring program.

### **Literature Cited**

Dinsmore, S.J. and J.A. Collazo. 1995. Seasonal numbers, distribution and population dynamics of shorebirds on the outer banks of North Carolina. In *Factors Affecting Reproduction and Migration of Waterbirds on the North Carolina Barrier Islands*. Final Report to the National Park Service.

**Figure 1. Areas Surveyed for Red Knots**

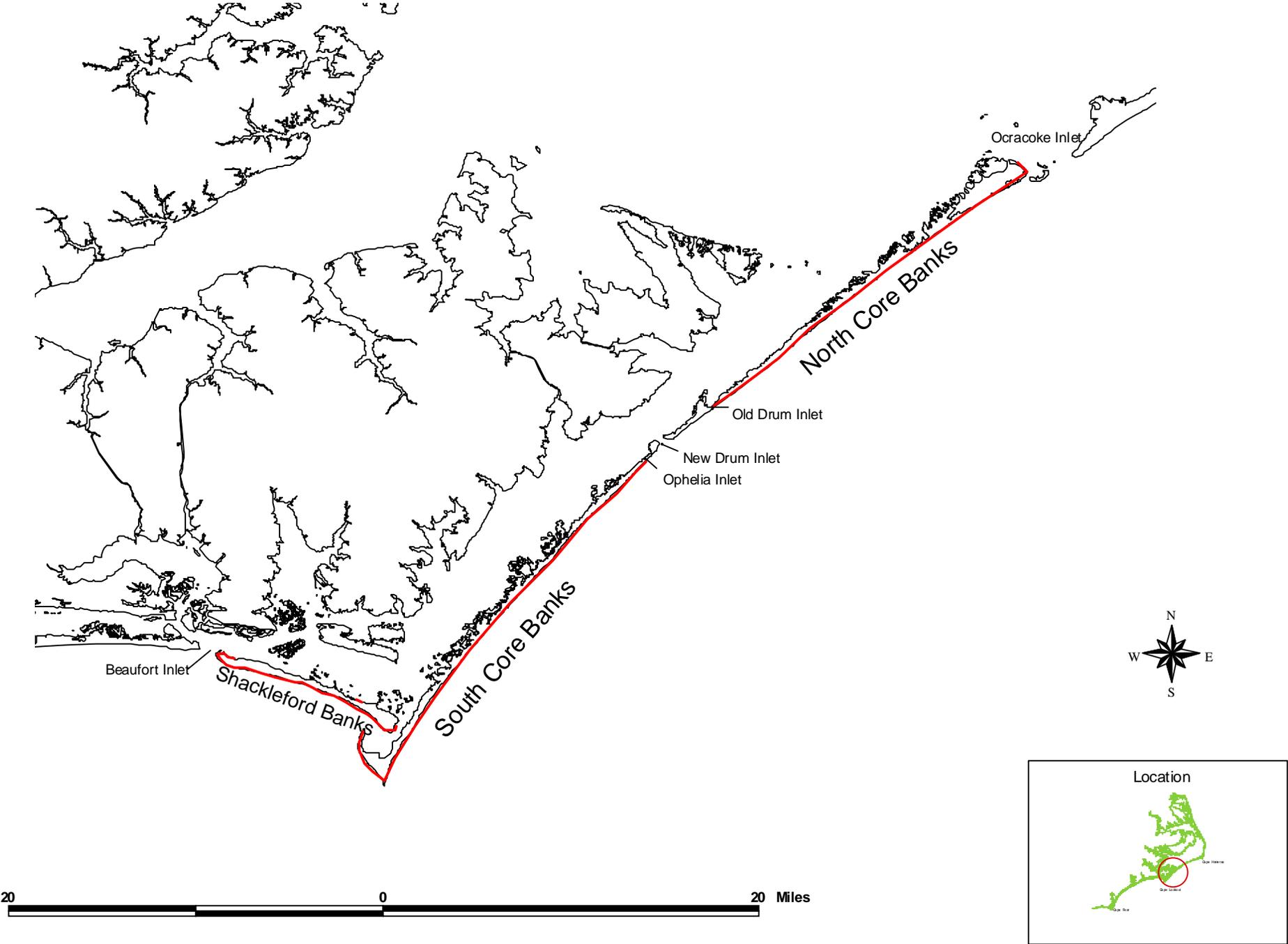
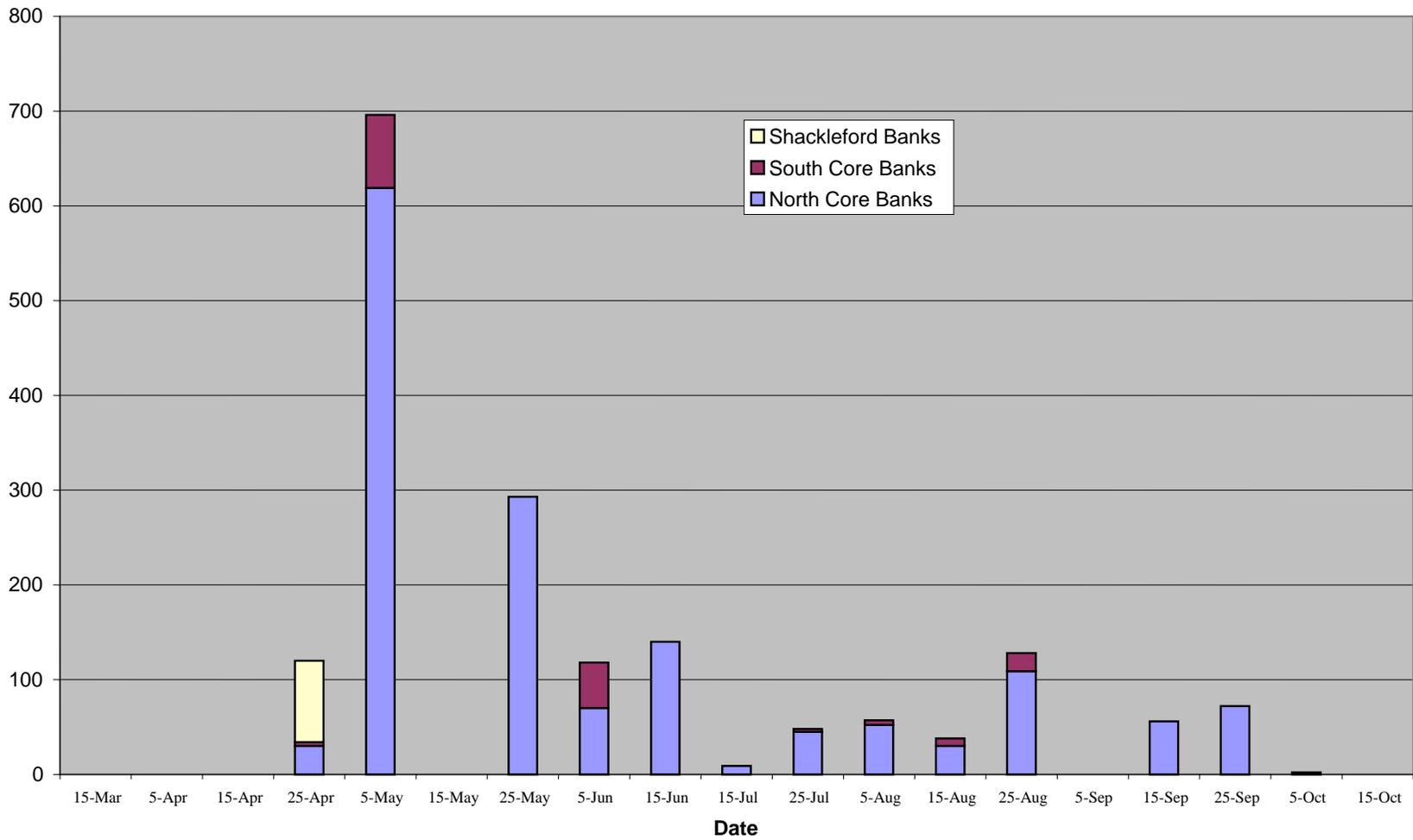
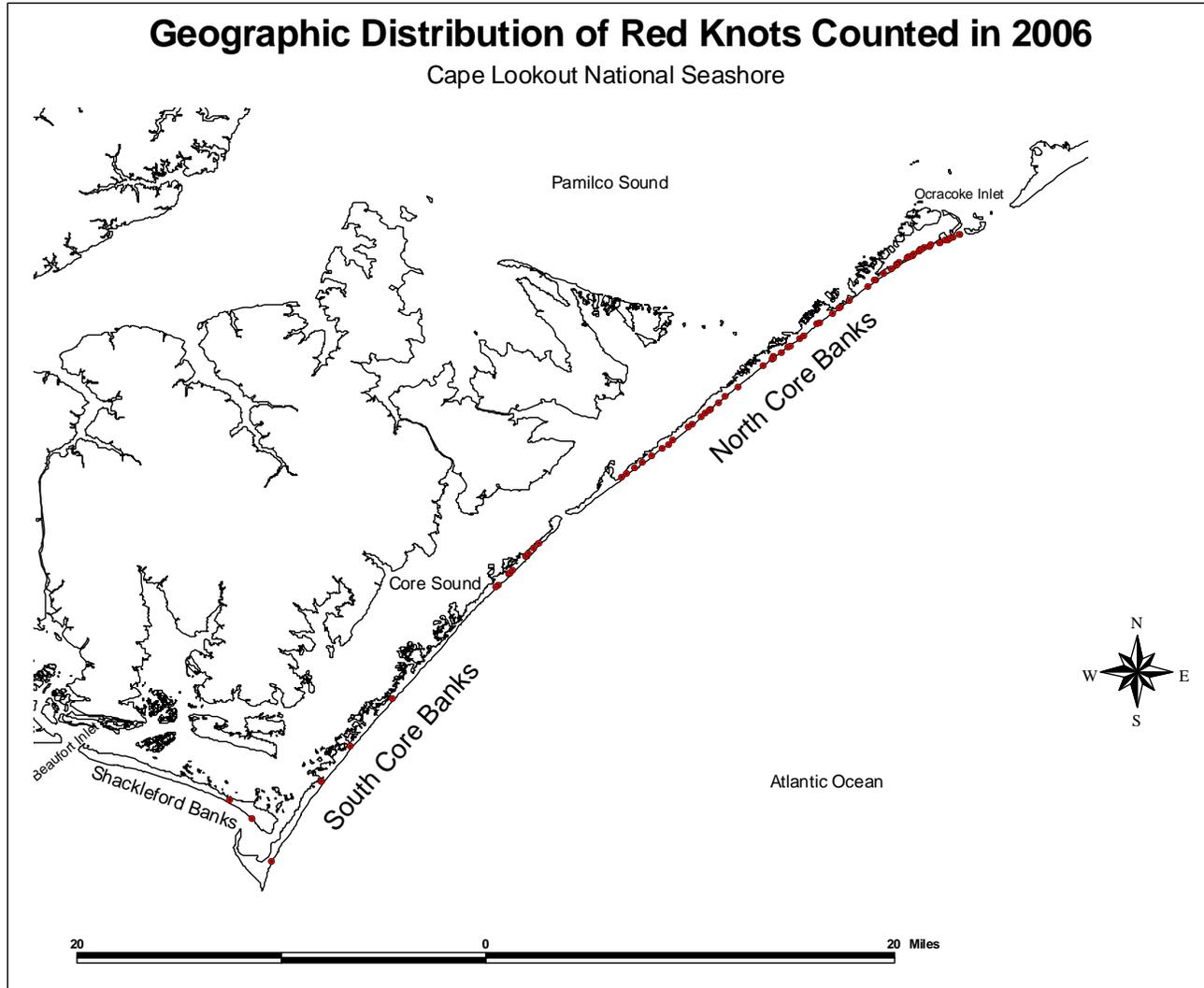


Figure 2. Number of Red Knots Counted at Cape Lookout National Seashore in 2006



# Geographic Distribution of Red Knots Counted in 2006

Cape Lookout National Seashore





Appendix 2. Red Knot Survey Data

Month	Day	Island	#REKN	Mile	Latitude	Longitude	Disturbance	Tide	Accuracy
3	14	SB	0				A	5	
3	15	SCB	0				A	5	
3	17	NCB	0				A	3	
4	3	SCB	0				A	4	
4	14	SCB	0				B	5	
4	17	NCB	0				B	5	
4	18	SB	0				A	2	
4	24	NCB	11	16.0	34.90702	-76.24379	A	7	*
4	24	NCB	7	10.4	34.96496	-76.17302	A	7	*
4	24	NCB	12	9.6	34.97306	-76.16220	A	7	*
4	25	SCB	4	35.9	34.69057	-76.47211	A	7	*
4	26	SB	7	49.2	34.65235	-76.55822	A	7	*
4	26	SB	79	48.0	34.63940	-76.54226	A	7	*
5	3	SCB	14	42.4	34.60927	-76.52793	A	4	*
5	3	SCB	11	39.7	34.66570	-76.49294	A	4	*
5	3	SCB	47	38.0	34.66570	-76.49294	A	4	*
5	3	SCB	5	33.1	34.72419	-76.44304	A	2	*
5	5	NCB	9	14.2	34.92689	-76.22041	A	6	*
5	5	NCB	5	13.9	34.92935	-76.21725	A	6	*
5	5	NCB	22	13.0	34.93869	-76.20621	A	6	*
5	5	NCB	11	10.3	34.96603	-76.17210	A	6	*
5	5	NCB	17	3.0	35.03739	-76.07660	B	6	*
5	5	NCB	35	2.4	35.04223	-76.06820	A	6	*
5	5	NCB	176	2.2	35.04376	-76.06539	C	6	**
5	5	NCB	317	1.5	35.04771	-76.05447	C	6	**
5	5	NCB	27	1.3	35.04877	-76.05045	A	6	*
5	27	NCB	62	1.2	35.05068	-76.04468	D	5	*
5	27	NCB	24	1.3	35.04875	-76.04885	B	5	*
5	27	NCB	53	1.6	35.04728	-76.05425	B	5	*
5	27	NCB	25	3.5	35.03305	-76.08265	B	5	*
5	27	NCB	47	4.8	35.02044	-76.09983	C	5	*
5	27	NCB	11	13.5	34.93362	-76.21168	B	5	*
5	27	NCB	29	15.0	34.91827	-76.22977	B	5	*
5	27	NCB	42	17.7	34.89155	-76.26500	B	5	*
6	5	NCB	27	17.2	34.89596	-76.25827	B	2	*
6	5	NCB	14	16.3	34.90467	-76.24659	B	2	*
6	5	NCB	9	14.4	34.92411	-76.22305	A	2	*
6	5	NCB	6	8.9	34.97931	-76.15365	A	2	*
6	5	NCB	8	5.2	35.01606	-76.10559	B	2	*
6	5	NCB	6	2.5	35.04102	-76.06960	A	2	*
6	6	SCB	16	26.0	34.80530	-76.36753	A	6	*
6	6	SCB	25	25.4	34.81230	-76.36033	A	6	*
6	6	SCB	7	24.2	34.82548	-76.34781	A	6	*
6	15	NCB	43	16.6	34.90128	-76.25111	B	7	*
6	15	NCB	11	6.2	35.00671	-76.11809	B	7	*
6	15	NCB	3	3.6	35.03156	-76.08474	A	7	*

Month	Day	Island	#REKN	Mile	Latitude	Longitude	Disturbance	Tide	Accuracy
6	15	NCB	7	2.0	35.04484	-76.06207	A	7	*
6	15	NCB	76	0.7	35.05259	-76.04056	A	7	*
7	14	SCB	0				A	5	
7	15	NCB	4	4.7			A	6	*
7	15	NCB	2	6.7	35.00161	-76.12509	A	4	*
7	15	NCB	3	7.9	34.98934	-76.14123	A	4	*
7	25	SCB	3	24.3	34.82519	-76.34788	A	5	*
7	27	SB	0				A	3	
7	29	NCB	8	14	34.92817	-76.21824	B	4	**
7	29	NCB	24	10.3	34.96561	-76.17199	A	4	*
7	29	NCB	13	0.6	35.05250	-76.04039	B	4	*
8	3	SB	0				A	4	
8	4	SCB	5	23.8			A	4	*
8	5	NCB	3	2.38	35.04235	-76.06744	A	7	*
8	5	NCB	3	17.2			B	7	*
8	7	NCB	8	1.2	35.04969	-76.04647	A	3	*
8	7	NCB	2	3.8	35.03170	-76.08454	A	3	*
8	7	NCB	6	7.82	34.99057	-76.13962	A	3	*
8	7	NCB	6	9.4	34.97428	-76.16057	A	3	*
8	7	NCB	9	10.9			A	3	*
8	7	NCB	13	18.8	34.88128	-76.27977	D	3	*
8	7	NCB	8	18.5	34.88380	-76.27650	D	3	*
8	15	SCB	3	24.3	34.81349	-76.35915	A	2	*
8	15	SCB	2	24.0	34.82730	-76.34578	A	2	*
8	15	SCB	3	23.4	34.83426	-76.33869	A	2	*
8	16	NCB	4	3.2	35.03842	-76.07412	A	8	*
8	16	NCB	9	4.3	35.02462	-76.09387	A	8	*
8	16	NCB	17	7.1	34.99734	-76.13040	A	8	*
8	17	SB	0					6	
8	24	SB	0				A	3	
8	25	SCB	9	23.6	34.83079	-76.34207	A	3	*
8	25	SCB	5	25.1	34.81543	-76.35698	A	3	*
8	25	SCB	5	26.2	34.80303	-76.36959	A	3	*
8	25	NCB	9	2.14	35.04529	-76.06085	A	3	*
8	25	NCB	47	3.3	35.03930	-76.07272	A	3	**
8	25	NCB	23	3.4			B	3	*
8	25	NCB	4	3.9	35.02894	-76.08828	A	3	*
8	25	NCB	10	8.7	34.98109	-76.15138	A	3	*
8	25	NCB	6	10.1	34.96941	-76.16693	A	3	*
8	25	NCB	7	11.1	34.95988	-76.17963	A	3	*
8	25	NCB	3	14.9	34.91625	-76.23221	A	3	*
9	15	NCB	11	3.1	35.03632	-76.07784	B	6	*
9	15	NCB	27	4.8	35.01991	-76.10064	A	6	*
9	15	NCB	18	9.9			A	6	*
9	15	SCB	0				A	4	*
9	25	NCB	37	2.9	35.03736	-76.07603	B	7	*
9	25	NCB	11	6.8	35.00087	-76.12588	B	7	*

Month	Day	Island	#REKN	Mile	Latitude	Longitude	Disturbance	Tide	Accuracy
9	25	NCB	24	12.4	34.94543	-76.19752	B	7	*
9	28	SB	0				A	4	
10	5	SB	0				A	5	
10	6	SCB	0					5	
10	6	NCB	2	8.8	34.88739	-76.27072	B	7	*
10	13	NCB	0					4	
10	16	SCB	0					4	
10	17	SB	0				A	6	