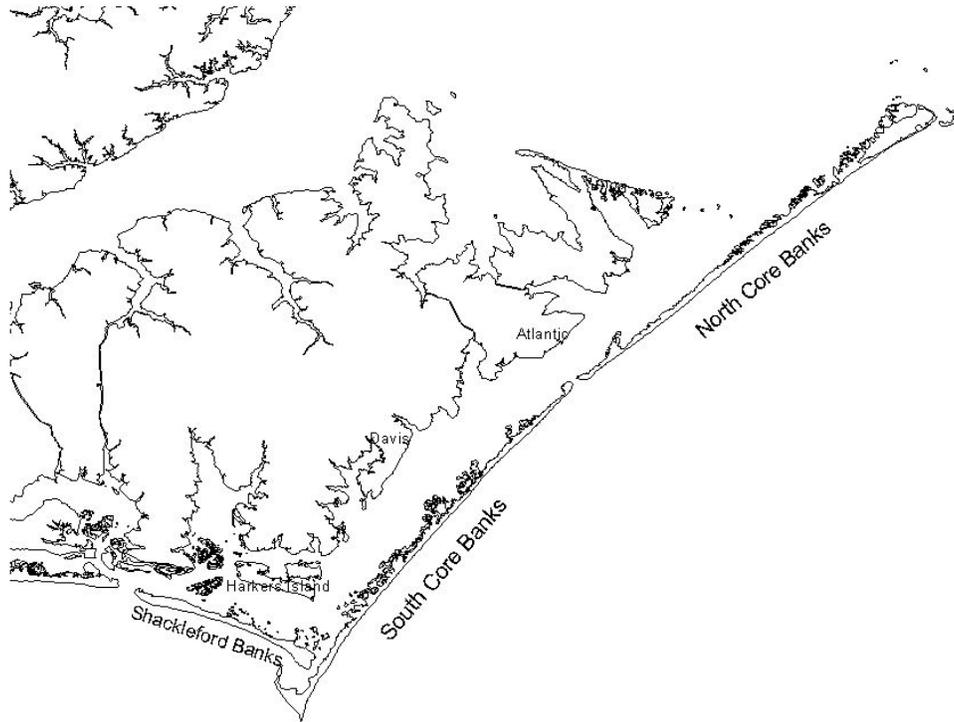


RED KNOT (*Calidris canutus*) MONITORING AT
CAPE LOOKOUT NATIONAL SEASHORE

2007 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 2007 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 5th, 15th, and 25th of the month from March 15th to June 15th and from July 15th to October 15th.

Surveys were conducted by the park biologist or biological science technicians 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).

The early spring counts were missed due to staff turn over. Counts began on May 15th, 2007. The June 15th count was missed. Results were entered in a Microsoft Access database and mapped using ArcMap 9.2.

Results

Most of the red knots counted during our surveys were found on North Core Banks with an average of 103 birds found. South Core Banks averaged 66 birds and Shackleford Banks only 18. The peak numbers were during spring migrations with 1396 birds counted in the May 15 census. There was also a small peak in August and September when fall migrants moved through (Figure 2). No banded red knots were observed

during our surveys. Red knots were distributed over the entire length of the seashore (Figure3).

Discussion

Our monitoring confirmed the importance of the seashore as a stopover site for red knots, particularly during spring migration. The relative abundance of red knots on North Core Banks during peak spring migration was 24 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 continue to 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

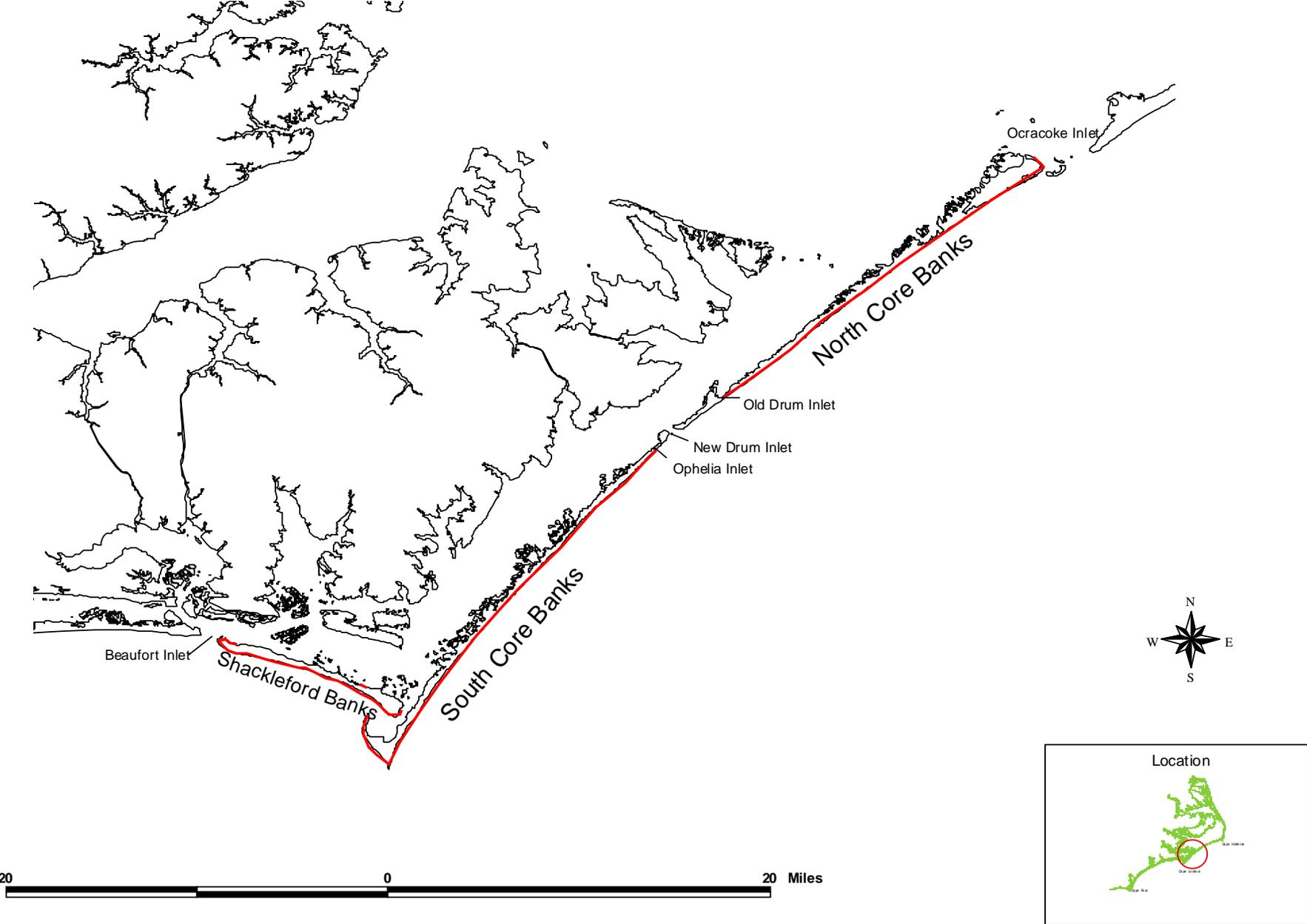


Figure 2. Number of Red Knots Counted at Cape Lookout National Seashore in 2007

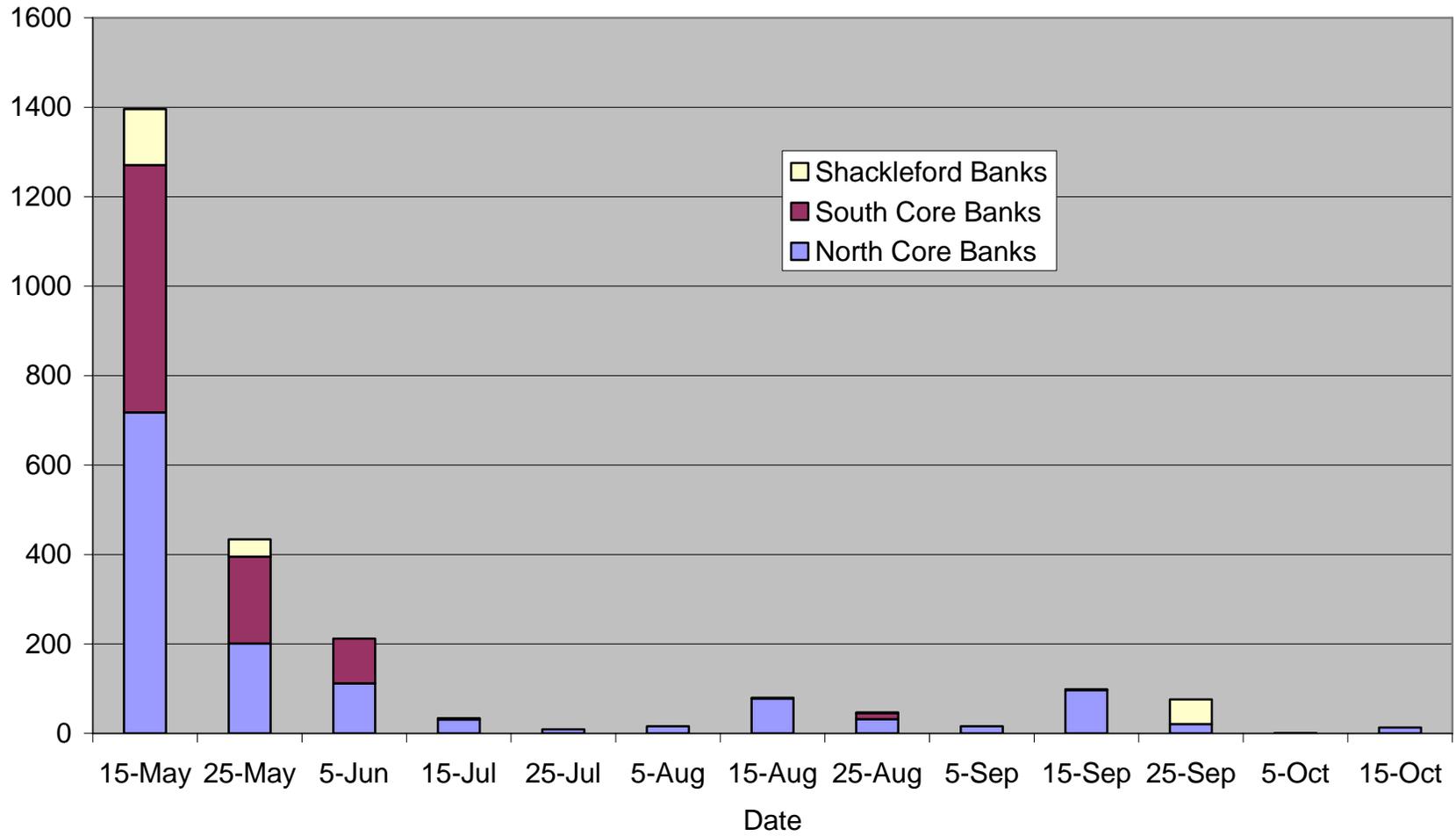
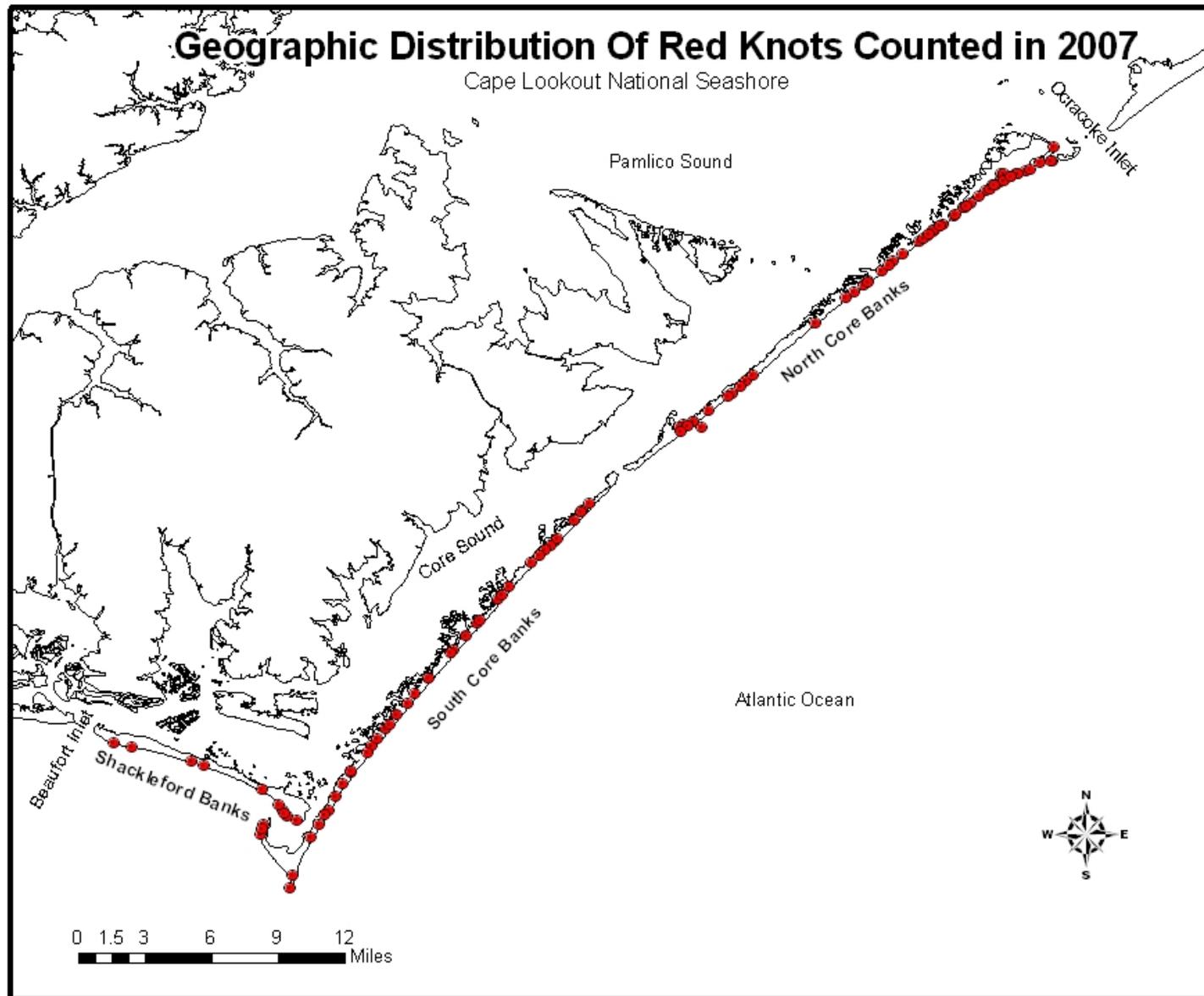


Figure 3. Geographic Distribution of Red Knots Counted in 2007.



Appendix 2. 2007 Red Knot Survey Data

Month	Day	Observer	Island	# REKN	Mile	Latitude	Longitude	Disturbance	Tide	Accuracy
5	15	Martin	SCB	19	37	34.67833	-76.48197	A	7	*
5	15	Martin	SCB	47	38.4	34.66134	-76.49608	A	7	*
5	15	Martin	SCB	102	39	34.65333	-76.5013	A	7	*
5	15	Martin	SCB	89	40	34.63696	-76.51068	A	7	*
5	15	Martin	SCB	8	41.6	34.61952	-76.52191	A	7	*
5	15	Martin	SCB	56	24	34.82225	-76.35058	A	7	*
5	15	Martin	SCB	22	25.7	34.80931	-76.36334	A	7	*
5	15	Martin	SCB	15	27	34.79515	-76.37839	A	7	*
5	15	Martin	SCB	8	28.3	34.78035	-76.39255	A	7	*
5	15	Martin	SCB	18	30.3	34.75673	-76.41346	A	7	*
5	15	Martin	SCB	20	31	34.74854	-76.42086	A	7	*
5	15	Martin	SCB	37	32	34.73935	-76.42938	A	7	*
5	15	Martin	SCB	22	33.3	34.72177	-76.44522	A	7	*
5	15	Martin	SCB	37	34	34.71139	-76.45409	A	7	*
5	15	Martin	SCB	11	35.3	34.69785	-76.46592	A	7	*
5	15	Martin	SCB	42	36	34.68938	-76.47316	A	7	*
5	15	Sayles	NCB	222	3	35.03777	-76.07703	C	8	*
5	15	Sayles	NCB	55	1	35.05235	-76.04667	C	8	*
5	15	Sayles	NCB	17	4.5	35.02353	-76.09569	C	8	*
5	15	Sayles	NCB	36	5	35.01819	-76.10305	C	8	*
5	15	Sayles	NCB	68	6.05	35.00794	-76.11638	C	8	*
5	15	Sayles	NCB	34	6.7	35.00157	-76.12505	C	8	*
5	15	Sayles	NCB	19	8	34.98882	-76.14207	D	8	*
5	15	Sayles	NCB	94	10	34.96906	-76.16789	D	8	*
5	15	Sayles	NCB	56	12	34.94909	-76.19345	D	8	*
5	15	Sayles	NCB	48	18.2	34.88609	-76.27284	D	8	*
5	15	Sayles	NCB	69	18.8	34.88089	-76.28046	D	8	*
5	18	Sayles	SB	125	47	34.62712	-76.55304	A	2	*
5	25	Sayles	SB	1	47.28	34.63002	-76.5309	A	7	*
5	25	Sayles	SB	27	47.99	34.63279	-76.53711	A	7	*
5	25	Sayles	SB	9	51.79	34.66815	-76.59954	A	4	*
5	25	Sayles	SB	2	54.7	34.67994	-76.65038	A	2	*
5	25	Martin	SCB	25	24	34.82887	-76.3448	A	7	*
5	25	Martin	SCB	12	25.9	34.80661	-76.36591	A	8	*
5	25	Martin	SCB	10	26.2	34.80349	-76.36908	A	6	*
5	25	Martin	SCB	40	29	34.77182	-76.40033	A	6	*
5	25	Martin	SCB	14	30.1	34.75868	-76.41157	A	6	*
5	25	Martin	SCB	8	32	34.73808	-76.43046	A	6	*
5	25	Martin	SCB	7	33.3	34.72137	-76.44545	A	6	*
5	25	Martin	SCB	13	34.7	34.70559	-76.45909	A	6	*
5	25	Martin	SCB	14	35.8	34.69195	-76.47069	A	6	*
5	25	Martin	SCB	6	37.3	34.674	-76.48541	A	6	*

5	25	Martin	SCB	5	38.3	34.66194	-76.49543	A	6	*
5	25	Martin	SCB	13	39.6	34.64527	-76.50585	A	6	*
5	25	Martin	SCB	5	40.5	34.63387	-76.51257	A	6	*
5	25	Martin	SCB	11	41	34.62786	-76.51635	A	6	*
5	25	Martin	SCB	9	43.4	34.59522	-76.53337	A	6	*
5	25	Martin	SCB	2	46.6	34.62079	-76.55418	A	6	*
5	25	Schulte	NCB	9	17.5			B	6	*
5	25	Schulte	NCB	6	7.7	34.99345	-76.13577	B	6	*
5	25	Schulte	NCB	27	5.8	35.00912	-76.11506	A	6	*
5	25	Schulte	NCB	16	5.4	35.01199	-76.11135	A	6	*
5	25	Schulte	NCB	30	4.8	35.01917	-76.10178	B	6	*
5	25	Schulte	NCB	46	4.1	35.02642	-76.09195	A	6	*
5	25	Schulte	NCB	7	2.2	35.0419	-76.06805	A	6	*
5	25	Schulte	NCB	24	2.1	35.04351	-76.06541	B	6	*
5	25	Schulte	NCB	17	2	35.04514	-76.06104	A	6	*
5	25	Schulte	NCB	19	1.7	35.04652	-76.05611	A	6	*
6	5	Sayles	NCB	5	18.24	34.88633	-76.27255	B		*
6	5	Sayles	NCB	8	10.38	34.96531	-76.17279	A		*
6	5	Sayles	NCB	13	9.29	34.97595	-76.15861	A		*
6	5	Sayles	NCB	21	8.58	34.98297	-76.14947	A		*
6	5	Sayles	NCB	12	6.29	35.00561	-76.11998	A		*
6	5	Sayles	NCB	4	4.5	35.02317	-76.09654	A		*
6	5	Sayles	NCB	11	3.38	35.03382	-76.08166	A		*
6	5	Sayles	NCB	38	2.54	35.04125	-76.07006	A		*
6	6	Martin	SCB	6	23.2	34.83354	-76.34015	B	6	*
6	6	Martin	SCB	15	24	34.828	-76.34556	A	6	*
6	6	Martin	SCB	11	25.5	34.81103	-76.36153	A	6	*
6	6	Martin	SCB	43	26.5	34.80009	-76.37294	A	6	*
6	6	Martin	SCB	6	28.7	34.77509	-76.39762	B	6	*
6	6	Martin	SCB	2	36.6	34.68272	-76.47838	A	6	*
6	6	Martin	SCB	5	44	34.58705	-76.53561	A	6	*
6	6	Martin	SCB	12	46.8	34.6245	-76.55406	A	2	*
6	8	Sayles	SB	0					3	*
7	14	Sayles	SB	3	47.97	34.63651	-76.54030	A	8	*
7	15	Tracy	NCB	2	8.26	34.98621	-76.14530	A	1	*
7	15	Tracy	NCB	3	2.1	35.04476	-76.07200	A	1	*
7	15	Tracy	NCB	26	2.6	35.04123	-76.07200	A	1	*
7	15	Martin	SCB	0						
7	25	Rikard	SCB	0						
7	25	Sayles	NCB	9	4	35.02317	-76.09654	A	7	*
7	27	Sayles	SB	0						
8	3	Sayles	SB	0						
8	5	Tracy	NCB	2	6.5	35.00864	-76.11632	A	6	*
8	5	Tracy	NCB	1	3.2	35.03928	-76.07258	A	6	*
8	5	Tracy	NCB	13	0	35.05297	-76.03884	A	6	*
8	6	Martin	SCB	0						
8	15	Altman	SCB	0						
8	15	Sayles	NCB	12	18.64	34.88402	-76.27897	A	4	*
8	15	Sayles	NCB	8	17.86	34.88197	-76.26730	A	4	*

8	15	Sayles	NCB	10	16.37	34.90406	-76.24761	A	4	*
8	15	Sayles	NCB	12	3.2	35.03543	-76.07905	A	4	*
8	15	Sayles	NCB	11	2.93	35.03776	-76.07555	A	4	*
8	15	Sayles	NCB	18	2.55	35.04499	-76.07000	A	4	*
8	15	Sayles	NCB	6	2.09	35.04477	-76.06225	A	4	*
8	15	Sayles	NCB	1	0.57	35.05293	-76.03911	A	4	*
8	17	Sayles	SB	2	48.54	34.64993	-76.55406	A	4	*
8	24	Altman	SCB	6	38			B	2	*
8	24	Altman	SCB	7	39			B	2	*
8	24	Sayles	SB	2	47.7	34.63507	-76.53915	A	6	*
8	25	Tracy	NCB	5	18	34.88237	-76.28131	A	3	*
8	25	Tracy	NCB	13	4.4	35.02405	-76.09488	B	3	*
8	25	Tracy	NCB	10	2.6	35.04072	-76.07036	B	3	*
8	25	Tracy	NCB	4	1.8	35.04506	-76.06078	A	3	*
9	5	Altman	SCB	0						
9	5	Sayles	NCB	3	17			A	7	*
9	5	Sayles	NCB	13	4			B	6	*
9	7	Sayles	SB	0						
9	14	Sayles	SB	2	54	34.67731	-76.63849	A	3	*
9	15	Tracy	NCB	3		34.88348	-76.27646	A	2	*
9	15	Tracy	NCB	6		34.90252	-76.24963	A	2	*
9	15	Tracy	NCB	7		34.91171	-76.23817	A	2	*
9	15	Tracy	NCB	4		34.91545	-76.23355	A	2	*
9	15	Tracy	NCB	7		34.97376	-76.16138	A	2	*
9	15	Tracy	NCB	6		35.00345	-76.12267	A	2	*
9	15	Tracy	NCB	6		35.06629	-76.11880	A	2	*
9	15	Tracy	NCB	12		35.01258	-76.11041	A	2	*
9	15	Tracy	NCB	10		35.03735	-76.07626	A	2	*
9	15	Tracy	NCB	8		35.04307	-76.06595	A	2	*
9	15	Tracy	NCB	23		35.04763	-76.05306	A	2	*
9	15	Tracy	NCB	5		35.06174	-76.03785	A	2	*
9	17	Altman	SCB	0						
9	25	Altman	SCB	0						
9	25	Tracy	NCB	1		34.87993	-76.28091	A	8	*
9	25	Tracy	NCB	5		34.89316	-76.26248	A	8	*
9	25	Tracy	NCB	6		34.90867	-76.24161	A	8	*
9	25	Tracy	NCB	6		35.01146	-76.11192	A	8	*
9	25	Tracy	NCB	3		35.03033	-76.08633	A	8	*
9	28	Sayles	SB	25	48	34.64017	-76.54239	A	1	*
9	28	Sayles	SB	30	51.3	34.66573	-76.59152	A	3	*
10	3	Altman	NCB	0				A	2	*
10	4	Altman	SB	0					1	*
10	5	Altman	SCB	1	38			A	1	*
10	15	Altman	NCB	13	9	34.97575	-76.15882	B	1	*
10	16	Altman	SCB	0						
10	17	Altman	SB	0						

