

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

2011 SUMMARY REPORT



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NATIONAL PARK SERVICE  
CAPE LOOKOUT NATIONAL SEASHORE  
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## Introduction

Serious declines in the population of red knots (*Calidrus canutus rufa*) 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 2011 and comparisons to results from the earlier study and discussion 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 (NCB) and South Core Banks (SCB) beginning in mid-March.

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 5<sup>th</sup> and from July 15<sup>th</sup> to October 15<sup>th</sup>.

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).

## Results

Most of the red knots counted during our surveys were found on NCB with an average of 105 birds. SCB averaged 84 birds. NCB had the highest count of 648 birds on May 15. SCB highest count of 484 birds was on May 5. The peak numbers for the core banks were during spring migration with 1012 birds counted on the May 15 census. The spring migration from 15 March to 5 June averaged 288 birds. There was also a small peak in late July and August when fall migrants moved back through (Figure 1). The fall migration from 15 July to 15 October averaged 87 birds. A winter count on December 9<sup>th</sup> yielded 58 birds on SCB. Red knots were distributed over the length of the seashore (Figure2). There were three banded birds re-sighted; green flag 7HX, green flag 45A, and orange flag N4Y.

## 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 28 birds/kilometer compared to 34 birds/kilometer in 1992-1993. This comparison does take into account the gain of 2 km of census data due to New Drum Inlet closing in 2009. The 1992-1993 study censused 34 km, were as North Core Banks length is 36 km in the spring of 2011 after the closing of Old Drum Inlet and New Drum Inlet in March of 2009. NCB averaged more birds overall and had the highest peak count. 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.

Table 1. Red knot relative abundance on North Core Banks, 1992-2011.

Year	Date	Peak Count	Kilometers	Abundance
1992-1993			34	34
2006	5-May	618	29.2	21
2007	15-May	718	29.2	24
2008	15-Apr	1287	29.2	44
2009	25-May	525	36	14
2010	15-May	927	36	26
2011	15-May	1012	36	28

## 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. Number of Red Knots Counted at Cape Lookout National Seashore in 2011.

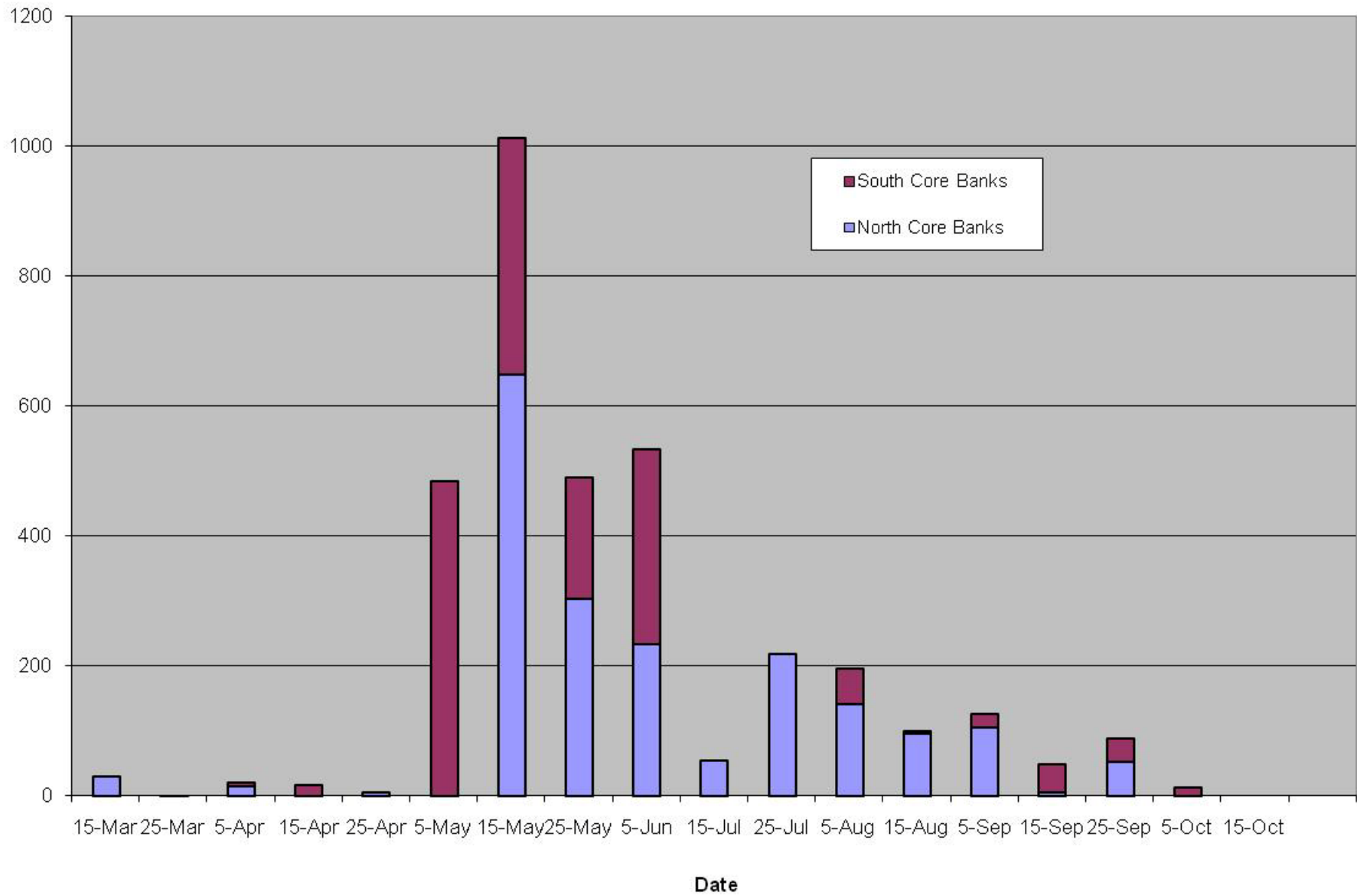
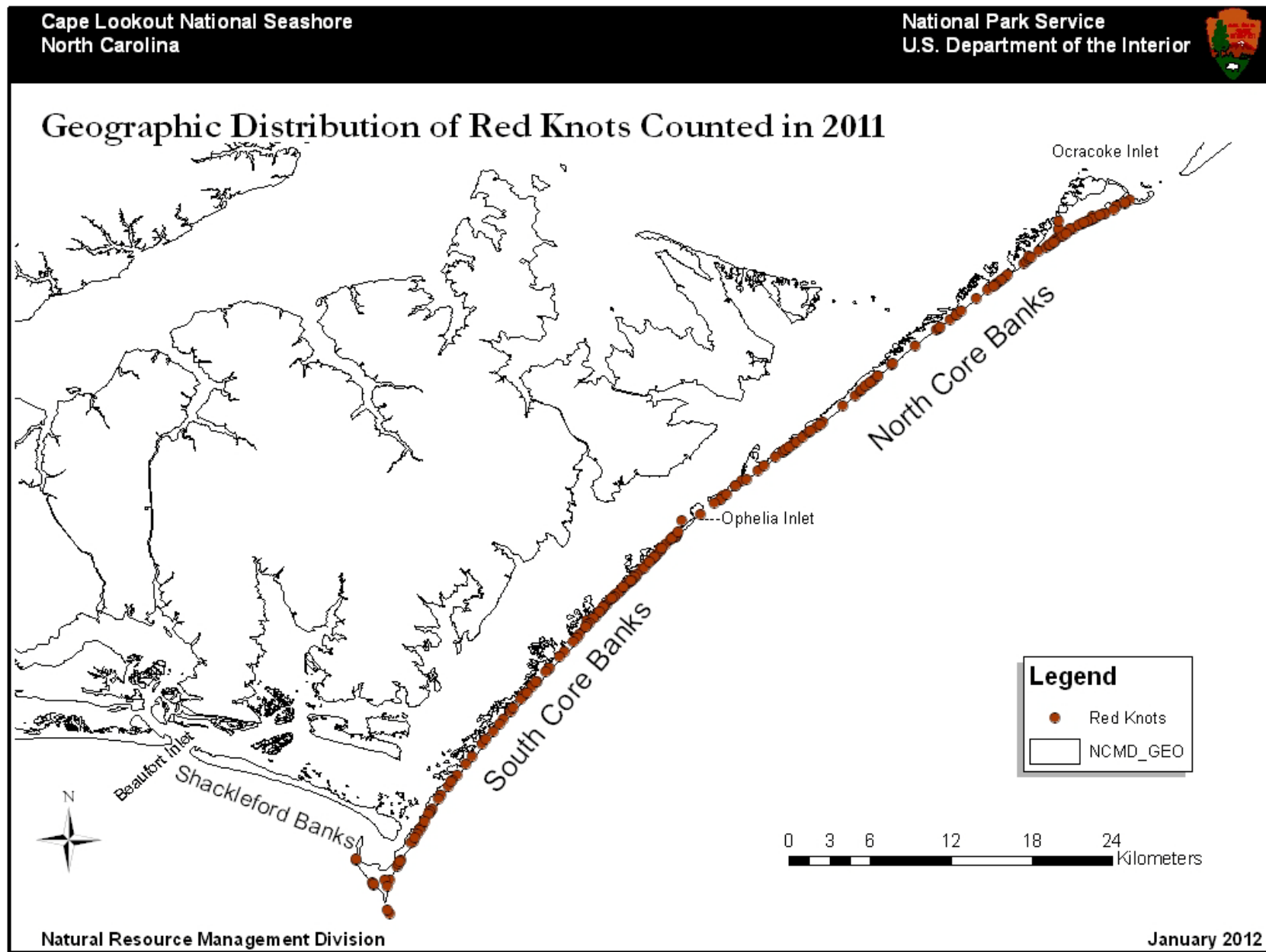


Figure 2. Geographic Distribution of Red Knots Counted in 2011.





Appendix 2. 2011 Red Knot Survey Data

Month	Day	Observer	Island	#REKN	Mile	Latitude	Longitude	Disturbance	Tide
3	14	Jon A. & Erin L.	NCB	28	1.7	35.04580	76.05766	A	2
3	25	Erin Lamm	NCB	2	2	35.04865	76.03538	A	2
3	25	Erin Lamm	NCB	1	0	35.06152	76.03538	B	2
4	5	Paula D.,Amy P. &W.	NCB	14	21.5	34.85346	76.31518	B	4
4	15	Paula D.	NCB	0	NA	NA	NA	NA	4
4	25	Amy Westmark	NCB	4	20.5	34.86410	76.30220	A	6
5	5	Paula D.	NCB	0	NA	NA	NA	NA	2
5	15	Amy Westmark	NCB	11	21.2	34.85711	-76.31078	A	5
5	15	Amy Westmark	NCB	17	21	34.85955	-76.30873	A	5
5	15	Amy Westmark	NCB	6	20.45	34.86954	-76.29592	A	5
5	15	Amy Westmark	NCB	9	18.71	34.88843	-76.26915	A	5
5	15	Amy Westmark	NCB	36	18	34.88843	-76.26915	A	5
5	15	Amy Westmark	NCB	28	17.8	34.89047	-76.26669	A	5
5	15	Amy Westmark	NCB	7	17.45	34.89370	-76.26196	A	5
5	15	Amy Westmark	NCB	7	16.28	34.90501	-76.24664	A	5
5	15	Amy Westmark	NCB	29	16	34.90850	-76.2422	A	5
5	15	Amy Westmark	NCB	1	14.85	34.91948	-76.22857	A	5
5	15	Amy Westmark	NCB	5	14.2	34.92622	-76.2205	A	5
5	15	Amy Westmark	NCB	8	13.95	34.92896	-76.21729	A	5
5	15	Amy Westmark	NCB	14	13.51	34.93357	-76.2121	A	5
5	15	Amy Westmark	NCB	34	13.21	34.93661	-76.20846	A	5
5	15	Amy Westmark	NCB	21	12.25	34.94651	-76.19648	A	5
5	15	Amy Westmark	NCB	6	11	34.95945	-76.18031	A	5
5	15	Amy Westmark	NCB	21	9.91	34.96985	-76.16658	A	5
5	15	Amy Westmark	NCB	6	9.17	34.97707	-76.15687	A	5
5	15	Amy Westmark	NCB	14	8.87	34.97996	-76.15305	A	5
5	15	Amy Westmark	NCB	11	6.76	35.00066	-76.12621	A	5
5	15	Amy Westmark	NCB	15	6.58	35.00277	-76.12365	A	5
5	15	Amy Westmark	NCB	6	6.37	35.00484	-76.12085	A	5
5	15	Amy Westmark	NCB	11	6.22	35.00632	-76.11884	A	5
5	15	Amy Westmark	NCB	2	5.42	35.01418	-76.1084	A	5
5	15	Amy Westmark	NCB	10	5.28	35.01542	-76.1067	A	5
5	15	Amy Westmark	NCB	8	5.11	35.01715	-76.10448	A	5
5	15	Amy Westmark	NCB	10	5	35.01916	-76.10448	A	5
5	15	Amy Westmark	NCB	44	4.6	35.02217	-76.09784	A	5
5	15	Amy Westmark	NCB	41	4.27	35.02538	-76.09351	A	5
5	15	Amy Westmark	NCB	9	4	35.02785	-76.08989	A	5
5	15	Amy Westmark	NCB	3	3.84	35.02937	-76.08781	A	5
5	15	Amy Westmark	NCB	26	3.72	35.03055	-76.08622	A	5
5	15	Amy Westmark	NCB	9	3.49	35.03273	-76.08308	A	5
5	15	Amy Westmark	NCB	19	3.28	35.03460	-76.08011	A	5
5	15	Amy Westmark	NCB	15	3.11	35.03622	-76.07757	A	5
5	15	Amy Westmark	NCB	94	2.58	35.04054	-76.07019	A	5

5	15	Amy Westmark	NCB	15	2.31	35.04253	-76.06593	A	5
5	15	Amy Westmark	NCB	6	2.13	35.04446	-76.06145	A	5
5	15	Amy Westmark	NCB	12	1.58	35.04725	-76.05488	A	5
5	15	Amy Westmark	NCB	7	1.12	35.05235	-76.04667	A	5
5	15	Amy Westmark	NCB	31	1	35.05235	-76.04667	A	5
5	25	Amy Preston	NCB	11	7.23	34.99633	-76.13193	A	5
5	25	Amy Preston	NCB	26	6.54	35.00304	-76.12306	A	5
5	25	Amy Preston	NCB	39	4	34.93043	-76.09353	A	5
5	25	Amy Preston	NCB	93	3.61	35.01430	-76.08464	A	5
5	25	Amy Preston	NCB	46	3.03	35.03632	-76.08464	A	5
5	25	Amy Preston	NCB	50	2.89	35.03770	-76.08464	A	5
5	25	Amy Preston	NCB	37	2.3	35.04253	-76.08464	A	5
6	5	Amy Westmark	NCB	6	22.24	34.84694	-76.32418	A	1
6	5	Amy Westmark	NCB	6	21.21	34.85701	-76.31084	A	1
6	5	Amy Westmark	NCB	8	20.37	34.86562	-76.30023	A	1
6	5	Amy Westmark	NCB	15	19.25	34.87633	-76.28551	A	1
6	5	Amy Westmark	NCB	9	18.35	34.88529	-76.27393	A	1
6	5	Amy Westmark	NCB	3	18.15	34.88997	-76.26719	A	1
6	5	Amy Westmark	NCB	6	17.68	34.89155	-76.26493	B	1
6	5	Amy Westmark	NCB	6	17.3	34.89513	-76.25986	A	1
6	5	Amy Westmark	NCB	2	16.98	34.89822	-76.25558	A	1
6	5	Amy Westmark	NCB	6	16.63	34.90163	-76.25099	A	1
6	5	Amy Westmark	NCB	6	16.11	34.90671	-76.24426	A	1
6	5	Amy Westmark	NCB	5	13.82	34.93026	-76.21600	A	1
6	5	Amy Westmark	NCB	5	13.26	34.93603	-76.20906	A	1
6	5	Amy Westmark	NCB	14	9.14	34.97997	-76.15273	A	1
6	5	Amy Westmark	NCB	9	7.12	34.99969	-76.12740	A	1
6	5	Amy Westmark	NCB	3	5	35.01817	-76.10276	A	1
6	5	Amy Westmark	NCB	6	4.14	35.02639	-76.09164	A	1
6	5	Amy Westmark	NCB	38	2.9	35.03775	-76.07466	A	1
6	5	Amy Westmark	NCB	30	2.5	35.04095	-76.06881	A	1
6	5	Amy Westmark	NCB	18	1.57	35.04724	-76.05447	A	1
6	5	Amy Westmark	NCB	31	0.4	35.05659	-76.03717	A	1
7	15	Paula Dailey	NCB	13	1.92	35.04483	-76.06010	A	4
7	15	Paula Dailey	NCB	17	2.23	35.04316	-76.06435	A	4
7	15	Paula Dailey	NCB	11	3.48	35.03265	-76.08274	A	4
7	15	Paula Dailey	NCB	13	12.97	34.93896	-76.20538	A	4
7	25	Amy Preston	NCB	26	20.35	34.86568	-76.30008	A	6
7	25	Amy Preston	NCB	9	20.16	34.87050	-76.29331	A	6
7	25	Amy Preston	NCB	27	18.92	34.87952	-76.28125	A	6
7	25	Amy Preston	NCB	14	13.62	34.93216	-76.21357	A	6
7	25	Amy Preston	NCB	17	8	34.99048	-76.13957	A	6
7	25	Amy Preston	NCB	23	4.1	35.02690	-76.09079	A	6
7	25	Amy Preston	NCB	19	3.81	35.02946	-76.08722	A	6
7	25	Amy Preston	NCB	47	2.19	35.04341	-76.06342	A	6
7	25	Amy Preston	NCB	36	1.53	35.04737	-76.05389	A	6
8	5	Paula Dailey	NCB	4	9.8	34.97085	-76.16514	A	2
8	5	Paula Dailey	NCB	5	6.94	34.99914	-76.12811	A	2



8	5	Paula Dailey	NCB	3	3.92	35.03777	-76.07703	A	2
8	5	Paula Dailey	NCB	17	2.32	35.04607	-76.06255	A	2
8	5	Paula Dailey	NCB	54	2.19	35.04414	-76.06198	A	2
8	5	Paula Dailey	NCB	42	1.73	35.04640	-76.05733	A	2
8	5	Paula Dailey	NCB	9	1.19	35.04989	-76.04832	A	2
8	5	Paula Dailey	NCB	6	0.65	35.05372	-76.04074	A	2
8	15	Amy Westmark	NCB	33	2.5	35.04242	-76.06559	A	5
8	15	Amy Westmark	NCB	30	3.1	35.03453	-76.07964	C	5
8	15	Amy Westmark	NCB	10	3.5	35.02869	-76.08823	A	5
8	15	Amy Westmark	NCB	11	2.1	34.86052	-76.30670	A	5
8	15	Amy Westmark	NCB	11	21.5	34.85405	-76.31446	A	5
9	5	Amy Westmark	NCB	2	16.5	34.90231	-76.25021	A	8
9	5	Amy Westmark	NCB	5	13.36	34.93503	-76.21025	A	8
9	5	Amy Westmark	NCB	4	13	34.93932	-76.20522	A	8
9	5	Amy Westmark	NCB	1	12.19	34.94715	-76.19579	A	8
9	5	Amy Westmark	NCB	3	9.7	34.97190	-76.16379	A	8
9	5	Amy Westmark	NCB	10	8.63	34.98233	-76.14992	B	8
9	5	Amy Westmark	NCB	9	2.68	35.03995	-76.07185	A	8
9	5	Amy Westmark	NCB	70	2.45	35.04130	-76.06857	A	8
9	15	Paula Dailey	NCB	5	0.63	35.05456	-76.04074	A	4
9	28	Jon Altman	NCB	5	0.4	35.05678	-76.03780	A	7
9	28	Jon Altman	NCB	5	0.8	35.05247	-76.04344	A	7
9	28	Jon Altman	NCB	2	3.18	35.03557	-76.07877	A	7
9	28	Jon Altman	NCB	3	3.51	35.03264	-76.08339	A	7
9	28	Jon Altman	NCB	18	3.81	35.02978	-76.08752	A	7
9	28	Jon Altman	NCB	7	4.33	35.02484	-76.09436	A	7
9	28	Jon Altman	NCB	7	6.82	35.00040	-76.12676	A	7
9	28	Jon Altman	NCB	4	16.88	34.89931	-76.25451	A	7
10	5	Amy Preston	SCB	2	23.41	34.83510	-76.33876	A	8
10	5	Amy Preston	SCB	9	26.8	34.79339	-76.37478	A	8
10	5	Jon Altman	NCB	0					8
10	17	Jon Altman	NCB	0					6
3	15	Jon Altman	SCB	0	NA	NA	NA	NA	1
3	25	Chris Bland	SCB	0	NA	NA	NA	NA	NA
4	5	Erin Lamm	SCB	6	NA	34.64912	-76.50375	B	NA
4	15	Chris Bland	SCB	4	46.25	34.61584	-76.55397	A	5
4	15	Chris Bland	SCB	6	27.12	34.79337	-76.38013	A	5
4	15	Chris Bland	SCB	6	23.54	34.78123	-76.37985	A	5
4	26	Erin Lamm	SCB	0	NA	NA	NA	NA	NA
5	5	Erin Lamm	SCB	71	22.86	34.84288	-76.33605	A	3
5	5	Erin Lamm	SCB	1	24.97	34.81679	-76.35615	A	3
5	5	Erin Lamm	SCB	11	27.96	34.78389	-76.38936	A	3
5	5	Erin Lamm	SCB	9	44.63	34.78389	-76.38937	A	3
5	16	Erin Lamm	SCB	20	24.14	34.82690	-76.34697	A	5
5	16	Erin Lamm	SCB	43	24.44	34.82333	-76.35007	B	5
5	16	Erin Lamm	SCB	17	24.74	34.81974	-76.35326	B	5
5	16	Erin Lamm	SCB	2	24.88	34.81812	-76.35485	B	5
5	16	Erin Lamm	SCB	4	25.33	34.81318	-76.35977	B	5

5	16	Erin Lamm	SCB	60	25.58	34.81039	-76.36259	A	5
5	16	Erin Lamm	SCB	2	26.86	34.79625	-76.37724	A	5
5	16	Erin Lamm	SCB	9	28.99	34.77206	-76.40041	B	5
5	16	Erin Lamm	SCB	2	29.41	34.76700	-76.40452	B	5
5	16	Erin Lamm	SCB	11	32.94	34.72596	-76.44188	A	5
5	16	Erin Lamm	SCB	15	33.82	34.71540	-76.45055	A	5
5	16	Erin Lamm	SCB	3	34.29	34.71001	-76.45536	A	5
5	16	Erin Lamm	SCB	12	34.53	34.70708	-76.45782	A	5
5	16	Erin Lamm	SCB	7	35.68	34.69354	-76.46954	A	5
5	16	Erin Lamm	SCB	9	36.75	34.68066	-76.48009	A	5
5	16	Erin Lamm	SCB	12	36.94	34.67840	-76.98199	A	5
5	16	Erin Lamm	SCB	3	37.38	34.67309	-76.48640	A	5
5	16	Erin Lamm	SCB	13	38.50	34.65959	-76.49707	A	5
5	16	Erin Lamm	SCB	6	39.23	34.65018	-76.50309	A	5
5	16	Erin Lamm	SCB	18	39.44	34.64751	-76.50489	A	5
5	16	Erin Lamm	SCB	8	40.09	34.63892	-76.50958	A	5
5	16	Erin Lamm	SCB	16	40.31	34.63597	-76.51122	A	5
5	16	Erin Lamm	SCB	5	40.86	34.62899	-76.51569	A	5
5	16	Erin Lamm	SCB	5	41.85	34.61639	-76.52398	A	5
5	16	Erin Lamm	SCB	2	42.20	34.61178	-76.52651	A	5
5	16	Erin Lamm	SCB	14	42.85	34.60299	-76.53110	A	5
5	16	Erin Lamm	SCB	54	44.50	34.58074	-76.53110	A	5
5	16	Erin Lamm	SCB	18	46.32	34.61705	-76.55363	A	5
5	16	Erin Lamm	SCB	2	46.61	34.62124	UNK	A	5
5	27	Erin Lamm	SCB	7	23.55	34.83335	-76.33957	A	7
5	27	Erin Lamm	SCB	5	23.71	34.83161	-76.34188	A	7
5	27	Erin Lamm	SCB	31	24.45	34.82314	-76.35010	A	7
5	27	Erin Lamm	SCB	8	24.78	34.81932	-76.35354	A	7
5	27	Erin Lamm	SCB	24	25.00	34.81662	-76.35625	A	7
5	27	Erin Lamm	SCB	7	25.51	34.81111	-76.36166	A	7
5	27	Erin Lamm	SCB	14	25.98	34.80552	-76.36723	A	7
5	27	Erin Lamm	SCB	31	26.19	34.80348	-76.36926	A	7
5	27	Erin Lamm	SCB	3	26.45	34.80069	-76.37247	A	7
5	27	Erin Lamm	SCB	6	26.85	34.79631	-76.37705	A	7
5	27	Erin Lamm	SCB	2	27.20	34.79241	-76.38102	A	7
5	27	Erin Lamm	SCB	17	27.36	34.79062	-76.38280	A	7
5	27	Erin Lamm	SCB	6	27.69	34.78683	-76.38639	A	7
5	27	Erin Lamm	SCB	19	27.80	34.78565	-76.38763	A	7
5	27	Erin Lamm	SCB	6	28.10	34.78222	-76.39099	A	7
5	27	Erin Lamm	SCB	17	28.39	34.77892	-76.39413	A	7
5	27	Erin Lamm	SCB	6	28.94	34.77620	-76.39982	A	7
5	27	Erin Lamm	SCB	12	29.62	34.76440	-76.40646	A	7
5	27	Erin Lamm	SCB	11	29.83	34.76191	-76.40863	A	7
5	27	Erin Lamm	SCB	6	30.39	34.75560	-76.41458	A	7
5	27	Erin Lamm	SCB	7	31.44	34.74326	-76.42574	A	7
5	27	Erin Lamm	SCB	17	32.11	34.73552	-76.43289	A	7
5	27	Erin Lamm	SCB	5	32.44	34.73171	-76.43647	A	7
5	27	Erin Lamm	SCB	2	32.94	34.72591	-76.44164	A	7

5	27	Erin Lamm	SCB	4	33.16	34.72332	-76.44389	A	7
5	27	Erin Lamm	SCB	42	34.96	34.70225	-76.46192	A	7
5	27	Erin Lamm	SCB	2	37.76	34.66953	-76.48914	A	7
5	27	Erin Lamm	SCB	16	37.97	34.66559	-76.49236	A	7
6	5	Erin Lamm	SCB	1	23.54	34.83319	-76.33988	A	3
6	5	Erin Lamm	SCB	2	23.86	34.82983	-76.34386	A	3
6	5	Erin Lamm	SCB	53	24.49	34.82265	-76.35050	A	3
6	5	Erin Lamm	SCB	18	24.85	34.81853	-76.35432	A	3
6	5	Erin Lamm	SCB	7	25.14	34.81534	-76.35760	A	3
6	5	Erin Lamm	SCB	13	25.90	34.80688	-76.36620	A	3
6	5	Erin Lamm	SCB	14	26.03	34.80542	-76.36766	A	3
6	5	Erin Lamm	SCB	10	26.24	34.80292	-76.36990	A	3
6	5	Erin Lamm	SCB	4	26.36	34.80167	-76.37132	A	3
6	5	Erin Lamm	SCB	16	26.65	34.79850	-76.37473	A	3
6	5	Erin Lamm	SCB	12	27.00	34.79457	-76.37885	A	3
6	5	Erin Lamm	SCB	14	27.22	34.79218	-76.38125	A	3
6	5	Erin Lamm	SCB	6	27.87	34.78498	-76.38850	A	3
6	5	Erin Lamm	SCB	1	28.13	34.78203	-76.39135	A	3
6	5	Erin Lamm	SCB	1	28.52	34.77752	-76.39571	A	3
6	5	Erin Lamm	SCB	6	28.77	34.77470	-76.39829	B	3
6	5	Erin Lamm	SCB	15	28.89	34.77320	-76.39950	B	3
6	5	Erin Lamm	SCB	8	29.00	34.77180	-76.40067	A	3
6	5	Erin Lamm	SCB	19	29.68	34.76378	-76.80700	A	3
6	5	Erin Lamm	SCB	3	30.68	34.75219	-76.41762	A	3
6	5	Erin Lamm	SCB	4	31.34	34.74445	-76.42480	A	3
6	5	Erin Lamm	SCB	5	31.55	34.74200	-76.42680	A	3
6	5	Erin Lamm	SCB	5	32.75	34.72814	-76.43963	A	3
6	5	Erin Lamm	SCB	17	33.65	34.71749	-76.44878	A	3
6	5	Erin Lamm	SCB	3	35.41	34.69668	-76.46681	A	3
6	5	Erin Lamm	SCB	9	35.65	34.69382	-76.46192	A	3
6	5	Erin Lamm	SCB	9	38.70	34.65703	-76.49872	A	3
6	5	Erin Lamm	SCB	2	40.48	34.63391	-76.51260	A	3
6	5	Erin Lamm	SCB	6	42.04	34.61393	-76.52552	A	3
6	5	Erin Lamm	SCB	15	44.34	34.58300	-76.53264	A	3
6	5	Erin Lamm	SCB	3	45.00	34.59966	-76.54165	A	3
7	15	Erin Lamm	SCB	0	NA	NA	NA	NA	2
7	25	Amy Westmakr	SCB	0	NA	NA	NA	NA	4
8	5	Jon Altman	SCB	54	23.65	34.83218	-76.34074	C	2
8	15	Amber Rhodes	SCB	2	39.35	34.64845	-76.50411	C	2
8	15	Amber Rhodes	SCB	1	23.65	34.83218	-76.34076	C	2
9	6	Amber Rhodes	SCB	17	23.63	34.83232	-76.34020	B	6
9	6	Amber Rhodes	SCB	4	23.47	34.84091	-76.23665	C	6
9	18	Erin Lamm	SCB	16	24.70	34.83100	-76.34291	A	2
9	18	Erin Lamm	SCB	2	24.25	34.82468	-76.34921	A	2
9	19	Erin Lamm	SCB	4	26.32	34.80249	-76.37076	A	2
9	19	Erin Lamm	SCB	1	26.82	34.79815	-76.37561	A	2
9	19	Erin Lamm	SCB	2	27.40	34.79025	-76.38365	A	2
9	19	Erin Lamm	SCB	2	32.22	34.73503	-76.43368	A	2

9	19	Erin Lamm	SCB	2	36.30	34.68561	-76.47639	A	2
9	19	Erin Lamm	SCB	1	37.22	34.66847	-76.49046	A	2
9	19	Erin Lamm	SCB	2	39.28	34.64668	-76.50537	A	2
9	19	Erin Lamm	SCB	3	41.90	34.61570	-76.52468	A	2
9	19	Erin Lamm	SCB	1	42.86	34.60283	-76.53425	A	2
9	24	Erin Lamm	SCB	1	45.01	34.60089	-76.54242	A	2
9	24	Erin Lamm	SCB	4	44.99	34.60019	-76.54223	A	2
9	24	Erin Lamm	SCB	3	43.19	34.59832	-76.53268	A	2
9	24	Erin Lamm	SCB	9	40.96	34.62774	-76.51674	A	2
9	24	Erin Lamm	SCB	12	40.67	34.63137	-76.51416	A	2
9	24	Erin Lamm	SCB	3	39.83	34.64233	-76.50754	A	2
9	24	Erin Lamm	SCB	4	27.36	34.79087	-76.38307	A	2
10	6	Amy Preston	SCB	2	23.41	34.83510	-76.33876	A	8
10	6	Amy Preston	SCB	9	26.80	34.79339	-76.37478	B	8
10	18	Jon Altman	SCB	0				A	2
12	9	Jon Altman	SCB	58	43	34.59996	-76.53201	A	7