

Final

**Protected Species Monitoring in
Navy OPAREAs – Aerial Surveys in
the Jacksonville Operating Area:
January 2014 – December 2014**

Submitted to:

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49, issued to HDR, Inc.



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Cover Photo Credit:

Humpback whale (*Megaptera novaeangliae*). Photo collected by the University of North Carolina Wilmington under NOAA scientific permit # 16473.

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Acronyms and Abbreviations

BSS	Beaufort Sea State
EWS	Early Warning System
FWC	Florida Fish and Wildlife Conservation Commission
km	kilometer(s)
m	meter(s)
NOAA	National Oceanic and Atmospheric Administration
R/V	Research Vessel
Stdv	standard deviation
U.S.	United States

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1. Introduction

This report forms part of a multi-institutional monitoring project intended to provide information on the species composition, population identity, density and baseline behavior of marine mammals and sea turtles present in United States (U.S.) Navy range complexes along the U.S. Atlantic Coast. This program began in 2007, with baseline aerial and vessel surveys and a passive acoustic monitoring program in Onslow Bay, North Carolina, and has since expanded to include study areas off Jacksonville, Florida, and Cape Hatteras, North Carolina. In Onslow Bay, six years of monitoring yielded a comprehensive picture of the density, distribution and abundance of marine mammals and sea turtles and provided new insights into residency patterns among pelagic delphinid cetaceans in that region ([Read et al. 2014](#)). More than five years of monitoring in Jacksonville has provided similar information on the density and distribution of marine mammals and sea turtles in this area. In Cape Hatteras, almost four years of surveys have also provided preliminary information on the complex patterns of distribution and diversity of the marine mammals and sea turtles in that highly productive area. The current report builds on this past body of work and describes aerial survey monitoring activities that occurred between January 2014 and December 2014 in the Jacksonville, FL study area.

2. Summary of Jacksonville Aerial Surveys

This document is an annual progress report to the U.S. Department of the Navy on aerial surveys conducted in the offshore waters of Jacksonville, Florida, between January 2014 and December 2014. Figures and tables cited in this report are found in **Appendices A and B**, respectively. The goal was to survey the entire site (10 tracklines) twice per calendar month, which was achieved in March, May and September, when 20 tracklines were flown, and February when 26 tracklines were flown. In July 18 tracklines, in June and August 16 tracklines, in October 14 tracklines, and in January 12 tracklines were flown. During the months of April, November, and December, no surveys were conducted due to unfavorable weather conditions or complications with the aircraft. A total of 162 tracklines covering 13,603 kilometers (km) were surveyed across nine months.

A total of 121 sightings of 1,289 cetaceans were recorded while on effort in the study area. Seven species of cetaceans were observed while on effort including: bottlenose dolphin (*Tursiops truncatus*; 55 sightings of 411 individuals), Atlantic spotted dolphin (*Stenella frontalis*; 42 sightings of 722 individuals), Risso's dolphin (*Grampus griseus*; four sightings of 70 individuals), short-finned pilot whale (*Globicephala macrorhynchus*; two sightings of 25 individuals), rough-toothed dolphin (*Steno bredanensis*; one sightings of 20 individuals), humpback whale (*Megaptera novaeangliae*; one sighting of one individual), and sperm whale (*Physeter macrocephalus*; one sighting of one individual). During 15 sightings (totaling 44 individuals), dolphin species identity could not be established with 100 percent certainty (i.e., "unidentified delphinids"). Seven off-effort sightings were recorded. These included three sightings of North Atlantic right whales (*Eubalaena glacialis*) (three single individuals and one mom/calf pair); one sighting of Risso's dolphin (10 individuals), two sightings of bottlenose dolphins (13 individuals) and one sighting of unidentified delphinids (two individuals). These off-

effort sightings are included in species sighting maps and tables but are excluded from all other calculations. Cetacean sighting rates varied across months with peaks in February and June.

A total of 351 sea turtles were recorded during the study period. Of these individual sea turtle sightings, 296 were identified as loggerheads (*Caretta caretta*), 32 as leatherbacks (*Dermochelys coriacea*), and 23 as “unidentified sea turtles.” Sea turtles were detected during each day of survey effort, with highest abundances observed in May and July.

As has been demonstrated in earlier reports and in other aerial survey studies, sightings decrease dramatically as the Beaufort Sea State (BSS) increases (e.g., Gómez de Segura et al. 2006, DeMaster et al. 2001, McAlarney et al. 2013). Effort corrected cetacean and sea turtle sightings were higher in BSS of 1 and 2 than in $BSS \geq 3$.

In addition to cetaceans and sea turtles, other pelagic marine vertebrates including ocean sunfish and multiple species of sharks and rays were observed. Military, commercial, and recreational vessel traffic was also recorded inside the survey area.

3. Methods – Survey Design and Logistics

The University of North Carolina Wilmington provided experienced aerial observers and contracted Orion Aviation, Siler City, North Carolina, to provide planes and certified pilots. Surveys were conducted using National Oceanic and Atmospheric Administration – Southeast Regional Minimum Aircraft and Crew Provisions Guidelines, which require that aircraft are Code of Federal Regulations Part 135 certified and that pilots have demonstrated experience working below 305 meters in support of biological observational studies. Surveys were flown in a Cessna 337 Skymaster, at 305 meter (m) altitude and 185 km/hour speed, with a pilot, co-pilot and two observers. Each observer wore a Nomex ® fire retardant suit, a Switlik ® inflatable life jacket, a personal emergency positioning beacon (EPIRB), as well as additional safety equipment. An inflatable life raft, plane emergency positioning beacon, and satellite phone were also onboard at all times.

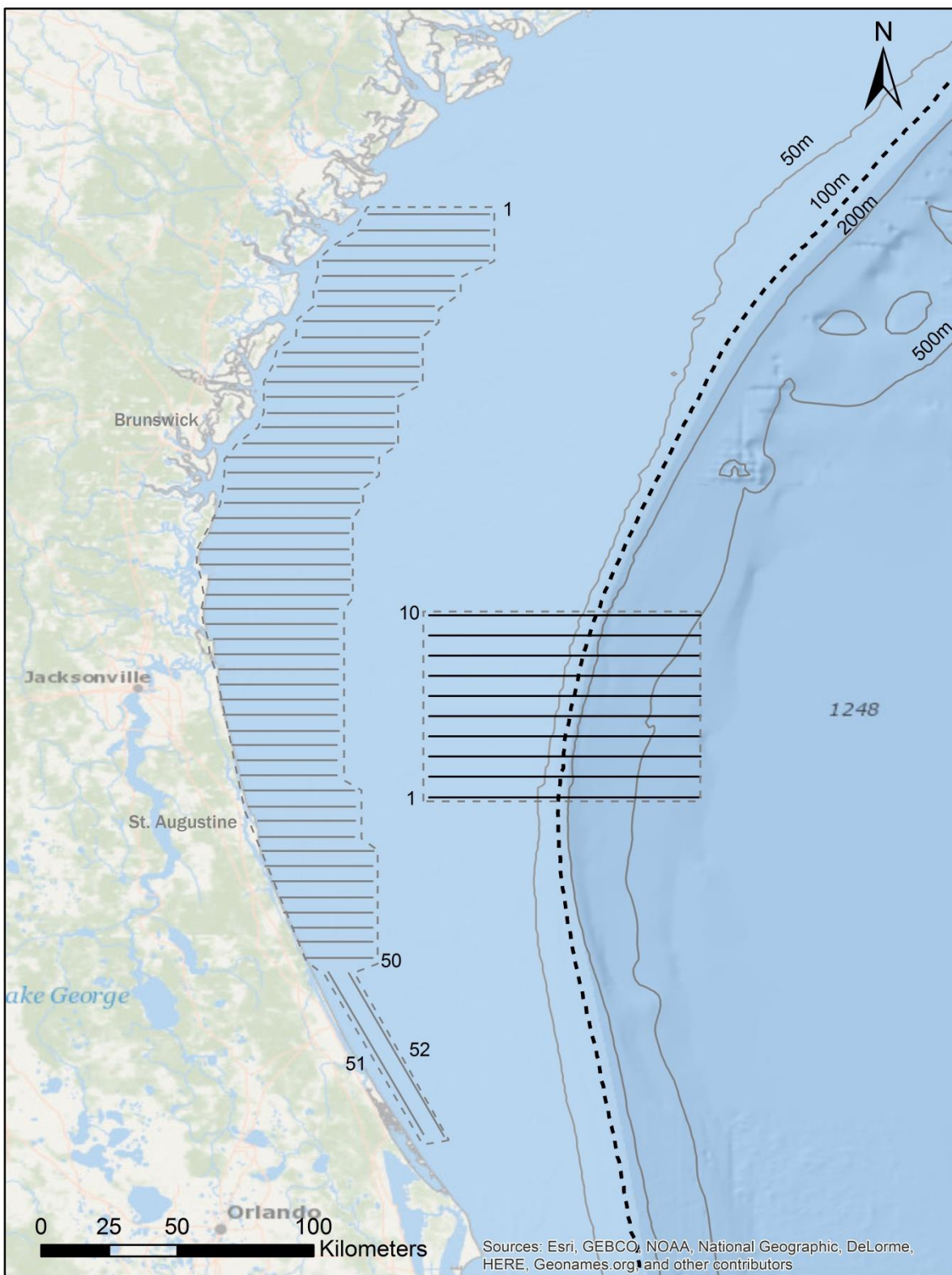
The Jacksonville offshore survey area consists of ten 86-km long tracklines spaced 7.4 km apart covering 5,727 square kilometers (**Table 1, Figure 1**). The site is located offshore of the primary calving grounds for the critically endangered North Atlantic right whale (*Eubalaena glacialis*), which is located off the coast of the southeastern United States (reviewed in Waring et al. 2014, but see Foley et al. 2011). Aerial Early Warning System (EWS) surveys have been conducted in northern Florida and southern Georgia for the past 17 years to warn mariners in real time about the presence of right whales in the region. These surveys are conducted on a daily basis, weather permitting, from December through March. Aerial survey effort in the Jacksonville offshore survey area provided additional coverage, both of the surrounding geographic region and during the months preceding and following the EWS surveys. In past years, this effort resulted in a number of ancillary right whale sightings that augment inshore activity.

1 **Table 1. Coordinates for trackline end points for the Jacksonville, Florida survey area.**

Transect Line	Eastern Waypoint		Western Waypoint	
Line	Latitude	Longitude	Latitude	Longitude
1	29.965011	-79.801416	29.965011	-80.700000
2	30.031263	-79.801416	30.031263	-80.700000
3	30.099694	-79.801416	30.099694	-80.700000
4	30.165763	-79.801416	30.165763	-80.700000
5	30.232227	-79.801416	30.232227	-80.700000
6	30.299477	-79.801416	30.299477	-80.700000
7	30.365152	-79.801416	30.365152	-80.700000
8	30.432797	-79.801416	30.432797	-80.700000
9	30.198866	-79.801416	30.198866	-80.700000
10	30.566233	-79.801416	30.566233	-80.700000

2 Safety and communication protocols for transiting through the EWS areas were established in
3 January 2009 when offshore survey effort began. The offshore survey team talked with
4 researchers from the Florida Wildlife Service prior to the start of EWS surveys. The protocols
5 outlined: coordination between survey team leaders on the morning of a survey, plane-to-plane
6 communication at the start of an aerial survey and the maintenance of a 1,000-m altitude for the
7 offshore survey plane while transiting through the EWS area between December and March.
8 The protocols also established the 9.3-km “buffer zone” between the western margin of the
9 offshore survey area and the eastern margin of the EWS surveys (**Figure 1**). We have
10 maintained these safety and communication protocols throughout the reporting period.

11 All aerial surveys were based out of the local Fixed-base Operator in Fernandina Beach,
12 Florida. Prior to an aerial survey, pilots with Orion aviation would contact Fleet Area Control and
13 Surveillance Facility, Jacksonville (FACSFAC Jax) to get event codes for passage out of and
14 into U.S. territorial waters.



1
2 Figure 1. Tracklines 1-10 that comprise the Jacksonville, Florida survey site along with the EWS
3 survey lines.

4. Results

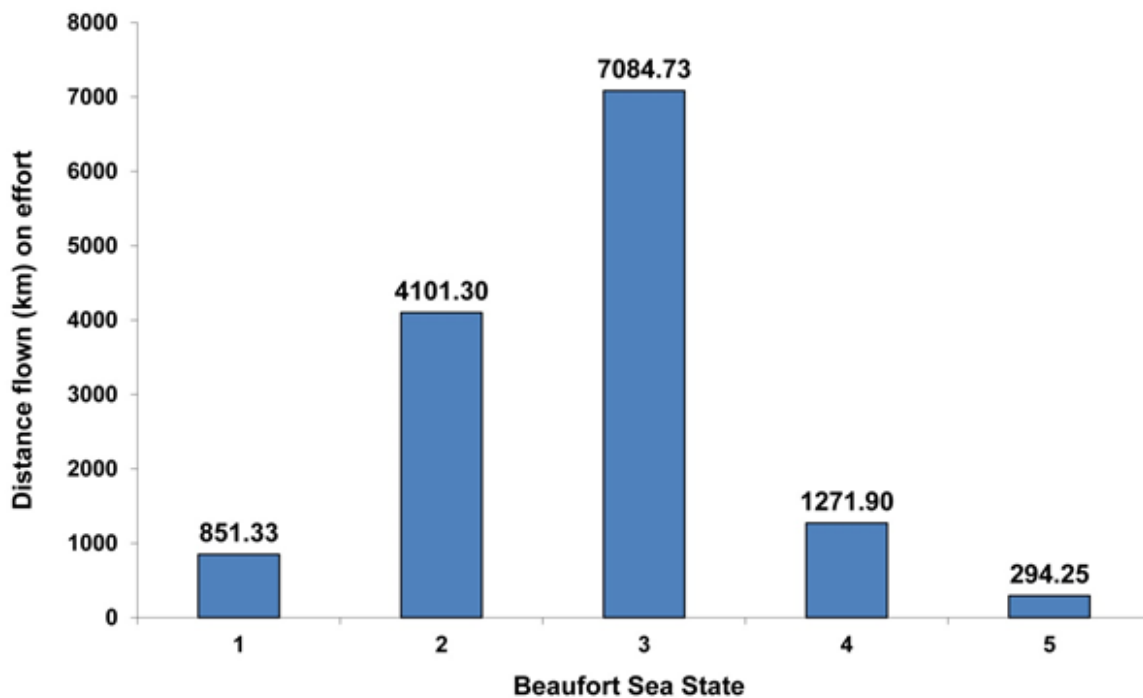
A total of 162 tracklines comprising 13,603 km were surveyed during the 12-month reporting period from January 2014 through December 2014. Coverage of at least 12 tracklines was achieved in nine of 12 months. Unfavorable survey conditions and complications with the planes precluded surveys from being conducted during the other three months (**Table 2**).

Table 2. Tracklines, km flown, and Hobbs hours during aerial surveys of the Jacksonville, Florida survey area from January 2014 to December 2014. Trackline numbers are listed in the order in which they were flown.

Date	Tracklines Flown AM	Tracklines Flown PM	Total km Flown	Hobbs Hours
20-Jan-2014	10 to 5	4 to 1	849.8	7.5
21-Jan-2014	10 & 9	NA	164.7	1.7
16-Feb-2014	10 to 7	6 to 3	674.1	6.4
17-Feb-2014	1,2, 7 to 10	6 to 3	818.2	8.1
18-Feb-2014	3 to 6, 1, 2	10 & 9	661.5	6.1
14-Mar-2014	5 to 10	1 to 4	844.2	7.0
15-Mar-2014	10 to 5	1 to 4	857.0	7.2
7-May-2014	10 to 5	4 to 1	849.4	8.7
8-May-2014	5 to 10	4 to 1	851.0	7.8
25-Jun-2014	10 to 5	4 to 1	818.3	7.5
26-Jun-2014	1 to 6	NA	507.0	4.0
10-Jul-2014	5 to 10	4 to 1	832.2	7.1
11-Jul-2014	10 to 5	4 & 3	624.4	5.7
9-Aug-2014	5 to 10	1 to 4	853.8	7.4
10-Aug-2014	1 to 6	NA	514.9	4.3
11-Sep-2014	10 to 5	4 to 1	828.7	7.2
12-Sep-2014	5 to 10	1 to 4	852.7	6.7
21-Oct-2014	5 to 10	1 to 4	858.2	6.7
22-Oct-2014	10 to 7	NA	344.0	2.8
19 days	162 tracklines		13603.5 km	119.9 hr

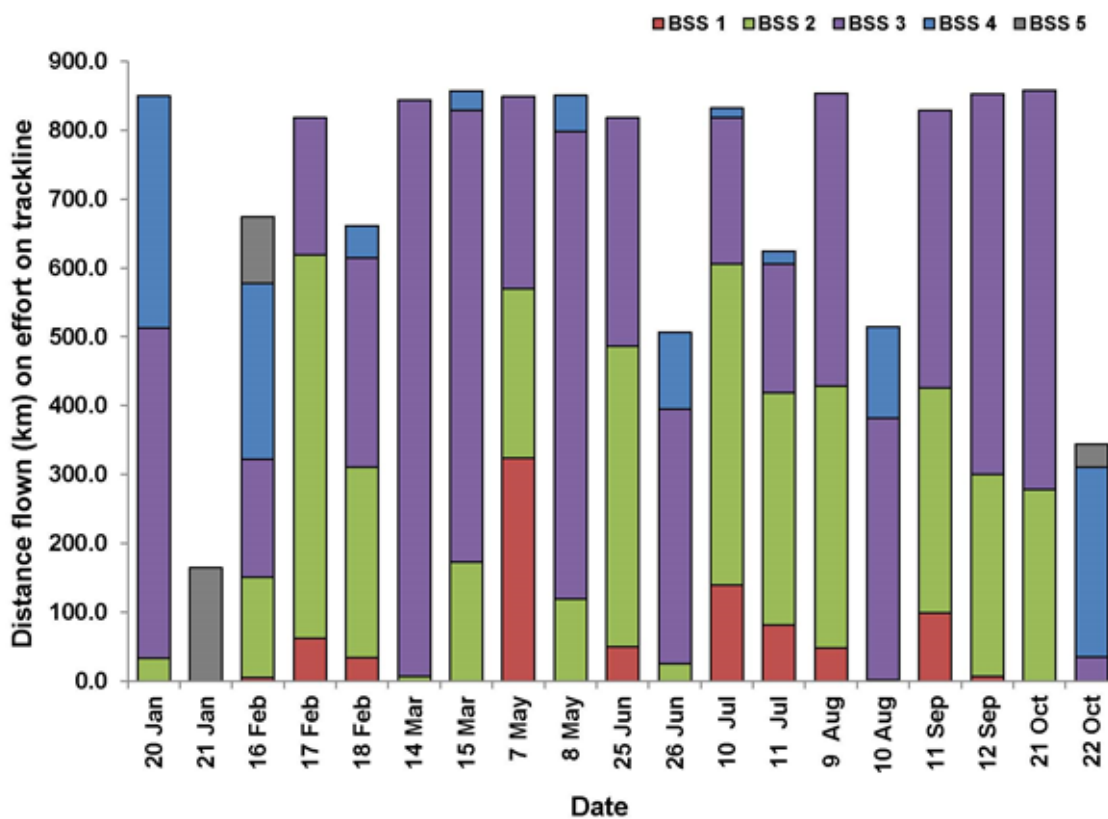
A weighted average BSS value was calculated each survey month to compare conditions across time. The weighted average was calculated by taking the distance flown at each sea state multiplied by the BSS number (i.e., BSS 1 distances would be multiplied by 1). These values were summed and divided by the total distance flown that month. Survey effort was terminated when BSS values persisted above 4. Survey conditions ranged from BSS 1 to 5, with the majority of the surveys flown in BSS 3 (52 percent) (**Figures 2a-c**). Cetacean sighting rates dropped off dramatically at BSS greater than 3. Lower sighting rates in BSS 1 and 2 are likely the result of limited survey time spent in these conditions rather than decreased detection of cetaceans (**Figures 3a-c**).

The mean sighting distance for all cetacean sightings was 0.69 km with greater than 89 percent of sightings occurring within 1.2 km of the trackline (**Figure 4a**). The mean sighting distance varied less than 0.23 km across the BSS values recorded (**Figure 4b**). Average sighting distances were calculated after removing a single outlier (2.06 km from trackline) which was defined as a value in excess of three standard deviations from the mean.



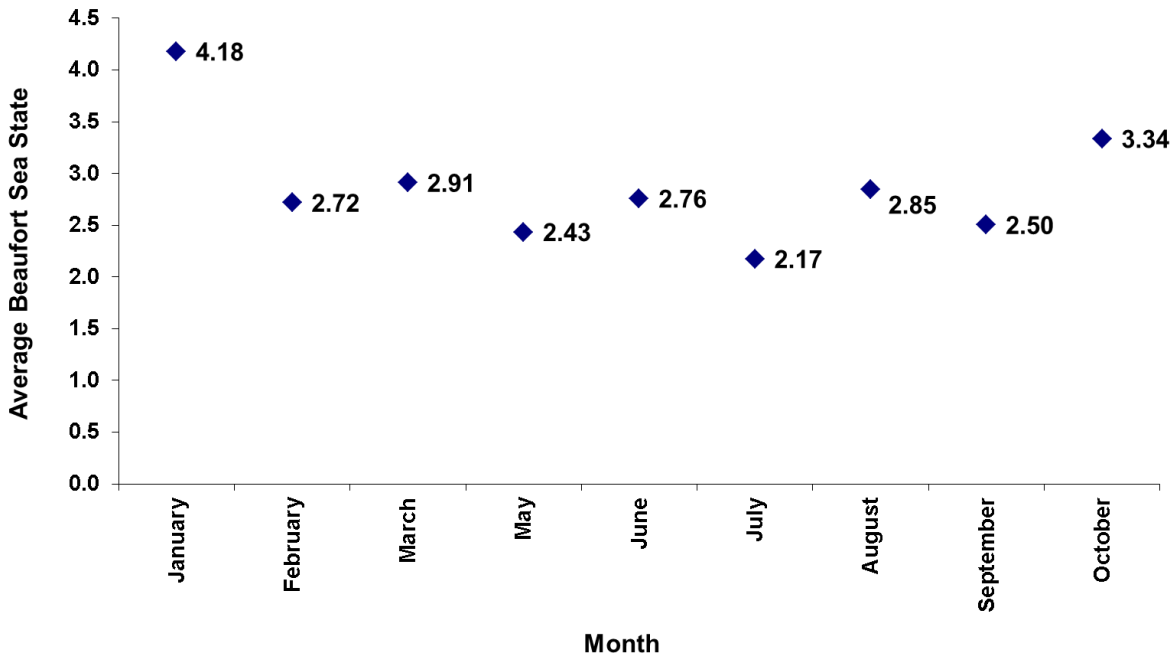
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2 Figure 2a. Total distance surveyed per Beaufort Sea State from January 2014 to December 2014
3 during aerial surveys in the Jacksonville, Florida survey area.

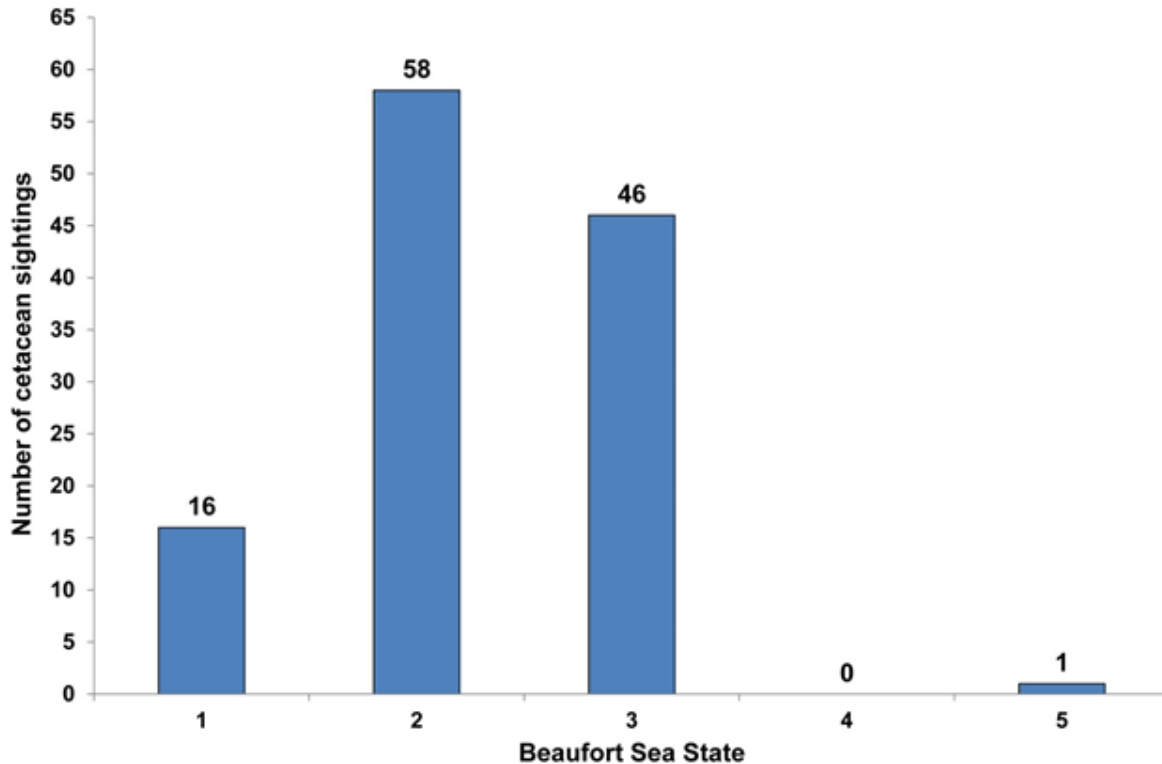


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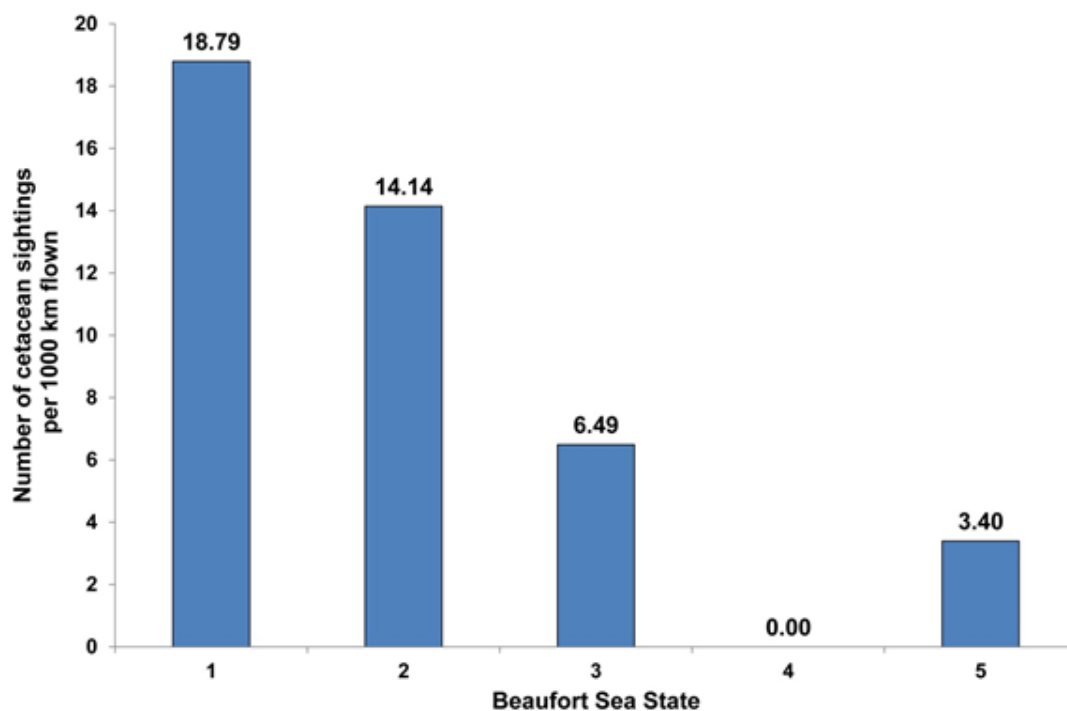
1 Figure 2b. Effort by Beaufort Sea State for each survey day from January 2014 to December 2014
2 during aerial surveys in the Jacksonville, Florida survey area.



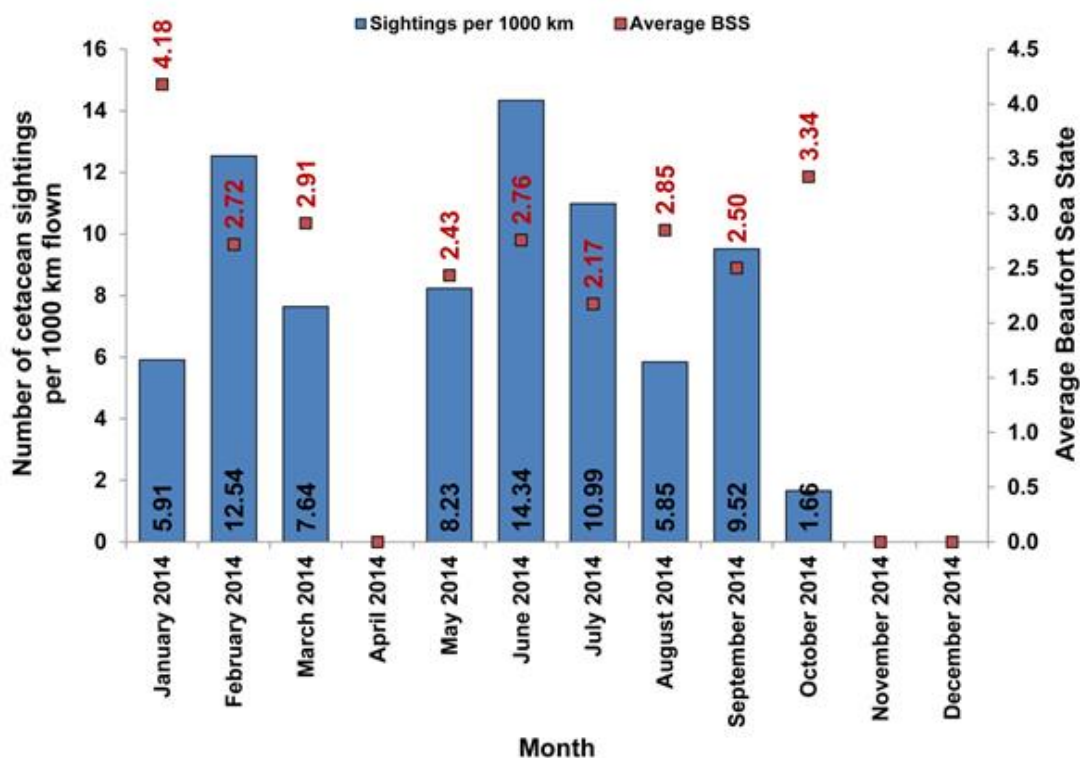
3
4 Figure 2c. Average BSS for each month from January 2014 to December 2014 during aerial
5 surveys in the Jacksonville, Florida survey area. Values were calculated using the formula
6 $\text{AvgBSS} = [(\text{Distance @ BSS } 1 \times 1) + (\text{Distance @ BSS } 2 \times 2) \dots / \text{Total distance flown that day}]$.



1 Figure 3a. Number of cetacean sightings per BSS category from January 2014 to December 2014
2 during aerial surveys in the Jacksonville, Florida survey area.

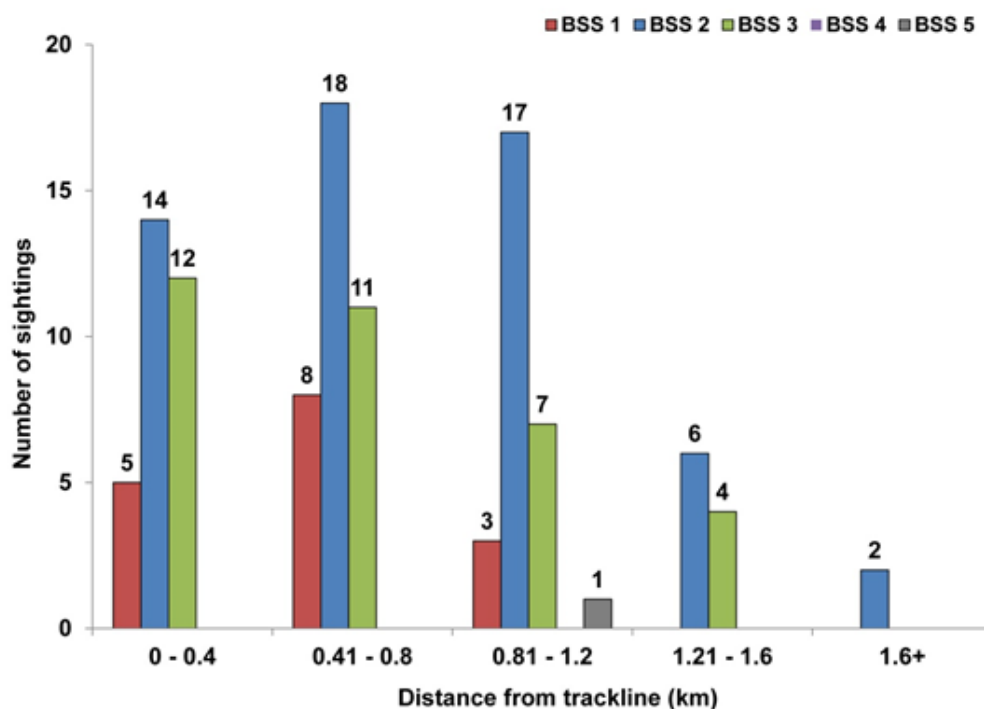


3
4 Figure 3b. Cetacean sightings per 1,000 km flown by BSS category from January 2014 to
5 December 2014 during aerial surveys in the Jacksonville, Florida survey area.

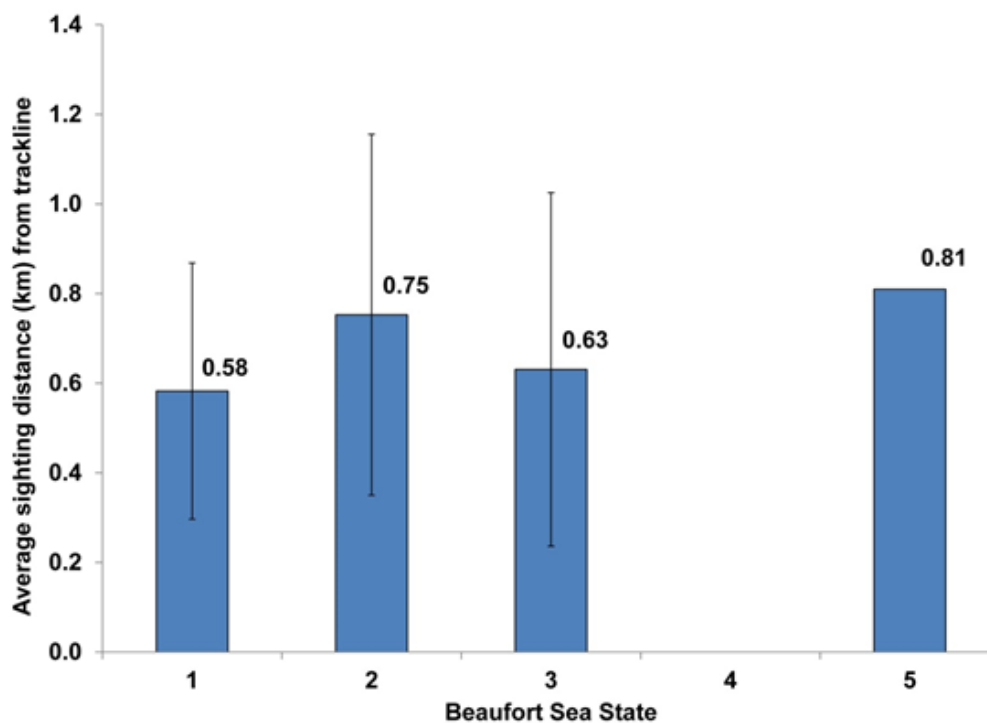


6

1 Figure 3c. Cetacean sightings per 1,000 km surveyed and the average BSS per month from
2 January 2014 to December 2014 during aerial surveys in the Jacksonville, Florida survey area.



3
4 Figure 4a. Sighting distances by BSS for 108 of 121 on-effort cetacean sightings from January
5 2014 to December 2014 during aerial surveys in the Jacksonville, Florida survey area.



6

Figure 4b. Average sighting distances by BSS for 108 of 121 on-effort cetacean sightings from January 2014 to December 2014 during aerial surveys in the Jacksonville, Florida survey area. Error bars denote standard deviation for each category.

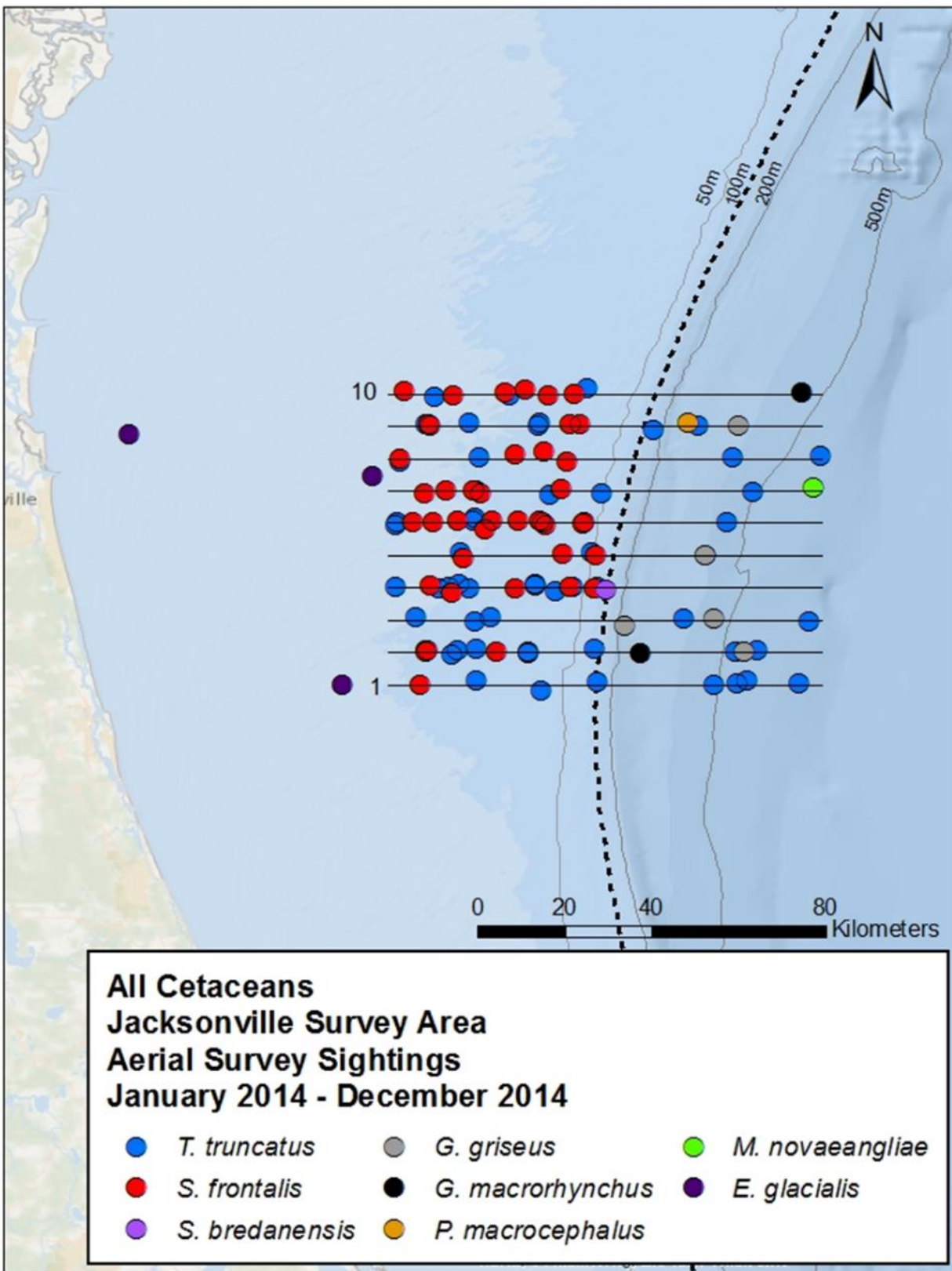
4.1 Marine Mammal Sightings

A total of 121 sightings of 1,289 individual cetaceans, representing seven species, were observed while on effort during the reporting period (**Table 3, Figure 5**). Two endangered species, humpback and sperm whale, were encountered on-effort inside the study area. The single humpback whale was observed on the eastern end of trackline 7 on 17 February, while the single sperm whale was observed just east of the 200-m isobath on trackline 9 on 21 January. There were seven off-effort sightings, three of which were the critically endangered North Atlantic right whale (*Eubalaena glacialis*). Two of the off-effort right whale sightings occurred on 20 January – one sighting of two individuals occurred just west of trackline 1, one sighting was of a mom/calf pair 16.7 km off Mayport, Florida. On 16 February, a sighting of an entangled right whale occurred just west of tracklines 7 and 8. There was also one off-effort sighting of Risso's dolphins, two off-efforts sightings of bottlenose dolphins and one off-effort sighting of an unidentified delphinid. A sighting was considered off-effort if it occurred while transiting to or from the survey area or between tracklines. Any cetaceans the survey team encountered while investigating a separate sighting cue were also labeled off-effort. If two species were seen associated with the same sighting cue both were considered on-effort. The off-effort sightings are included in the tables and maps for each species but are excluded from any calculations. Information on individual sighting summaries are in **Appendices C, D, and E**. Daily sightings are summarized in **Appendix D**.

1 **Table 3. Total number of sightings and individuals for each species by month from January 2014 to December 2014 for the Jacksonville,**
2 **Florida survey area.**

		2014												Total
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
<i>Tursiops truncatus</i>	Sightings	2	13	5		8	14	5	3	5				55
	# of individuals	43	120	21		64	83	39	13	23				406
<i>Stenella frontalis</i>	Sightings	2	11	7		4	2	7	3	6				42
	# of individuals	95	111	91		98	44	85	146	52				722
<i>Grampus griseus</i>	Sightings							1		2	1			4
	# of individuals							3		39	28			70
<i>Globicephala macrorhynchus</i>	Sightings							1	1					2
	# of individuals							10	15					25
<i>Steno bredanensis</i>	Sightings						1							1
	# of individuals						20							20
<i>Megaptera novaeangliae</i>	Sightings		1											1
	# of individuals		1											1
<i>Physeter macrocephalus</i>	Sightings	1												1
	# of individuals	1												1
Unidentified Delphinid	Sightings	1	2	1		2	2	2	1	3	1			15
	# of individuals	1	2	5		9	6	4	3	11	3			44
	<i>Total sightings</i>	6	27	13	0	14	19	16	8	16	2	0	0	121
	Total individuals	140	234	117	0	171	153	141	177	125	31	0	0	1289
<i>Caretta caretta</i>	Sightings	1	49	24		36	31	32	31	27	15			246
	# of individuals	1	57	25		50	39	39	33	36	16			296
<i>Dermochelys coriacea</i>	Sightings		1	2		2	2	13	2	8				30
	# of individuals		1	2		2	2	15	2	8				32
Unidentified Sea Turtle	Sightings	1	1	1		12	1	3	1					20
	# of individuals	1	1	1		14	1	4	1					23
	<i>Total sightings</i>	2	51	27	0	50	34	48	34	35	15	0	0	296
	Total individuals	2	59	28	0	66	42	58	36	44	16	0	0	351

3



1
2 Figure 5. All cetacean sightings during aerial surveys conducted in Jacksonville, Florida survey
3 area from January 2014 to December 2014.

4.1.1 Dolphins

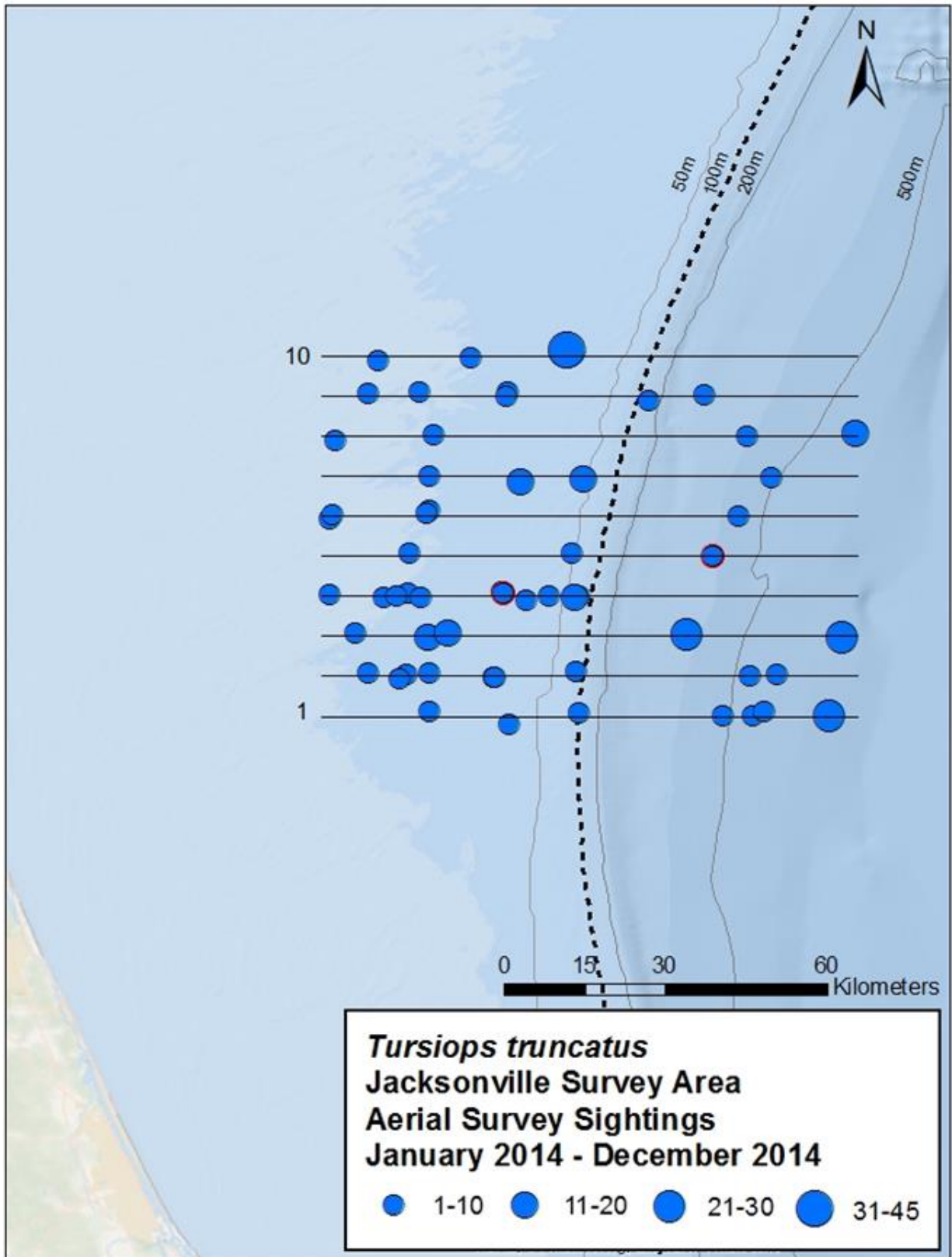
Bottlenose Dolphin (*Tursiops truncatus*)

Bottlenose dolphins were the most frequently encountered cetacean (55 sightings for a total of 411 individuals) (**Table 4**). While group size ranged from 1 to 40 (mean=7.5, standard deviation [Stdv]= 7.7), 87 percent of sightings contained 10 or fewer individuals. Based on the distance from shore (e.g., greater than 34 km), the bottlenose dolphins observed in this study are most likely of the offshore ecotype (Torres et al. 2003). Bottlenose dolphins were encountered throughout the study area and there was no obvious relationship between group size and bathymetry (**Figure 6**). This species was encountered during each month surveyed except October.

Table 4. Bottlenose dolphin (*Tursiops truncatus*) sightings in the Jacksonville, Florida survey area from January 2014 to December 2014. Asterisk denotes off-effort sightings.

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
20-Jan-2014	14:51:27	45	30.103127	-80.489577	3	3	1	90°	18
20-Jan-2014	15:35:03	54	29.966535	-79.853658	1	3	2	90°	25
16-Feb-2014	13:04:06	30	30.295570	-80.686284	6	1	1	90°	2
17-Feb-2014	11:20:13	52	30.425173	-80.677659	8	2	3	60°	1
17-Feb-2014	11:31:46	58	30.503570	-80.622988	9	2	2	90°	6
17-Feb-2014	12:18:46	74	30.576573	-80.291339	10	2	2	60°	40
17-Feb-2014	14:30:57	85	30.308400	-80.521617	6	2	2	90°	2
17-Feb-2014	15:36:20	105	30.237104	-80.553182	5	2	1	70°	3
17-Feb-2014	16:00:52	117	30.162457	-80.276923	4	2	2	90°	17
17-Feb-2014	16:27:59	123	30.102145	-80.091616	3	2	1	80°	30
18-Feb-2014	11:30:37	44	30.034417	-79.939553	2	2	1	60°	7
18-Feb-2014	11:54:50	53	30.034815	-80.559126	2	2	2	90°	1
18-Feb-2014	13:35:20	63	30.563518	-80.452092	10	1	1	60°	4
18-Feb-2014	14:18:28	75	30.500213	-80.392766	9	2	1	90°	6
18-Feb-2014	14:29:37	81	30.506984	-80.536072	9	2	3	100°	1
14-Mar-2014	10:06:57	10	30.300314	-80.003164	6	3	1	90°	2
14-Mar-2014	14:32:00	48	29.965397	-80.029230	1	3	1	60°	8
14-Mar-2014	16:01:02	44	30.167002	-80.269950	4	3	1	100°	2
15-Mar-2014	9:34:20	55	30.501042	-80.060103	9	3	1	90°	6
15-Mar-2014	14:39:18	95	30.036457	-80.624021	2	2	2	60°	3
7-May-2014	9:31:09	7	30.491434	-80.155001	9	3	2	90°	10
7-May-2014	14:17:16	55	30.158679	-80.357500	4	1	1	90°	3
7-May-2014	15:30:32	73	30.038285	-80.520399	2	1	2	100°	1
7-May-2014	15:41:22	79	30.039079	-80.274399	2	1	2	90°	6
8-May-2014	14:06:10	46	30.163062	-80.535132	4	3	3	60°	8
8-May-2014	14:38:22	54	30.095914	-79.831719	3	3	2	110°	21

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #	
8-May-2014	15:36:20	65	30.032863	-79.985110	2	3	2	45°	9	
8-May-2014	16:15:12	73	29.973098	-79.960365	1	3	4	60°	6	
25-Jun-2014	10:11:49	17	30.433313	-79.990394	8	2	1	90°	3	
25-Jun-2014	10:21:20	21	30.437774	-79.809363	8	3	2	60°	18	
25-Jun-2014	14:15:40	42	30.168025	-80.687420	4	1	1	90°	3	
25-Jun-2014	14:24:43	51	30.165579	-80.575389	4	1	1	60°	9	
25-Jun-2014	14:34:02	57	30.173651	-80.397908	4	1	2	90°	6	
25-Jun-2014	15:17:31	71	30.096132	-80.522046	3	2	1	120°	12	
25-Jun-2014	15:24:53	77	30.103457	-80.644324	3	2	1	90°	4	
25-Jun-2014	15:34:50	84	30.026829	-80.571601	2	2	1	90°	3	
25-Jun-2014	15:41:44	89	30.031352	-80.412676	2	2	1	90°	2	
25-Jun-2014	16:16:38	102	29.966992	-79.979873	1	1	1	90°	5	
25-Jun-2014	16:33:27	107	29.951259	-80.386714	1	2	1	120°	2	
25-Jun-2014	16:45:40	112	29.972734	-80.520618	1	2	1	60°	4	
26-Jun-2014	9:53:52	11	30.031046	-80.411779	2	2	1	90°	8	
26-Jun-2014	12:02:31	37	30.304383	-80.525212	6	3	1	60°	4	
10-Jul-2014	10:15:40	26	30.356961	-80.367100	7	2	2	60°	18	
10-Jul-2014	10:22:45	30	30.360617	-80.262277	7	2	2	100°	12	
10-Jul-2014	11:22:48	51	30.505971	-80.388857	9	2	2	90°	3	
11-Jul-2014	11:49:14	47	30.237142	-80.282910	5	2	3	90°	3	
11-Jul-2014	14:03:43	57	30.165175	-80.321299	4	2	2	90°	3	
9-Aug-2014	14:43:09	55	29.970883	-80.27112	1	2	3	90°	6	
10-Aug-2014	11:18:05	22	30.171305	-80.556629	4	3	1	90°	2	
10-Aug-2014	11:24:15	26	30.163233	-80.597502	4	3	2	60°	5	
11-Sep-2014	9:01:28	5	30.559103	-80.606016	10	2	2	100°	3	
11-Sep-2014	10:10:16	26	30.435404	-80.514291	8	2	2	90°	5	
11-Sep-2014	10:38:56	36	30.363574	-79.949841	7	3	2	90°	7	
11-Sep-2014	10:59:15	43	30.366777	-80.519971	7	1	1	100°	4	*
11-Sep-2014	11:59:41	66	30.233112	-80.046093	5	3	2	90°	4	
12-Sep-2014	9:45:23	17	30.301738	-80.683310	6	2	1	100°	4	*
12-Sep-2014	15:26:30	66	30.170614	-80.396851	4	3	1	90°	9	



1

2 Figure 6. Bottlenose dolphin (*Tursiops truncatus*) sightings indicating group size. Red outlines
 3 denote off-effort sightings.

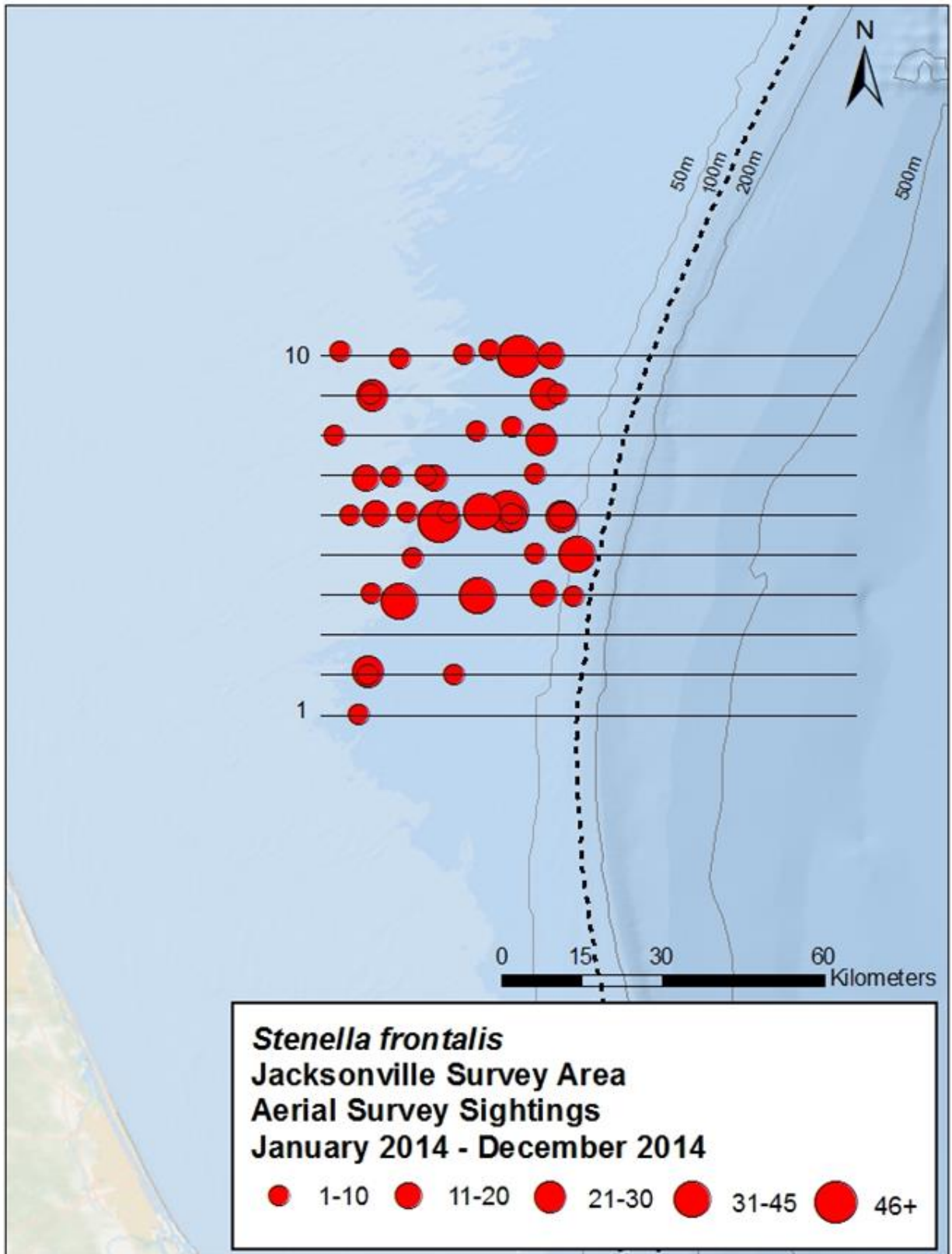
Atlantic Spotted Dolphin (*Stenella frontalis*)

The Atlantic spotted dolphin was the second most frequently sighted, and numerically the most abundant, species encountered in the survey area and were seen in every month surveyed, except October (42 sightings for a total of 722 individuals) (**Table 5**). Group size ranged from 3 to 75 (mean=17.2, Stdv=17.3). This species was encountered predominantly in shallow waters over the continental shelf (**Figure 7**). There are two distinct forms, or ecotypes, of the Atlantic spotted dolphin in the western North Atlantic: a heavily spotted form that typically occurs on the continental shelf and is most often encountered at or within the 200-m isobath, and a less spotted, smaller form that occurs further offshore and around deep island archipelagoes (Perrin et al. 1987, 1994). It is likely, based upon the features observed, that the Atlantic spotted dolphins seen during the present study belong to the continental shelf variety.

Table 5. Atlantic spotted dolphin (*Stenella frontalis*) sightings in the Jacksonville, Florida survey area from January 2014 to December 2014.

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
20-Jan-2014	10:53:50	22	30.304472	-80.389857	6	3	3	45°	50
20-Jan-2014	14:02:53	37	30.164006	-80.440299	4	3	2	90°	45
17-Feb-2014	8:42:32	5	29.964943	-80.636759	1	2	1	60°	7
17-Feb-2014	9:53:57	24	30.365241	-80.525349	7	3	1	90°	10
17-Feb-2014	10:59:40	43	30.424717	-80.333505	8	2	3	90°	25
17-Feb-2014	11:09:52	47	30.446629	-80.378940	8	2	3	90°	5
17-Feb-2014	11:42:01	65	30.501782	-80.326408	9	2	1	90°	30
17-Feb-2014	14:41:48	90	30.301934	-80.381993	6	2	2	90°	6
17-Feb-2014	16:00:52	117	30.162457	-80.276923	4	2	2	90°	6
18-Feb-2014	10:24:27	26	30.303471	-80.487076	6	3	2	60°	3
18-Feb-2014	10:34:10	30	30.299437	-80.651568	6	3	1	90°	6
18-Feb-2014	14:11:44	72	30.502868	-80.304921	9	2	3	90°	10
18-Feb-2014	14:33:56	85	30.502395	-80.618280	9	2	2	100°	3
14-Mar-2014	9:39:00	5	30.232600	-80.272616	5	3	2	100°	40
14-Mar-2014	10:23:48	10	30.300494	-80.295558	6	3	2	90°	12
14-Mar-2014	15:11:00	55	30.031805	-80.623396	2	3	2	110°	6
15-Mar-2014	10:40:13	66	30.368129	-80.342820	7	3	2	90°	5
15-Mar-2014	11:52:56	78	30.234678	-80.342680	5	3	2	90°	4
15-Mar-2014	14:24:23	91	30.033670	-80.478840	2	3	2	90°	7
15-Mar-2014	15:41:30	117	30.167928	-80.327823	4	2	1	90°	17
7-May-2014	9:49:08	13	30.499558	-80.615152	9	3	1	90°	22
7-May-2014	11:02:58	31	30.360802	-80.511538	7	2	1	90°	13
7-May-2014	15:12:43	69	30.036456	-80.622383	2	2	1	90°	30

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
8-May-2014	13:57:58	42	30.155164	-80.570616	4	3	3	60°	33
25-Jun-2014	14:21:34	47	30.169166	-80.616415	4	1	2	90°	4
26-Jun-2014	11:54:07	33	30.304369	-80.432763	6	3	1	45°	40
10-Jul-2014	9:41:15	9	30.297361	-80.299824	6	2	1	100°	25
10-Jul-2014	9:49:37	13	30.294865	-80.376758	6	2	2	45°	18
10-Jul-2014	9:58:54	17	30.301411	-80.608566	6	2	1	90°	12
10-Jul-2014	10:59:21	39	30.439794	-80.439207	8	2	2	110°	6
10-Jul-2014	12:07:24	64	30.574607	-80.418908	10	2	3	90°	10
11-Jul-2014	9:10:25	6	30.567396	-80.460601	10	1	1	90°	8
11-Jul-2014	10:49:26	34	30.364667	-80.581839	7	2	1	90°	6
9-Aug-2014	12:10:45	39	30.563541	-80.371384	10	2	2	45°	75
9-Aug-2014	12:39:06	43	30.572835	-80.668421	10	2	2	90°	6
10-Aug-2014	12:23:40	36	30.287077	-80.502722	6	3	3	45°	65
11-Sep-2014	11:11:51	47	30.361248	-80.625622	7	1	1	90°	16
11-Sep-2014	11:24:32	54	30.303606	-80.55741	6	1	3	100°	4
11-Sep-2014	12:23:47	73	30.227093	-80.545556	5	1	1	90°	5
12-Sep-2014	10:48:39	30	30.432361	-80.678475	8	3	1	60°	7
12-Sep-2014	11:43:47	43	30.565767	-80.316411	10	2	1	90°	15
12-Sep-2014	11:57:54	48	30.562035	-80.568452	10	2	1	90°	5



1

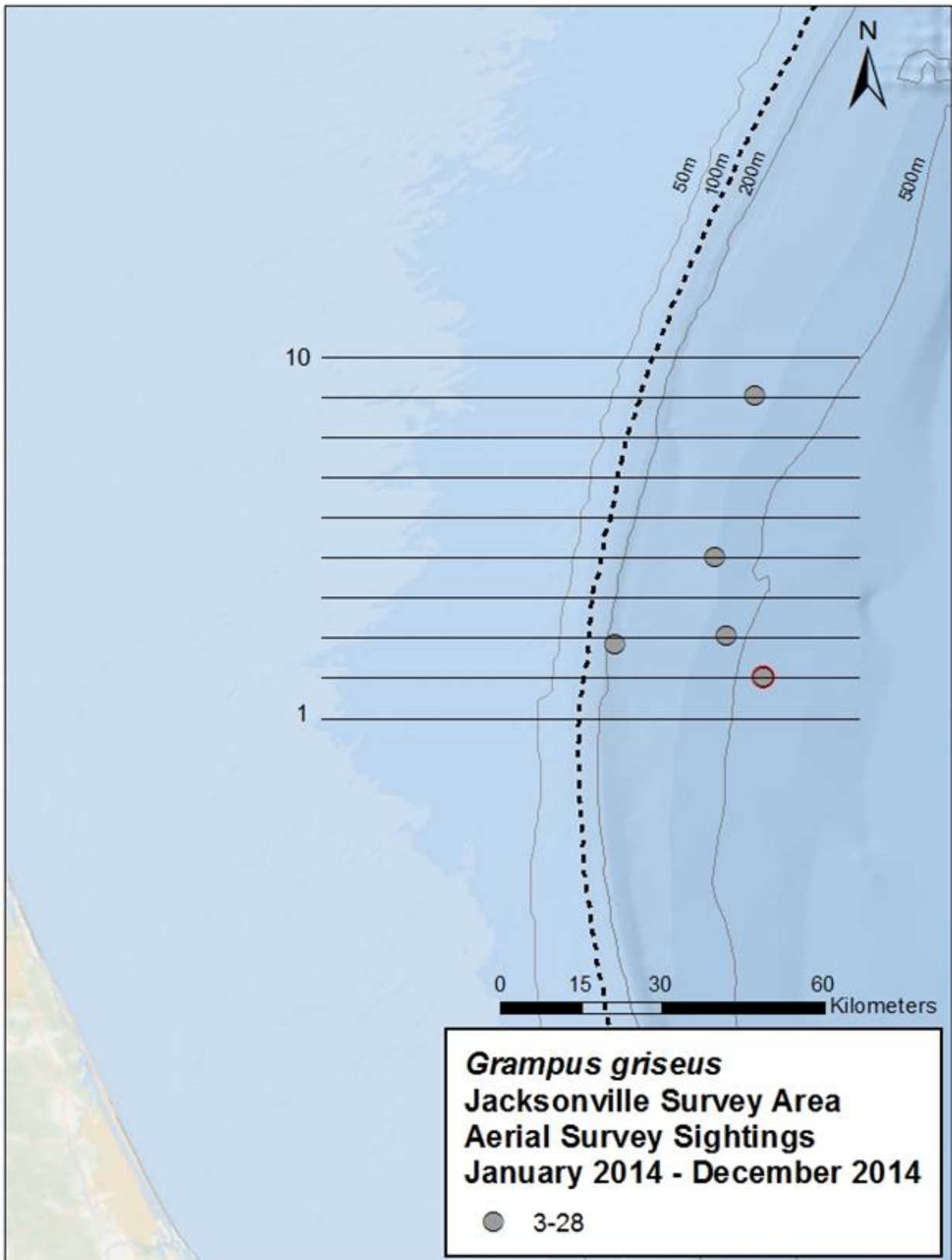
2 Figure 7. Atlantic spotted dolphin (*Stenella frontalis*) sightings indicating group size.

Risso's Dolphin (*Grampus griseus*)

This species was encountered four times for a total of 70 individuals (**Table 6, Figure 8**). Group size for this species ranged from 3 to 28 individuals (mean=17.5, Stdv=12.1). Risso's dolphins were recorded in three of the nine months surveyed, and were only observed in deeper, offshore waters. Risso's dolphin have been found along the mid-Atlantic continental shelf edge year round, with some movement north during spring, summer and fall, and into the mid-Atlantic bight during winter (Waring et al. 2015).

Table 6. Risso's dolphin (*Grampus griseus*) sightings in the Jacksonville, Florida survey area from January 2014 to December 2014. Asterisk denotes off-effort sightings.

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #	
8-May-2014	15:41:06	67	30.033841	-79.965559	2	3	1	90°	10	*
10-Jul-2014	14:42:35	78	30.100698	-80.027906	3	2	2	90°	3	
11-Sep-2014	11:59:41	66	30.233112	-80.046093	5	3	2	90°	27	
12-Sep-2014	11:19:27	36	30.501488	-79.978920	9	3	2	90°	12	
21-Oct-2014	15:15:57	40	30.086575	-80.212188	3	2	2	90°	28	



1

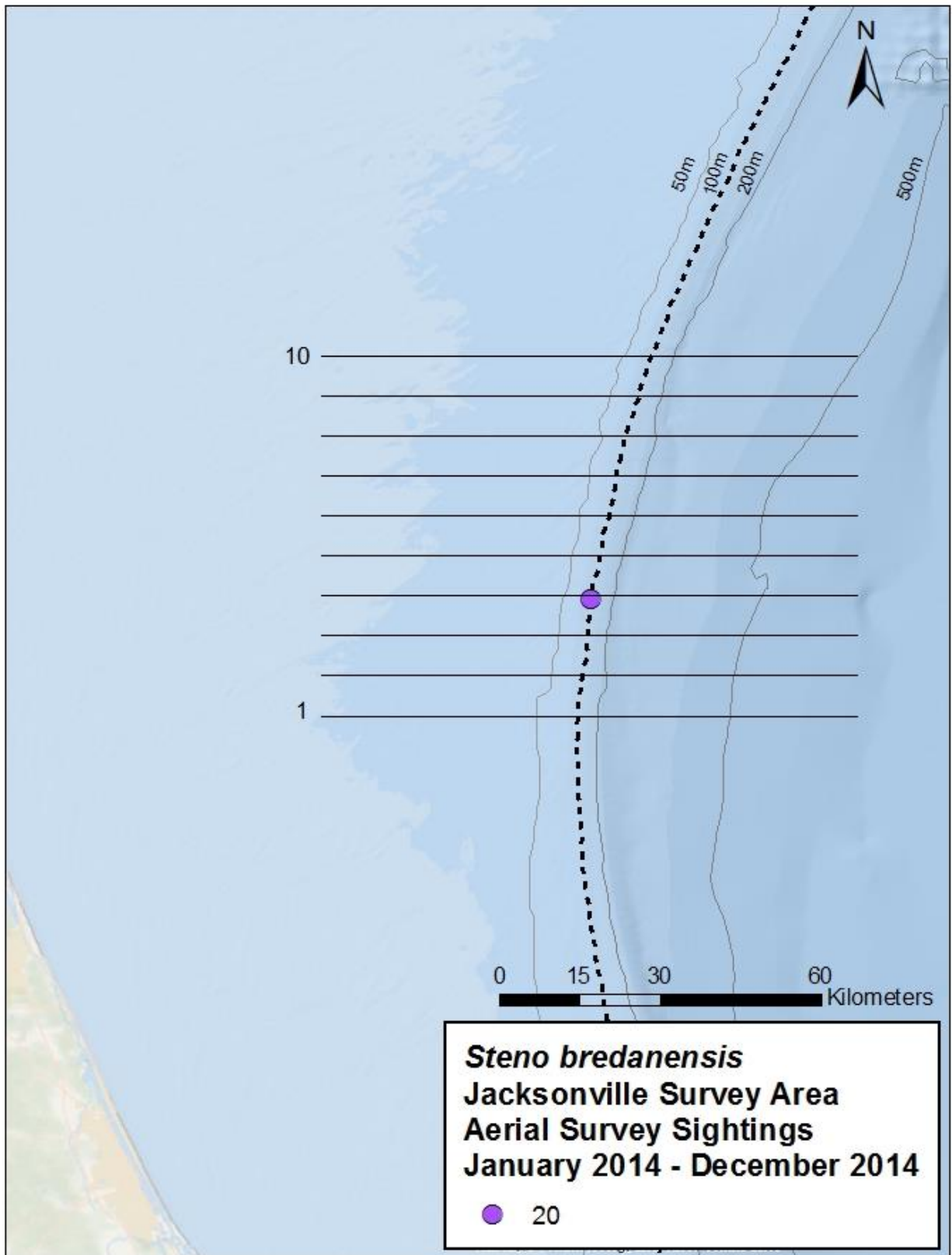
2 Figure 8. Risso's dolphin (*Grampus griseus*) sightings. Red outlines denote off-effort sightings.

1 **Rough-toothed Dolphin (*Steno bredanensis*)**

2 A single sighting of this species occurred in June with a total of 20 individuals (**Table 7**). As in
3 past years, sightings occurred inside of the 100-m isobath in the continental shelf waters
4 (**Figure 9**).

5 **Table 7. Rough-toothed dolphin (*Steno bredanensis*) sighting in the Jacksonville, Florida survey**
6 **area from January 2014 to December 2014.**

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
25-Jun-2014	14:40:38	62	30.159416	-80.252027	4	2	1	90°	20



1

2 Figure 9. Rough-toothed dolphin (*Steno bredanensis*) sighting.

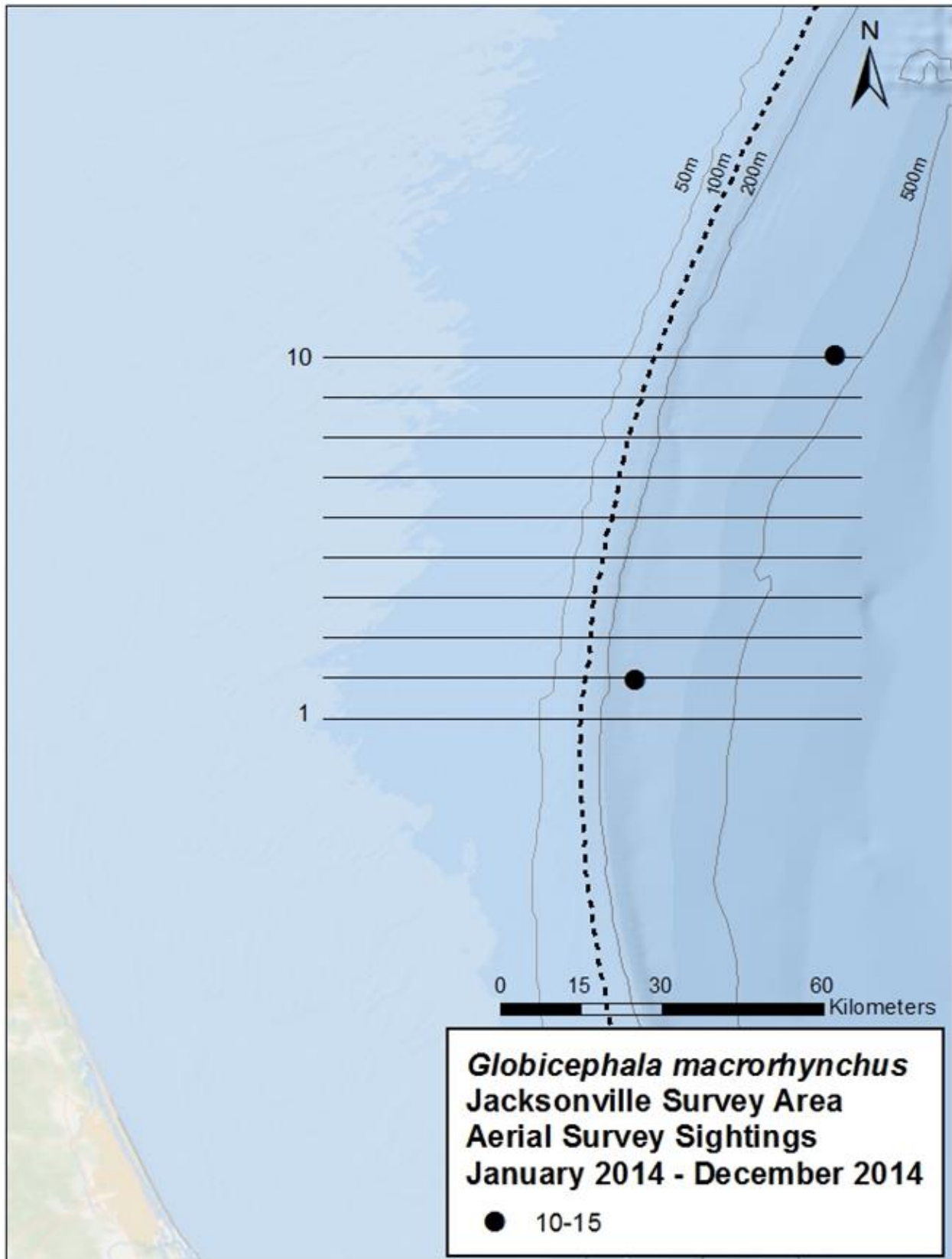
4.1.2 Whales

Short-finned Pilot Whale (*Globicephala macrorhynchus*)

Short-finned pilot whales were encountered twice during the reporting period for a total of 25 individuals (**Table 8**). Sightings of pilot whales in the western North Atlantic occur primarily near the continental shelf break (Waring et al. 2015) as is the case with these sightings (**Figure 10**).

Table 8. Short-finned pilot whale (*Globicephala macrorhynchus*) sightings in the Jacksonville, Florida survey area from January 2014 to December 2014.

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
10-Jul-2014	11:44:30	59	30.568731	-79.847870	10	1	1	90°	10
10-Aug-2014	10:00:07	8	30.028559	-80.181611	2	3	1	90°	15



1

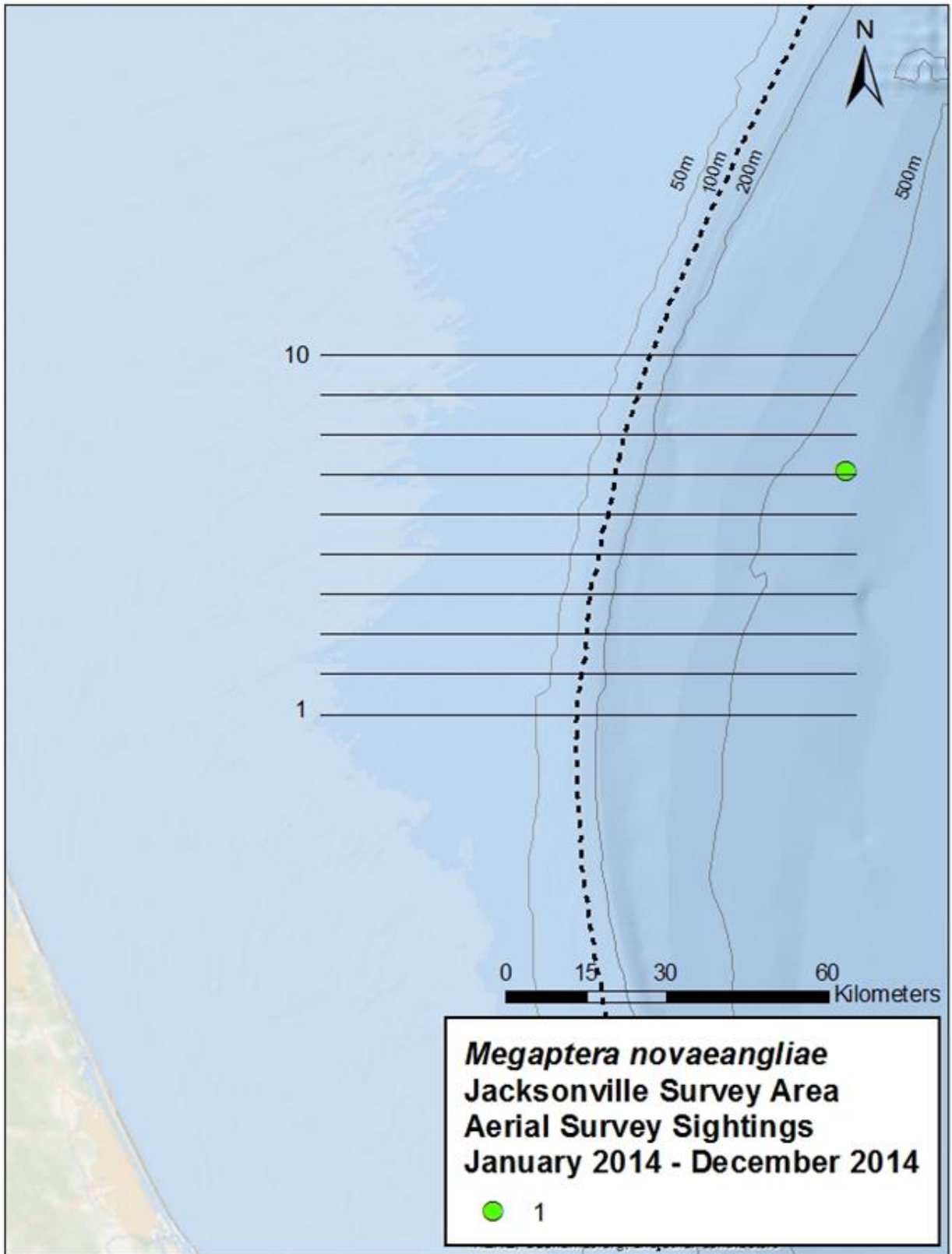
2 Figure 10. Short-finned pilot whale (*Globicephala macrorhynchus*) sightings.

1 **Humpback Whale (*Megaptera novaeangliae*)**

2 A single on-effort sighting of one individual humpback whale was recorded on 17 February, at
3 the east end of trackline 7, just beyond the 500-m isobaths (**Table 9, Figure 11**). The animal
4 was traveling subsurface with regular surfacings, and was tracked for 3 minutes before it made
5 a deep dive.

6 **Table 9. Humpback whale (*Megaptera novaeangliae*) sighting in the Jacksonville, Florida survey**
7 **area from January 2014 to December 2014.**

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
17-Feb-2014	10:20:38	30	30.371350	-79.823069	7	3	2	90°	1



1

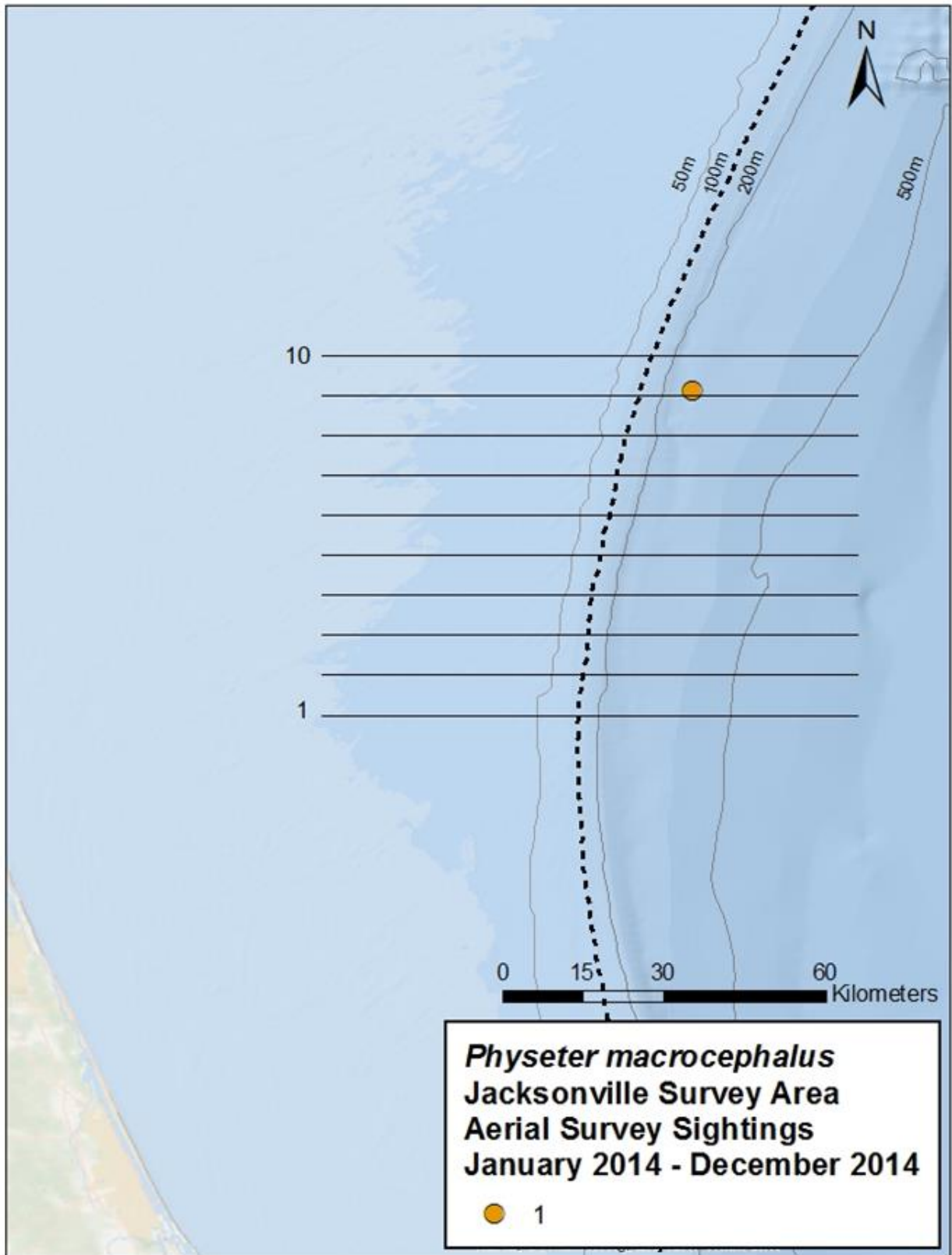
2 Figure 11. Humpback whale (*Megaptera novaeangliae*) sighting.

1 **Sperm Whale (*Physeter macrocephalus*)**

2 One individual was observed on 21 January on the offshore portion of trackline 9 (**Table 10,**
3 **Figure 12**). This sighting was recorded in waters with a bottom depth between 200 and 500 m.
4 This animal was photographed taking several breaths, but was not resighted due to high sea
5 states and winds.

6 **Table 10. Sperm whale (*Physeter macrocephalus*) sighting in the Jacksonville, Florida, survey**
7 **area from January 2014 to December 2014.**

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
21-Jan-2014	9:32	6	30.5061508	-80.083128	9	5	2	90°	1



1

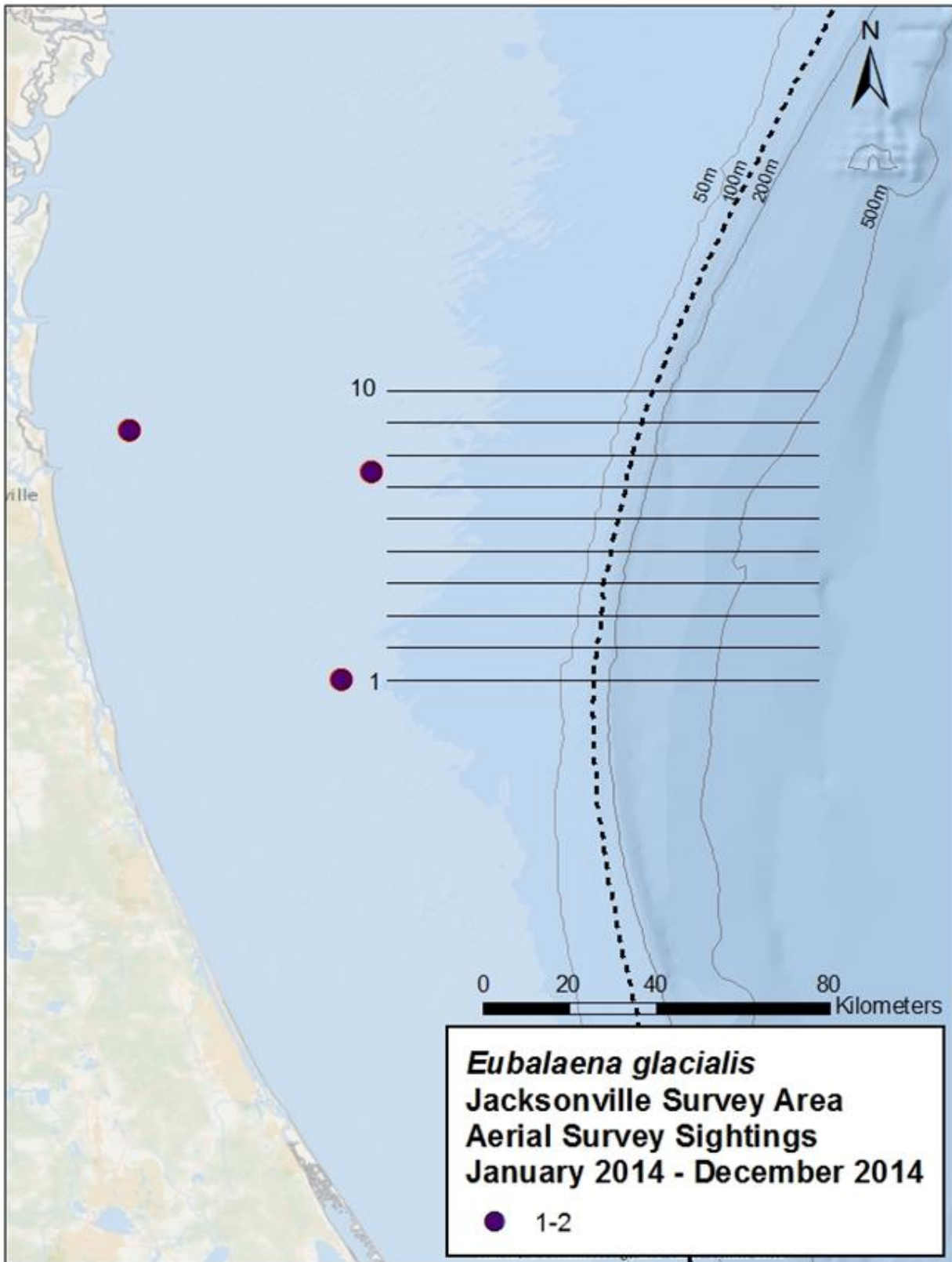
2 Figure 12. Sperm whale (*Physeter macrocephalus*) sighting.

North Atlantic Right Whale (*Eubalaena glacialis*)

Three off-effort sightings of four individuals were made in January and February (**Table 11, Figure 13**). These sightings are described in detail here, given the critically endangered status of this species. Group size ranged from one to two individuals, including a mom/calf pair. On 20 January, a mom/calf pair was sighted inshore approximately 16.7 km off Mayport, Florida, as the plane was coming in to refuel for afternoon flights. The Florida Fish and Wildlife Conservation Commission (FWC) aerial survey teams were also out that day in another location. We were asked to stay with the animals to collect photos and document the condition of the whales. The mother was later identified as Egl #1301, who had been observed earlier that year but not yet with a calf. Later that day, a pair of adult right whales was observed just off the western end of trackline 1 as the surveys were finishing for the day. The survey team reported their location and images to FWC, and the animals were later identified as Egl #1323 (male) and #1425 (female).

Table 11. North Atlantic right whale (*Eubalaena glacialis*) sightings in the Jacksonville, Florida survey area from January 2014 to December 2014. Asterisk denotes off-effort sightings.

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #	Comments
20-Jan-2014	11:56:04	32	30.482727	-81.237584			3	90°	2	Mom / Calf pair - inshore
20-Jan-2014	16:06:08	58	29.965050	-80.796355			3	90°	2	2 Adults - Near range
16-Feb-2014	15:24:03	58	30.397020	-80.734435		1	3	90°	1	Entangled Egl



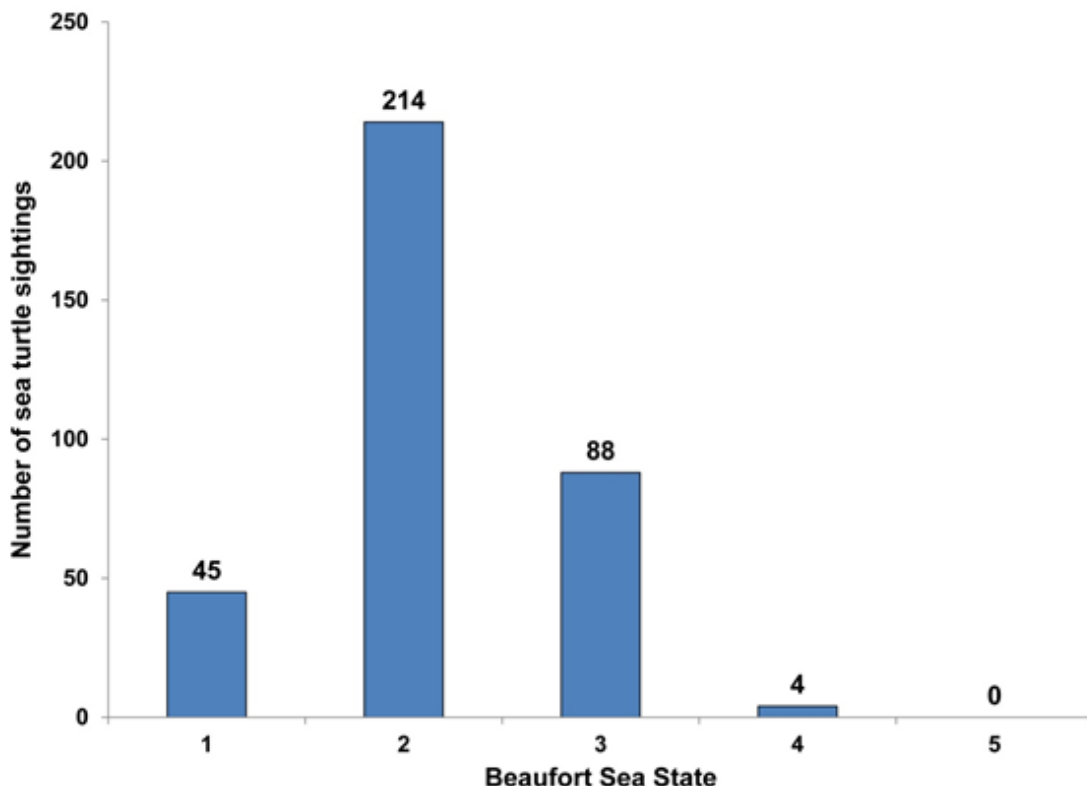
1

2 Figure 13. North Atlantic right whale (*Eubalaena glacialis*) sightings. Red outlines denote off-effort
3 sightings.

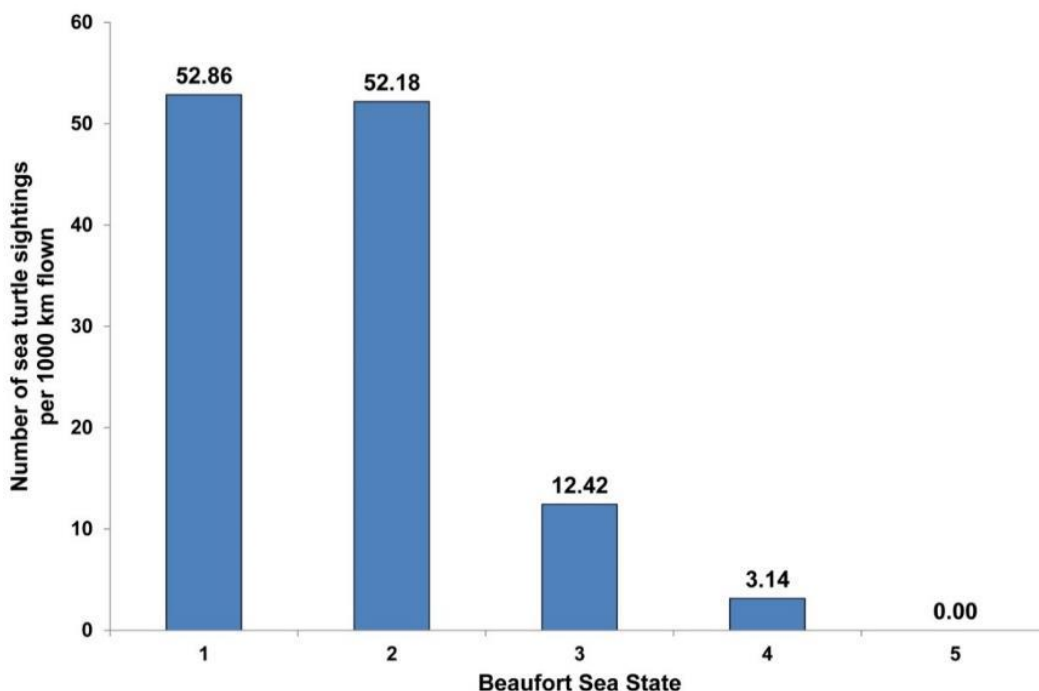
On 16 February, the Duke Marine Laboratory crew, aboard the Research Vessel (R/V) *RT Barber*, spotted a right whale at 15:16, 64.4 km east of Jacksonville, Florida. Efforts were coordinated between both groups to get a visual on the animal and a refined location as it was traveling subsurface. Upon the aerial survey's team arrival to the animal, it was noticed the whale was entangled. The team directed the R/V *RT Barber* and R/V *Stellwagen* to the animal, which was later identified as Egl #4057. The entanglement was wrapped around the rostrum with a knot above the eye and a few hundred feet of line trailing behind the left side of the animal. The aerial survey team called FWC and provided them a location and entanglement information. The Florida Fish and Wildlife Conservation Commission sent a plane to take over documentation of the entangled whale and launched a vessel to attach a telemetry buoy to the animal. The animal was disentangled the following day off Georgia.

4.2 Sea Turtles

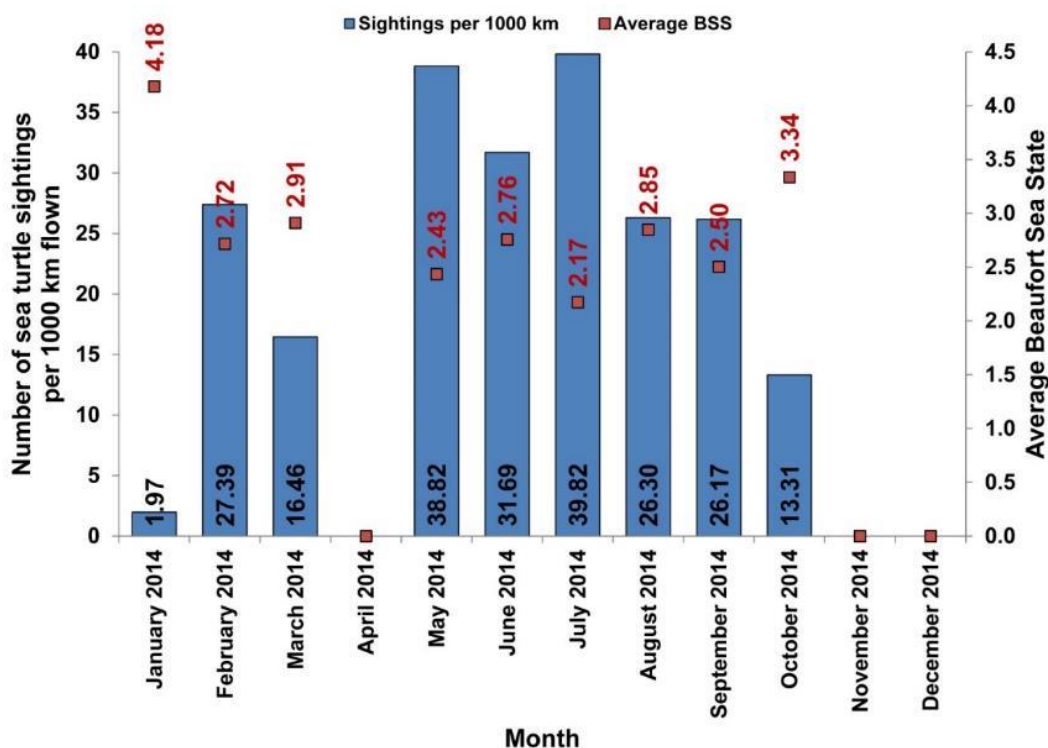
A total of 351 sea turtles were observed during the reporting period (**Tables 12 and 13**). Sighting rates were negatively correlated with BSS, with rates declining at higher sea states (**Figure 14b**). Sea turtles were observed every day of survey effort with the highest sighting rates occurring in May and July (**Figure 14c**). Observation rates ranged from a low of 1.97/1,000 km flown in January to 39.82 /1,000 km in July (**Figure 14c**). Loggerhead sea turtles (*Caretta caretta*) constituted the majority of sea turtles sighted (84.3 percent), followed by leatherback sea turtles (*Dermochelys coriacea*) (9.1 percent). Turtles labeled as unidentified (6.6 percent of sightings) were typically either of small size, submerged, or too far away for the observers to make an accurate identification to species. Sea turtle species are listed below in order of decreasing number of sightings (i.e., most commonly sighted species first).



1 Figure 14a. Total number of sea turtle sightings by BSS category in the Jacksonville, Florida
2 survey area from January 2014 to December 2014.



3
4 Figure 14b. Sea turtle sightings per 1000 km flown by BSS category in the Jacksonville, Florida
5 survey area from January 2014 to December 2014.



6
7 Figure 14c. Sea turtle sightings per 1000 km surveyed and the average BSS per month in the
8 Jacksonville, Florida survey area from January 2014 to December 2014.

4.2.1 Loggerhead Sea Turtle (*Caretta caretta*)

A total of 296 loggerhead sea turtles were observed (**Table 12**). This species was encountered on every day of survey effort. Loggerheads were predominantly recorded in the shallower waters over the continental shelf, although a small number of individuals occurred beyond the shelf break (**Figure 15**).

Table 12. Loggerhead sea turtle (*Caretta caretta*) sightings in the Jacksonville, Florida survey area from January 2014 to December 2014.

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
20-Jan-2014	14:44:09	41	30.100882	-80.342713	3	3	1	90°	1
16-Feb-2014	13:24:00	35	30.299869	-80.440493	6	2	1	90°	1
16-Feb-2014	13:26:13	36	30.299993	-80.356930	6	4	3	20°	1
16-Feb-2014	13:57:28	36	30.233148	-80.324140	5	3	2	90°	1
16-Feb-2014	13:58:17	37	30.233099	-80.352499	5	3	1	90°	1
16-Feb-2014	14:01:33	39	30.233063	-80.472441	5	2	1	90°	1
16-Feb-2014	14:32:55	49	30.166184	-80.263216	4	2	1	75°	1
16-Feb-2014	15:11:17	56	30.099988	-80.675578	3	1	1	60°	1
17-Feb-2014	8:38:29	3	29.964889	-80.669701	1	2	1	90°	1
17-Feb-2014	9:26:39	11	30.032231	-80.363643	2	2	1	90°	1
17-Feb-2014	9:27:55	12	30.032226	-80.413266	2	2	1	90°	1
17-Feb-2014	9:28:51	14	30.032265	-80.448275	2	2	3	100°	1
17-Feb-2014	9:50:57	22	30.365172	-80.572661	7	3	1	90°	1
17-Feb-2014	9:51:24	19	30.365168	-80.555532	7	2	1	170°	1
17-Feb-2014	11:34:44	61	30.498855	-80.567312	9	2	2	90°	2
17-Feb-2014	11:52:04	68	30.499527	-80.207081	9	2	1	90°	1
17-Feb-2014	12:26:04	49	30.567190	-80.406336	10	2	2	90°	1
17-Feb-2014	12:28:42	50	30.567013	-80.514627	10	2	1	90°	1
17-Feb-2014	12:37:41	53	30.567600	-80.718673	10	2	1	90°	1
17-Feb-2014	14:27:51	83	30.299504	-80.599657	6	2	2	90°	2
17-Feb-2014	14:38:48	61	30.299663	-80.405613	6	2	2	85°	1
17-Feb-2014	14:47:08	93	30.300015	-80.310708	6	2	3	90°	1
17-Feb-2014	15:42:22	109	30.232617	-80.683159	5	2	2	90°	1
17-Feb-2014	15:50:12	112	30.165818	-80.588878	4	2	1	90°	2
17-Feb-2014	15:57:35	115	30.166162	-80.369648	4	2	2	90°	1
17-Feb-2014	16:10:03	84	30.166195	-80.068476	4	1	2	120°	1
17-Feb-2014	16:38:49	90	30.100772	-80.411299	3	1	2	110°	1
18-Feb-2014	8:49:26	3	30.099862	-80.416660	3	3	2	80°	1
18-Feb-2014	8:51:55	4	30.100088	-80.320250	3	3	2	75°	2

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
18-Feb-2014	9:20:35	10	30.166839	-80.264344	4	3	1	90°	2
18-Feb-2014	9:26:06	14	30.166748	-80.475175	4	3	2	70°	1
18-Feb-2014	9:28:04	15	30.166559	-80.550361	4	3	1	60°	1
18-Feb-2014	9:29:24	16	30.166424	-80.600213	4	3	1	60°	1
18-Feb-2014	9:30:14	17	30.166365	-80.632269	4	3	1	60°	1
18-Feb-2014	9:31:51	14	30.166718	-80.693813	4	2	1	90°	1
18-Feb-2014	10:11:43	21	30.300562	-80.107734	6	3	1	90°	1
18-Feb-2014	11:01:33	37	29.965094	-80.488971	1	2	3	70°	1
18-Feb-2014	11:57:08	42	30.035030	-80.627624	2	2	1	90°	1
18-Feb-2014	13:26:03	59	30.565535	-80.697360	10	1	2	70°	1
18-Feb-2014	13:27:37	47	30.565927	-80.636125	10	2	1	65°	1
18-Feb-2014	13:29:02	60	30.566141	-80.583436	10	1	1	90°	1
18-Feb-2014	13:30:13	61	30.566262	-80.539253	10	1	1	90°	1
18-Feb-2014	13:30:54	48	30.566224	-80.513063	10	2	1	90°	1
18-Feb-2014	13:39:03	51	30.566769	-80.386702	10	2	2	90°	1
18-Feb-2014	13:40:18	66	30.566661	-80.338368	10	1	3	70°	1
18-Feb-2014	13:40:58	67	30.566784	-80.313330	10	1	3	75°	1
18-Feb-2014	14:09:09	56	30.499864	-80.242780	9	3	1	90°	1
18-Feb-2014	14:24:15	61	30.498079	-80.412038	9	3	2	60°	1
18-Feb-2014	14:25:05	62	30.499704	-80.444265	9	3	1	90°	1
18-Feb-2014	14:32:37	65	30.499574	-80.605206	9	3	2	90°	4
14-Mar-2014	11:49:48	32	30.499448	-80.275586	9	3	1	90°	1
14-Mar-2014	11:49:48	21	30.499448	-80.275586	9	3	1	90°	1
14-Mar-2014	12:22:57	24	30.567000	-80.511781	10	3	2	90°	1
15-Mar-2014	9:46:11	59	30.500059	-80.362822	9	3	2	90°	1
15-Mar-2014	9:50:50	12	30.499806	-80.535954	9	3	2	90°	1
15-Mar-2014	9:52:15	60	30.499671	-80.588945	9	3	2	90°	1
15-Mar-2014	9:52:46	13	30.499635	-80.608316	9	3	1	90°	1
15-Mar-2014	10:07:06	17	30.432969	-80.347902	8	3	1	90°	1
15-Mar-2014	10:53:10	24	30.366001	-80.417899	7	3	2	90°	1
15-Mar-2014	11:58:54	35	30.233120	-80.558112	5	3	2	90°	1
15-Mar-2014	14:40:33	98	30.032185	-80.673230	2	2	3	90°	1
15-Mar-2014	14:44:48	56	30.099498	-80.660265	3	2	2	90°	1
15-Mar-2014	14:46:18	57	30.099511	-80.604840	3	2	1	60°	1
15-Mar-2014	14:46:39	102	30.099539	-80.592341	3	2	2	90°	1
15-Mar-2014	14:47:31	103	30.099633	-80.560049	3	2	1	90°	1
15-Mar-2014	14:51:19	104	30.099944	-80.419424	3	2	1	90°	1

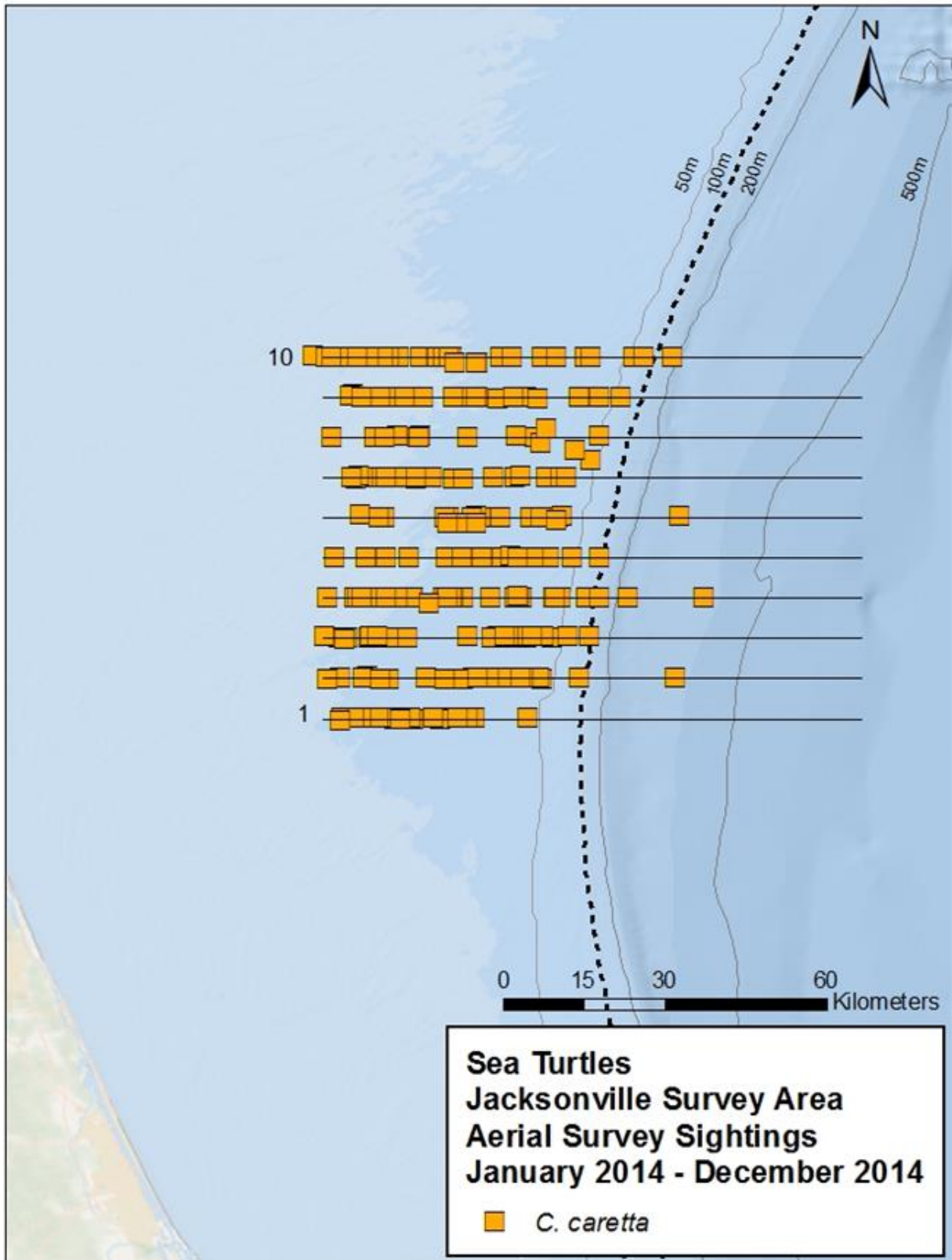
Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
15-Mar-2014	14:52:11	58	30.099937	-80.387564	3	2	1	45°	1
15-Mar-2014	14:52:51	106	30.100012	-80.363419	3	2	1	90°	1
15-Mar-2014	15:33:53	64	30.167105	-80.241586	4	3	1	90°	1
15-Mar-2014	15:46:06	119	30.166758	-80.467820	4	2	3	90°	2
15-Mar-2014	15:46:44	68	30.166815	-80.491801	4	3	1	90°	1
15-Mar-2014	15:48:39	69	30.166639	-80.564959	4	3	1	60°	1
15-Mar-2014	15:49:32	121	30.166504	-80.598774	4	2	2	90°	1
15-Mar-2014	15:50:50	71	30.166408	-80.648759	4	3	2	90°	1
7-May-2014	8:51:34	3	30.566649	-80.663139	10	2	2	90°	1
7-May-2014	8:52:38	2	30.567185	-80.621550	10	2	2	100°	1
7-May-2014	8:53:51	5	30.567202	-80.574469	10	2	2	90°	2
7-May-2014	9:47:18	12	30.498862	-80.589746	9	3	2	90°	1
7-May-2014	9:53:42	15	30.503358	-80.651605	9	3	2	90°	2
7-May-2014	9:53:50	16	30.501717	-80.655588	9	3	1	90°	1
7-May-2014	10:09:16	22	30.433570	-80.599272	8	2	2	90°	1
7-May-2014	10:10:43	23	30.433650	-80.544554	8	2	2	90°	1
7-May-2014	11:09:53	34	30.365013	-80.625681	7	2	1	90°	1
7-May-2014	11:10:40	35	30.364893	-80.651574	7	2	2	90°	1
7-May-2014	11:54:51	36	30.232583	-80.242691	5	2	2	90°	1
7-May-2014	11:59:22	45	30.233584	-80.404848	5	2	2	60°	1
7-May-2014	14:14:05	52	30.166930	-80.424048	4	1	1	90°	1
7-May-2014	14:15:12	53	30.166935	-80.382572	4	1	1	90°	1
7-May-2014	14:27:01	59	30.166822	-80.195000	4	1	2	90°	1
7-May-2014	14:56:27	64	30.099898	-80.371188	3	1	2	90°	1
7-May-2014	15:10:44	67	30.032061	-80.634040	2	2	2	90°	2
7-May-2014	15:34:15	53	30.032178	-80.451406	2	1	1	90°	1
7-May-2014	15:35:47	76	30.032660	-80.395526	2	1	1	90°	1
7-May-2014	16:29:17	88	29.964540	-80.506105	1	1	2	90°	2
7-May-2014	16:30:31	89	29.964502	-80.551350	1	1	1	90°	2
7-May-2014	16:30:44	63	29.964946	-80.560001	1	1	1	90°	2
7-May-2014	16:31:19	91	29.964190	-80.581322	1	2	2	90°	3
8-May-2014	9:46:32	13	30.365937	-80.635694	7	2	2	90°	1
8-May-2014	9:55:45	15	30.366219	-80.331050	7	3	2	90°	1
8-May-2014	10:48:02	22	30.499467	-80.565472	9	2	2	90°	2
8-May-2014	11:50:45	31	30.566270	-80.591542	10	2	1	90°	1
8-May-2014	11:51:19	32	30.566238	-80.609458	10	2	2	90°	1
8-May-2014	11:52:02	33	30.566238	-80.632396	10	2	2	90°	3

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
8-May-2014	11:52:08	35	30.566190	-80.635961	10	2	1	90°	1
8-May-2014	11:53:36	34	30.566044	-80.683915	10	2	2	90°	2
8-May-2014	13:56:05	39	30.166468	-80.606684	4	2	1	45°	1
8-May-2014	14:09:22	49	30.166890	-80.495089	4	3	2	60°	2
8-May-2014	15:07:29	48	30.099015	-80.666182	3	3	2	90°	2
8-May-2014	15:21:16	52	30.032188	-80.426412	2	3	1	90°	1
8-May-2014	15:23:10	62	30.032261	-80.367622	2	3	1	90°	1
25-Jun-2014	9:03:43	3	30.566401	-80.486421	10	2	2	90°	1
25-Jun-2014	9:09:33	5	30.566679	-80.265106	10	2	2	90°	4
25-Jun-2014	9:09:48	4	30.566560	-80.255401	10	2	2	90°	1
25-Jun-2014	9:40:37	10	30.499998	-80.383890	9	2	2	90°	1
25-Jun-2014	9:42:52	11	30.499898	-80.467408	9	2	2	90°	1
25-Jun-2014	10:46:23	22	30.366260	-80.298285	7	2	2	90°	1
25-Jun-2014	12:08:04	36	30.233359	-80.438793	5	2	3	90°	1
25-Jun-2014	14:18:36	45	30.166452	-80.637134	4	1	1	90°	1
25-Jun-2014	14:29:45	54	30.165801	-80.500839	4	1	2	90°	1
25-Jun-2014	14:29:52	47	30.165778	-80.496226	4	2	2	90°	2
25-Jun-2014	14:30:11	55	30.165930	-80.483793	4	1	2	60°	2
25-Jun-2014	14:37:26	50	30.166048	-80.319015	4	2	1	90°	2
25-Jun-2014	14:37:47	60	30.166134	-80.305790	4	2	1	90°	1
25-Jun-2014	15:09:09	57	30.100942	-80.259347	3	2	2	90°	1
25-Jun-2014	15:11:04	58	30.100895	-80.334645	3	2	2	90°	2
25-Jun-2014	15:12:26	68	30.100823	-80.388112	3	2	2	90°	1
25-Jun-2014	15:12:43	59	30.100928	-80.399470	3	2	2	90°	1
25-Jun-2014	15:14:15	69	30.100761	-80.460006	3	2	1	90°	1
25-Jun-2014	15:23:25	75	30.100377	-80.625629	3	2	2	90°	1
25-Jun-2014	15:27:35	64	30.100536	-80.699100	3	2	2	90°	1
25-Jun-2014	15:33:12	82	30.031202	-80.592977	2	2	2	90°	1
25-Jun-2014	15:39:25	87	30.031469	-80.468529	2	2	2	60°	1
25-Jun-2014	15:46:33	71	30.030284	-80.338088	2	2	1	90°	1
25-Jun-2014	15:48:05	73	30.031602	-80.276405	2	2	2	90°	1
25-Jun-2014	16:38:38	110	29.966155	-80.449347	1	2	2	90°	1
25-Jun-2014	16:48:34	115	29.965955	-80.592697	1	2	2	90°	1
25-Jun-2014	16:49:23	86	29.965785	-80.627374	1	2	2	90°	1
25-Jun-2014	16:50:27	87	29.965613	-80.670739	1	2	1	90°	1
26-Jun-2014	9:48:15	8	30.032455	-80.341129	2	3	2	90°	1
26-Jun-2014	10:54:35	22	30.166514	-80.554359	4	2	2	90°	2

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
26-Jun-2014	11:50:43	30	30.300637	-80.304320	6	3	1	90°	1
10-Jul-2014	9:00:10	3	30.231751	-80.630568	5	3	2	100°	1
10-Jul-2014	9:03:48	3	30.232030	-80.495971	5	2	3	90°	1
10-Jul-2014	9:09:22	5	30.232486	-80.287986	5	2	2	90°	1
10-Jul-2014	9:52:56	13	30.301010	-80.446635	6	1	1	90°	1
10-Jul-2014	10:01:41	17	30.303478	-80.638674	6	1	2	90°	2
10-Jul-2014	10:07:07	22	30.364600	-80.646222	7	2	2	90°	1
10-Jul-2014	10:09:45	23	30.364771	-80.547598	7	2	1	90°	1
10-Jul-2014	10:11:25	20	30.364789	-80.485112	7	1	2	90°	1
10-Jul-2014	10:11:53	24	30.364810	-80.467577	7	2	2	90°	1
10-Jul-2014	10:52:34	27	30.434328	-80.242090	8	2	2	90°	1
10-Jul-2014	10:56:11	29	30.434309	-80.379061	8	2	2	90°	2
10-Jul-2014	11:05:29	42	30.434124	-80.539242	8	2	1	90°	1
10-Jul-2014	11:06:31	33	30.433977	-80.578862	8	2	2	90°	2
10-Jul-2014	11:09:22	44	30.433614	-80.686617	8	2	2	60°	1
10-Jul-2014	11:15:02	47	30.498424	-80.606125	9	2	3	90°	1
10-Jul-2014	11:25:14	54	30.497572	-80.343272	9	2	2	90°	1
10-Jul-2014	14:00:04	71	30.165110	-80.643828	4	2	2	90°	1
10-Jul-2014	14:04:16	72	30.165788	-80.488067	4	2	2	90°	2
10-Jul-2014	14:08:56	51	30.165880	-80.315946	4	2	2	90°	1
10-Jul-2014	15:12:28	60	30.100430	-80.667619	3	3	2	90°	1
10-Jul-2014	15:18:50	63	30.031032	-80.606244	2	3	2	60°	1
11-Jul-2014	9:04:28	3	30.565816	-80.600571	10	1	1	90°	1
11-Jul-2014	9:23:26	7	30.566177	-80.185450	10	2	2	90°	1
11-Jul-2014	9:43:32	14	30.500304	-80.447708	9	3	2	90°	1
11-Jul-2014	9:56:02	18	30.432409	-80.541935	8	2	2	90°	2
11-Jul-2014	10:34:11	20	30.366524	-80.381560	7	2	1	90°	1
11-Jul-2014	10:46:22	23	30.365540	-80.520432	7	2	1	90°	1
11-Jul-2014	10:47:53	32	30.366126	-80.576051	7	2	2	90°	1
11-Jul-2014	11:02:22	26	30.367675	-80.641007	7	2	2	90°	3
11-Jul-2014	11:59:49	37	30.234110	-80.390634	5	2	2	90°	1
11-Jul-2014	12:05:17	38	30.233306	-80.596997	5	2	2	90°	1
11-Jul-2014	13:54:37	54	30.165520	-80.578039	4	2	2	90°	1
9-Aug-2014	9:21:34	3	30.233447	-80.559357	5	2	2	90°	1
9-Aug-2014	9:24:27	4	30.233695	-80.45489	5	3	2	90°	1
9-Aug-2014	9:24:55	4	30.233563	-80.438079	5	2	2	100°	1
9-Aug-2014	10:03:19	10	30.299415	-80.45410	6	2	2	90°	1

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
9-Aug-2014	10:04:24	13	30.299259	-80.491545	6	2	1	90°	1
9-Aug-2014	10:14:08	14	30.366301	-80.65313	7	2	2	90°	1
9-Aug-2014	10:17:06	17	30.366080	-80.546198	7	2	1	90°	1
9-Aug-2014	10:37:21	20	30.366965	-80.30555	7	3	1	90°	1
9-Aug-2014	12:04:13	34	30.566021	-80.167869	10	3	3	90°	1
9-Aug-2014	12:25:14	39	30.565878	-80.501233	10	2	3	90°	1
9-Aug-2014	14:31:28	51	29.965584	-80.64547	1	2	3	90°	1
9-Aug-2014	14:32:10	47	29.965607	-80.619282	1	2	1	60°	1
9-Aug-2014	14:32:32	52	29.965717	-80.60528	1	2	1	90°	1
9-Aug-2014	14:33:55	53	29.965878	-80.55539	1	2	2	90°	1
9-Aug-2014	14:34:59	48	29.965762	-80.517669	1	2	1	45°	1
9-Aug-2014	14:36:31	49	29.966007	-80.461511	1	2	2	90°	1
9-Aug-2014	15:10:50	55	30.031821	-80.116663	2	2	1	90°	1
9-Aug-2014	15:17:40	56	30.032005	-80.367520	2	2	2	90°	2
9-Aug-2014	15:19:44	57	30.032000	-80.445099	2	2	2	90°	1
9-Aug-2014	15:26:29	61	30.03074	-80.69374	2	2	2	90°	1
9-Aug-2014	15:31:36	64	30.100956	-80.62379	3	3	1	90°	1
9-Aug-2014	15:31:55	62	30.100848	-80.612040	3	3	2	90°	1
9-Aug-2014	15:38:47	65	30.101177	-80.36013	3	3	1	90°	2
9-Aug-2014	15:38:58	63	30.101095	-80.353229	3	3	1	60°	1
9-Aug-2014	15:40:36	67	30.101288	-80.29359	3	1	2	90°	1
9-Aug-2014	16:12:34	71	30.166184	-80.37421	4	3	2	90°	1
9-Aug-2014	16:19:39	72	30.165384	-80.63807	4	3	1	90°	1
10-Aug-2014	9:24:32	4	29.966107	-80.478057	1	3	1	90°	1
10-Aug-2014	9:27:29	3	29.966697	-80.361142	1	3	2	90°	1
10-Aug-2014	10:14:58	9	30.031507	-80.372449	2	3	2	90°	1
10-Aug-2014	11:14:40	20	30.165289	-80.487076	4	3	2	90°	1
11-Sep-2014	8:57:33	3	30.565936	-80.686512	10	2	1	90°	1
11-Sep-2014	8:58:21	3	30.566313	-80.656802	10	2	1	90°	1
11-Sep-2014	8:59:10	4	30.566408	-80.626253	10	2	2	90°	3
11-Sep-2014	9:06:24	7	30.566660	-80.491124	10	2	2	90°	2
11-Sep-2014	9:51:09	19	30.498359	-80.48462	9	2	2	90°	1
11-Sep-2014	9:59:14	20	30.499428	-80.637601	9	1	1	90°	1
11-Sep-2014	10:05:51	24	30.432645	-80.615112	8	2	1	90°	1
11-Sep-2014	10:06:17	25	30.432641	-80.599227	8	1	2	90°	1
11-Sep-2014	10:13:46	28	30.433332	-80.462011	8	1	2	60°	1
11-Sep-2014	10:52:21	36	30.365204	-80.297280	7	2	2	90°	2

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
11-Sep-2014	11:09:25	39	30.364895	-80.595902	7	2	2	60°	2
11-Sep-2014	11:35:48	59	30.300480	-80.339947	6	2	2	90°	1
11-Sep-2014	12:30:31	57	30.232017	-80.628964	5	2	2	90°	3
11-Sep-2014	14:11:28	80	30.166889	-80.596842	4	2	2	90°	2
11-Sep-2014	14:14:14	63	30.166880	-80.494294	4	2	3	90°	1
11-Sep-2014	14:17:23	81	30.167228	-80.378241	4	2	2	90°	1
11-Sep-2014	15:11:35	92	30.032454	-80.531215	2	2	2	90°	1
11-Sep-2014	16:07:30	80	29.965063	-80.576731	1	3	2	90°	1
12-Sep-2014	8:59:13	4	30.233462	-80.471558	5	1	2	100°	1
12-Sep-2014	9:01:48	6	30.233691	-80.377311	5	2	1	90°	1
12-Sep-2014	9:38:57	14	30.298591	-80.499143	6	3	1	100°	1
12-Sep-2014	9:41:53	9	30.298661	-80.608282	6	2	3	90°	1
12-Sep-2014	10:03:58	23	30.368030	-80.373172	7	3	1	90°	1
12-Sep-2014	11:37:43	33	30.565612	-80.120527	10	3	2	90°	1
12-Sep-2014	11:53:34	38	30.565534	-80.491940	10	2	2	90°	1
12-Sep-2014	12:03:16	41	30.564904	-80.645458	10	2	1	90°	2
12-Sep-2014	14:28:19	49	30.030807	-80.500025	2	3	2	90°	1
21-Oct-2014	10:02:08	9	30.294193	-80.312474	6	3	1	90°	1
21-Oct-2014	10:06:01	10	30.290399	-80.446199	6	3	1	90°	1
21-Oct-2014	10:06:54	11	30.290049	-80.478429	6	3	2	90°	1
21-Oct-2014	10:07:22	12	30.290057	-80.494572	6	3	1	90°	1
21-Oct-2014	10:57:48	18	30.423778	-80.339974	8	3	1	90°	1
21-Oct-2014	11:55:40	26	30.556612	-80.443777	10	3	1	90°	1
21-Oct-2014	11:55:47	25	30.556574	-80.447538	10	2	2	90°	1
21-Oct-2014	11:56:43	27	30.556311	-80.481525	10	3	2	90°	2
21-Oct-2014	14:05:19	32	29.960831	-80.672416	1	2	1	90°	1
21-Oct-2014	14:07:59	30	29.963420	-80.572834	1	2	1	90°	1
21-Oct-2014	15:00:12	38	30.097324	-80.666009	3	2	1	90°	1
21-Oct-2014	15:56:35	47	30.157076	-80.525579	4	2	1	90°	1
22-Oct-2014	9:55:40	11	30.447214	-80.331044	8	4	2	90°	1
22-Oct-2014	10:28:11	17	30.395537	-80.256486	7	4	2	90°	1
22-Oct-2014	10:29:12	12	30.412098	-80.283022	7	4	1	90°	1



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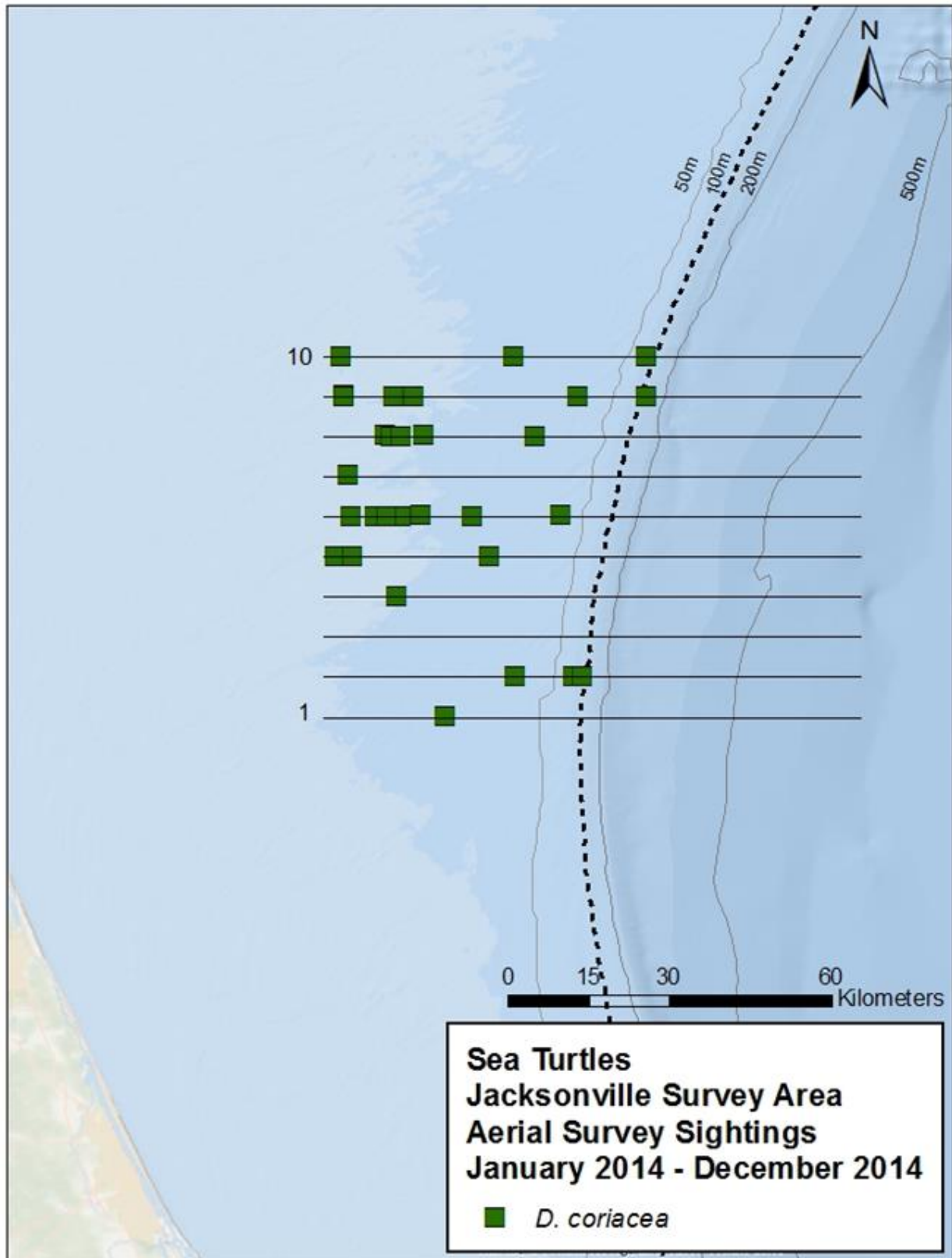
2 Figure 15. Loggerhead sea turtle (*Caretta caretta*) sightings.

4.2.2 Leatherback Sea Turtle (*Dermochelys coriacea*)

A total of 32 leatherback sea turtles were recorded inshore of the 100-m shelf break (**Table 13, Figure 16**). This species was observed in seven of the nine months surveyed (absent in January and October).

Table 13. Leatherback sea turtle (*Dermochelys coriacea*) sightings in the Jacksonville, Florida survey area from January 2014 to December 2014.

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
18-Feb-2014	14:39:32	88	30.501068	-80.668208	9	2	3	90°	1
15-Mar-2014	11:05:42	72	30.299392	-80.615060	6	3	2	90°	1
15-Mar-2014	15:49:02	70	30.166624	-80.579492	4	3	1	90°	1
7-May-2014	11:25:37	31	30.300806	-80.305962	6	2	2	90°	1
8-May-2014	15:22:42	61	30.032215	-80.382273	2	3	1	90°	1
25-Jun-2014	15:47:54	93	30.031629	-80.283692	2	1	1	90°	1
25-Jun-2014	15:48:12	94	30.031654	-80.271664	2	1	1	90	1
10-Jul-2014	9:55:24	14	30.300820	-80.538402	6	1	1	90°	1
10-Jul-2014	11:05:21	32	30.434141	-80.533966	8	2	1	90°	2
10-Jul-2014	11:07:03	43	30.433960	-80.599205	8	2	2	90°	1
10-Jul-2014	11:13:23	36	30.498358	-80.667348	9	2	2	90°	1
10-Jul-2014	11:15:35	48	30.498424	-80.585004	9	2	2	90°	1
10-Jul-2014	11:16:27	49	30.498474	-80.551233	9	2	1	60°	1
11-Jul-2014	9:02:34	2	30.565316	-80.671756	10	1	2	90°	1
11-Jul-2014	9:54:45	17	30.432349	-80.590358	8	2	1	90°	1
11-Jul-2014	9:55:12	15	30.432353	-80.573488	8	2	2	90°	1
11-Jul-2014	11:02:52	27	30.368319	-80.661722	7	2	2	90°	2
11-Jul-2014	11:10:14	41	30.299115	-80.571834	6	2	1	110°	1
11-Jul-2014	11:13:23	30	30.299384	-80.455037	6	2	1	45°	1
11-Jul-2014	12:07:32	39	30.233080	-80.683558	5	2	1	90°	1
9-Aug-2014	10:07:24	11	30.299153	-80.59674	6	2	1	90°	1
10-Aug-2014	12:31:49	34	30.299120	-80.656184	6	3	2	90°	1
11-Sep-2014	9:15:16	10	30.567080	-80.164494	10	2	1	90°	1
11-Sep-2014	9:42:32	18	30.498426	-80.164489	9	2	2	90°	1
11-Sep-2014	9:45:33	15	30.498588	-80.277795	9	2	2	90°	1
11-Sep-2014	10:16:47	30	30.433408	-80.348248	8	2	3	90°	1
11-Sep-2014	12:13:55	71	30.232429	-80.426038	5	1	2	90°	1
11-Sep-2014	12:31:07	58	30.232140	-80.653803	5	2	1	90°	1
11-Sep-2014	16:05:27	79	29.965193	-80.499615	1	3	1	90°	1
12-Sep-2014	11:50:54	46	30.565562	-80.384693	10	2	1	60°	1



1

2 Figure 16. Leatherback sea turtle (*Dermochelys coriacea*) sightings.

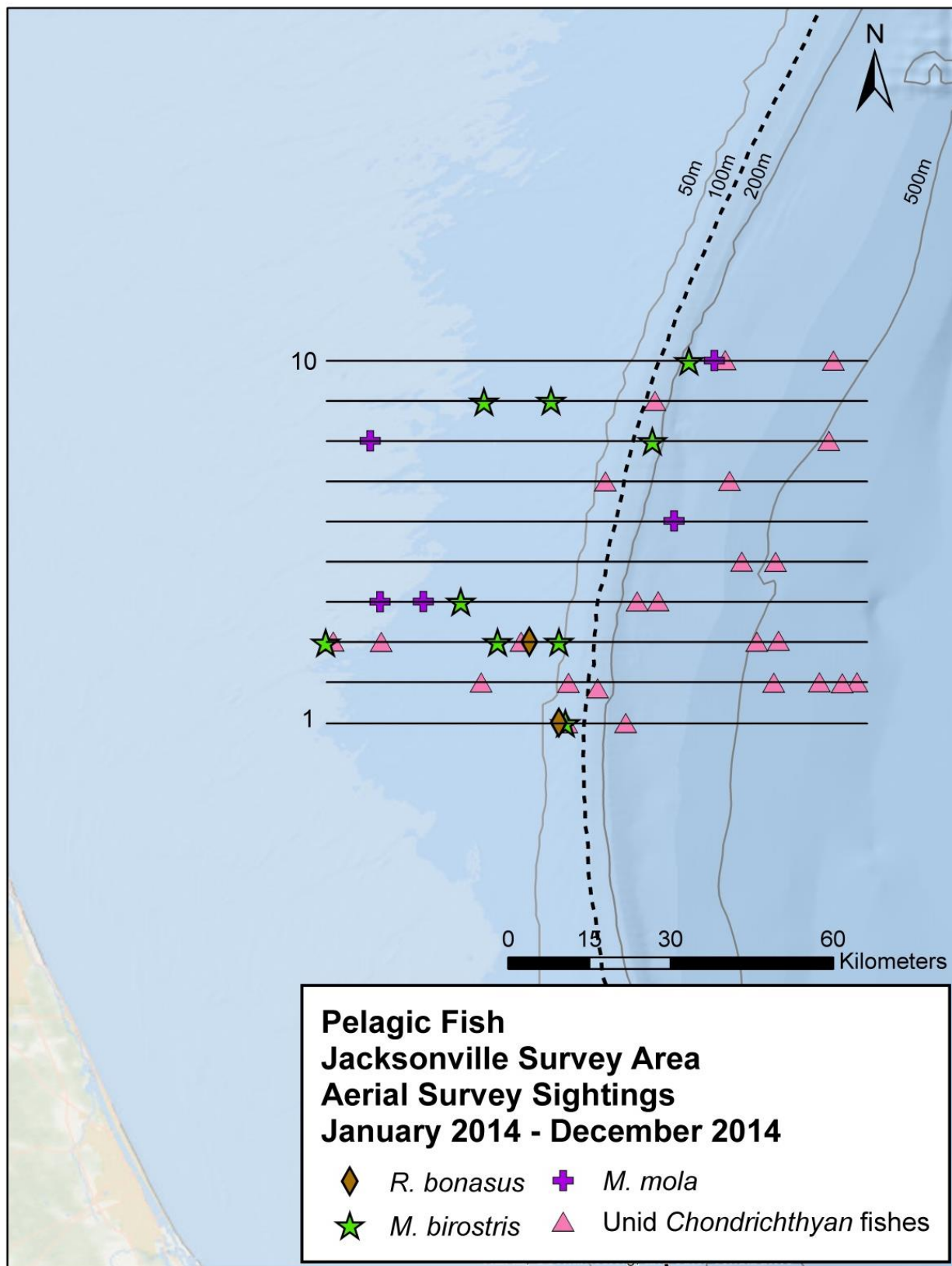
4.3 Fish

4.3.1 Pelagic Bony Fishes (*Osteichthyes*)

Seven ocean sunfish (*Mola mola*) were recorded over the continental shelf in February, March, and June (Table 14, Figure 17).

Table 14. Ocean sunfish (*Mola mola*) sightings in the Jacksonville, Florida survey area from January 2014 to December 2014.

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
18-Feb-2014	10:12:09	22	30.300515	-80.123779	6	3	1	90°	1
14-Mar-2014	11:33:54	17	30.433256	-80.628012	8	3	2	90°	1
15-Mar-2014	15:47:59	120	30.166627	-80.539831	4	2	3	90°	1
15-Mar-2014	15:49:53	122	30.166430	-80.611858	4	2	2	90°	1
25-Jun-2014	9:15:00	5	30.566418	-80.057101	10	2	1	90°	2



1
2 Figure 17. Pelagic fish sightings.

4.3.2 Cartilaginous Fishes (*Chondrichthyes*)

Fifteen manta rays (*Manta birostris*) were observed throughout the survey site with 66 percent of individuals occurring in May (**Table 15**). Cownose rays (*Rhinoptera bonasus*) were recorded in June only with a total of 255 individuals (**Table 16**). A total of 24 sharks were recorded during the reporting period, 19 of these could be identified as hammerheads based on head shape but, since none of these sightings could be identified to species they are listed here as unidentified *Chondrichthyan* fishes (**Table 17**). Sharks were seen throughout the study period with no discernable spatial or temporal trends (**Figure 17**).

Table 15. Manta ray (*Manta birostris*) sightings in the Jacksonville, Florida survey area from January 2014 to December 2014.

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
18-Feb-2014	9:26:10	13	30.166785	-80.477954	4	2	1	90°	2
15-Mar-2014	9:45:15	58	30.500016	-80.328165	9	3	2	90°	1
7-May-2014	14:54:56	63	30.100032	-80.315216	3	1	2	90°	1
8-May-2014	10:25:01	17	30.433235	-80.160237	8	3	2	90°	1
8-May-2014	15:00:21	58	30.099953	-80.416839	3	3	2	90°	1
8-May-2014	15:08:30	49	30.098899	-80.702199	3	3	2	90°	6
8-May-2014	16:25:15	76	29.965387	-80.304405	1	3	3	90°	1
9-Aug-2014	12:02:20	33	30.565950	-80.099466	10	3	1	90°	1
11-Sep-2014	9:49:57	17	30.498523	-80.439595	9	1	2	90°	1

Table 16. Cownose ray (*Rhinoptera bonasus*) sightings in the Jacksonville, Florida survey area from January 2014 to December 2014.

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #
25-Jun-2014	16:30:28	81	29.966205	-80.315215	1	2	1	90°	175
26-Jun-2014	10:17:16	12	30.100042	-80.363923	3	3	2	90°	80

1 **Table 17. Unidentified *Chondrichthyan* fish sightings in the Jacksonville, Florida survey area from**
2 **January 2014 to December 2014.**

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #	Comments
16-Feb-2014	15:11:39	52	30.100159	-80.689541	3	3	1	90°	1	Hammerhead shark
17-Feb-2014	9:28:44	18	30.032183	-80.444137	2	3	1	90°	1	Hammerhead shark
17-Feb-2014	10:03:32	27	30.365702	-80.237779	7	2	2	90°	1	Hammerhead shark
17-Feb-2014	10:34:34	36	30.433161	-79.866932	8	3	1	90°	1	Hammerhead shark
17-Feb-2014	11:53:21	69	30.499391	-80.155494	9	2	1	90°	1	Hammerhead shark
15-Mar-2014	14:08:25	46	30.031906	-79.958244	2	3	2	90°	1	Hammerhead shark
15-Mar-2014	14:46:10	101	30.099527	-80.609875	3	2	3	90°	1	
15-Mar-2014	14:52:27	105	30.100002	-80.377638	3	2	1	90°	1	
7-May-2014	14:27:17	60	30.166832	-80.185213	4	1	2	90°	1	Hammerhead shark
7-May-2014	16:04:31	57	30.032603	-79.882723	2	1	1	90°	1	
7-May-2014	16:06:23	84	30.032595	-79.820309	2	1	1	90°	1	Hammerhead shark
7-May-2014	16:20:59	61	29.964988	-80.204277	1	1	1	90°	1	Hammerhead shark
7-May-2014	16:23:41	62	29.964720	-80.301871	1	1	1	90°	1	
8-May-2014	14:20:20	50	30.166959	-80.150165	4	3	1	90°	1	Hammerhead shark
25-Jun-2014	15:47:30	72	30.031516	-80.299055	2	2	2	90°	1	Hammerhead shark
25-Jun-2014	16:06:27	98	30.031051	-79.844974	2	1	1	90°	1	Hammerhead shark
26-Jun-2014	11:31:05	26	30.232367	-79.955605	5	4	2	90°	1	Hammerhead shark
9-Aug-2014	10:44:43	21	30.366442	-80.031874	7	3	1	100°	1	
11-Sep-2014	9:18:38	10	30.566899	-80.039134	10	2	2	90°	1	Hammerhead shark
11-Sep-2014	9:23:30	12	30.566291	-79.859557	10	3	2	90°	1	Hammerhead shark
11-Sep-2014	11:58:05	51	30.232542	-80.011497	5	3	2	90°	1	Hammerhead shark
11-Sep-2014	14:39:51	69	30.099830	-79.986544	3	3	3	90°	1	Hammerhead shark
12-Sep-2014	14:55:42	60	30.101622	-79.950543	3	3	1	90°	1	Hammerhead shark
21-Oct-2014	14:43:44	37	30.022633	-80.250985	2	3	1	90°	1	Hammerhead shark

3 4.4 Vessel Sightings

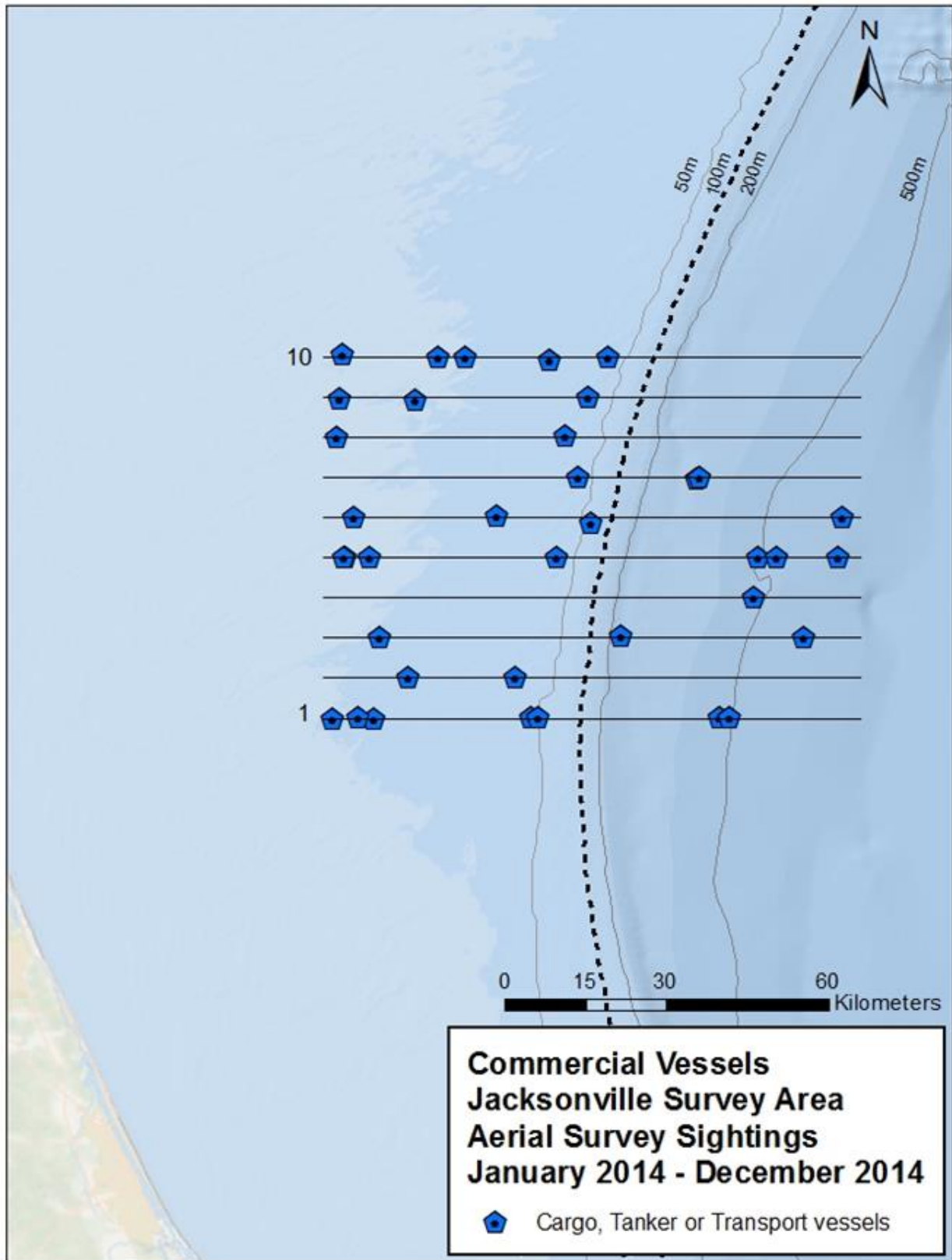
4 4.4.1 Commercial Vessels

5 A total of 39 commercial vessels (e.g., tankers, car carriers, and container vessels) was
6 observed in the study site (**Table 18, Figure 18**)

7

1 **Table 18. Commercial vessel sightings in the Jacksonville, Florida survey area from January 2014**
2 **to December 2014.**

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #	Comments
20-Jan-2014	9:58:38	11	30.433106	-80.418123	8	3	3	60°	1	Carrier stationary
20-Jan-2014	10:46:24	19	30.299186	-80.649746	6	3	2	60°	1	Car carrier
20-Jan-2014	11:12:58	23	30.299376	-79.835840	6	4	2	90°	1	Car carrier
20-Jan-2014	14:15:31	36	30.166223	-80.238148	4	4	2	60°	1	Carrier
16-Feb-2014	10:44:32	21	30.365951	-80.073711	7	4	4	80°	1	
16-Feb-2014	13:47:52	39	30.232765	-79.974963	5	4	3	170°	1	Car carrier
16-Feb-2014	14:06:40	40	30.232660	-80.665036	5	2	3	45°	1	Tanker
17-Feb-2014	9:02:57	5	29.965323	-80.022485	1	2	2	90°	1	Cargo ship
17-Feb-2014	12:15:05	72	30.567153	-80.224221	10	2	4	48°	1	Tanker
17-Feb-2014	12:36:33	52	30.571968	-80.668572	10	2	2	90°	1	Cargo ship and tug boat
17-Feb-2014	15:15:52	71	30.233017	-79.943855	5	2	2	90°	1	Cargo or Cruise Ship
17-Feb-2014	15:40:50	108	30.232874	-80.621992	5	2	4	90°	2	
18-Feb-2014	8:44:33	2	30.099509	-80.605948	3	3	4	100°	1	Oil tanker
18-Feb-2014	9:13:13	9	30.166566	-79.982404	4	4	4	85°	1	Cargo ship
18-Feb-2014	11:48:22	50	30.032117	-80.558786	2	2	3	110°	1	Cargo ship
14-Mar-2014	11:35:13	18	30.432952	-80.678297	8	3	3	60°	1	Cargo vessel
14-Mar-2014	14:22:32	43	29.965411	-80.354143	1	3	4	45°	1	Container vessel
15-Mar-2014	14:20:38	48	30.032510	-80.379014	2	3	4	60°	1	Container vessel
7-May-2014	16:32:17	92	29.964271	-80.616838	1	2	2	90°	1	Tanker
7-May-2014	16:34:06	94	29.964046	-80.683995	1	3	4	90°	1	Cargo vessel
8-May-2014	11:48:06	30	30.566630	-80.509212	10	2	4	60°	1	Car carrier
8-May-2014	16:17:52	59	29.965034	-80.040281	1	3	1	45°	1	Car carrier
25-Jun-2014	11:48:20	34	30.233356	-80.310983	5	3	3	45°	1	Tug and Barge
25-Jun-2014	16:49:42	116	29.965657	-80.640826	1	2	4	45°	1	Tug and Barge
26-Jun-2014	9:17:20	3	29.965298	-80.341418	1	3	2	45°	1	Tanker
10-Jul-2014	9:52:00	11	30.301311	-80.411234	6	2	3	30°	1	Container vessel
10-Jul-2014	10:54:00	28	30.434335	-80.296039	8	2	3	30°	1	Container vessel
11-Jul-2014	9:19:49	9	30.560571	-80.321946	10	2	3	60°	1	Barge
11-Jul-2014	9:38:28	11	30.500298	-80.259345	9	3	4	45°	1	Container vessel
11-Jul-2014	10:31:23	27	30.366623	-80.274698	7	3	1	30°	1	Container vessel
9-Aug-2014	12:24:13	38	30.565907	-80.464269	10	2	4	90°	1	Tanker
11-Sep-2014	10:00:13	22	30.497872	-80.674058	9	1	4	90°	1	Cargo vessel
11-Sep-2014	11:53:39	64	30.232135	-79.841656	5	3	2	60°	1	Car carrier
11-Sep-2014	14:37:37	68	30.099720	-79.899441	3	3	3	45°	1	Cargo
12-Sep-2014	14:48:59	52	30.102039	-80.204456	3	3	2	60°	1	Yacht very fast
21-Oct-2014	9:50:50	6	30.290080	-80.254829	6	3	4	45°	1	Cruise ship
21-Oct-2014	10:32:22	15	30.363799	-80.078034	7	3	2	60°	1	Container vessel
21-Oct-2014	11:15:06	21	30.495739	-80.545745	9	2	3	45°	1	Cargo vessel



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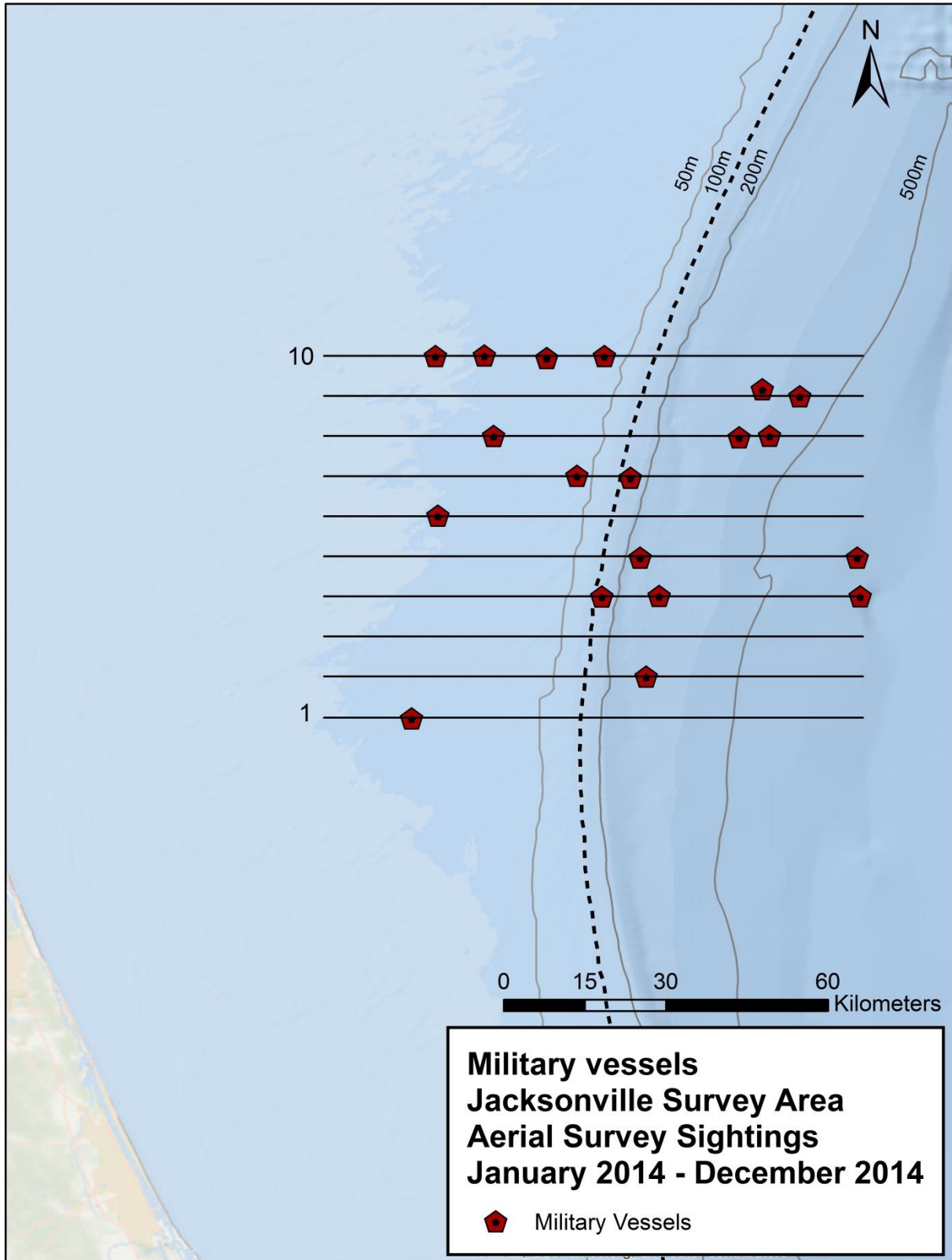
2 Figure 18. Commercial vessel sightings.

1 4.4.2 Military

2 A total of 22 U.S. military vessels was seen during the reporting period (**Table 19, Figure 19**).

3 **Table 19. Military vessel sightings in the Jacksonville, Florida survey area from January 2014 to**
4 **December 2014.**

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #	Comments
7-May-2014	11:20:13	30	30.300548	-80.510869	6	2	3	45°	1	Coast guard cutter
11-Jul-2014	9:06:47	3	30.566022	-80.514713	10	1	2	60°	1	Aircraft carrier 75
11-Sep-2014	9:07:58	8	30.566794	-80.43362	10	2	4	60°	2	Military vessels + Helo
11-Sep-2014	9:37:21	16	30.510820	-79.971085	9	3	2	90°	1	Warship resight
11-Sep-2014	10:27:12	32	30.433458	-79.959011	8	3	2	60°	1	Military resight
11-Sep-2014	11:52:57	63	30.230697	-79.813015	5	3	3	90°	2	Heading towards range
11-Sep-2014	14:23:38	65	30.167165	-80.142662	4	3	3	45°	1	Military vessel
11-Sep-2014	15:35:03	97	30.032857	-80.164231	2	3	3	60°	1	Military vessel
12-Sep-2014	10:06:28	24	30.366932	-80.279539	7	3	4	90°	2	Military vessel
12-Sep-2014	11:24:41	30	30.499109	-79.908701	9	3	3	60°	2	Military Cargo transfer
12-Sep-2014	11:40:38	35	30.565955	-80.233739	10	2	1	60°	1	Large Coast Guard vessel
12-Sep-2014	15:02:09	55	30.166448	-79.808183	4	3	2	90°	1	Frigate
21-Oct-2014	9:24:54	3	30.230687	-80.174336	5	3	4	45°	1	Warship
21-Oct-2014	10:29:36	14	30.363525	-80.190394	7	3	3	60°	1	Warship
21-Oct-2014	14:08:28	33	29.963391	-80.554578	1	2	5	60°	1	Military vessel
22-Oct-2014	8:58:53	4	30.562677	-80.329909	10	4	3	60°	2	Military vessel
22-Oct-2014	10:04:14	13	30.430698	-80.009773	8	4	4	60°	1	Small aircraft carrier



1

2 Figure 19. Military vessel sightings.

4.4.3 Other Vessels

A total of 233 other vessels, all classified as recreational fishing vessels, was recorded in the survey area (**Table 20, Figure 20**).

Table 20. Other vessel sightings in the Jacksonville, Florida, survey area from January 2014 to December 2014.

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #	Comments
20-Jan-2014	9:26:14	6	30.499775	-80.159630	9	4	2	45°	1	Recreational fishing vessel
20-Jan-2014	10:03:55	13	30.433285	-80.219885	8	4	2	60°	1	Recreational fishing vessel
20-Jan-2014	10:32:18	17	30.366158	-80.339610	7	3	2	90°	1	Recreational fishing vessel
20-Jan-2014	10:41:30	18	30.365415	-80.665080	7	3	4	45°	1	Recreational fishing vessel
20-Jan-2014	11:00:54	25	30.299914	-80.286830	6	3	3	90°	1	Recreational fishing vessel
20-Jan-2014	14:41:53	39	30.100585	-80.258129	3	4	1	90°	1	Recreational fishing vessel
16-Feb-2014	9:20:39	4	30.566709	-80.158771	10	5	3	90°	1	Recreational fishing vessel
16-Feb-2014	9:43:47	6	30.499684	-80.194795	9	4	4	100°	2	
16-Feb-2014	9:45:19	7	30.499705	-80.251957	9	4	2	90°	1	Recreational fishing vessel
16-Feb-2014	9:54:04	8	30.499281	-80.580313	9	3	1	90°	1	
16-Feb-2014	10:04:23	12	30.432825	-80.646623	8	3	4	80°	1	
16-Feb-2014	10:18:17	16	30.433284	-80.405099	8	3	4	90°	1	
16-Feb-2014	10:23:06	14	30.433239	-80.224614	8	4	3	90°	1	Recreational fishing vessel
16-Feb-2014	10:23:09	18	30.433299	-80.222333	8	4	4	110°	2	
16-Feb-2014	10:48:09	22	30.365818	-80.201968	7	4	1	90°	1	
16-Feb-2014	10:48:53	18	30.365952	-80.227594	7	4	1	90°	1	Recreational fishing vessel
16-Feb-2014	10:50:29	23	30.366832	-80.286308	7	4	3	120°	1	
16-Feb-2014	10:51:26	20	30.366357	-80.321463	7	3	3	45°	1	
16-Feb-2014	13:25:56	30	30.300072	-80.368403	6	3	2	90°	2	Recreational fishing vessel
16-Feb-2014	13:55:32	41	30.232864	-80.254831	5	2	4	30°	1	Recreational fishing vessel
16-Feb-2014	14:06:37	42	30.232608	-80.663263	5	1	4	110°	1	oil tanker
16-Feb-2014	14:28:51	48	30.166402	-80.418558	4	2	4	75°	1	Recreational fishing vessel
16-Feb-2014	15:01:11	55	30.100587	-80.304690	3	2	3	75°	7	Recreational

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #	Comments
										fishing vessel
16-Feb-2014	15:01:54	51	30.100774	-80.332057	3	3	2	90°	2	Recreational fishing vessel
17-Feb-2014	8:50:33	9	29.965251	-80.483843	1	3	4	90°	2	Recreational fishing vessel
17-Feb-2014	8:52:04	10	29.965348	-80.428019	1	3	1	45°	1	Recreational fishing vessel
17-Feb-2014	9:26:18	10	30.032312	-80.349984	2	2	3	90°	1	Recreational fishing vessel
17-Feb-2014	9:26:33	17	30.032243	-80.359342	2	3	2	60°	1	Recreational fishing vessel
17-Feb-2014	9:28:37	13	30.032204	-80.439794	2	2	3	90°	1	Recreational fishing vessel
17-Feb-2014	9:30:01	15	30.032165	-80.491623	2	2	4	120°	3	Recreational fishing vessel
17-Feb-2014	9:30:21	19	30.032116	-80.503744	2	3	2	90°	1	Recreational fishing vessel
17-Feb-2014	9:30:58	16	30.031999	-80.527088	2	2	4	100°	1	Recreational fishing vessel
17-Feb-2014	10:00:51	21	30.365743	-80.336645	7	2	2	10°	4	Recreational fishing vessel
17-Feb-2014	10:01:55	22	30.365620	-80.297106	7	2	1	75°	1	Recreational fishing vessel
17-Feb-2014	10:02:31	23	30.365870	-80.274860	7	2	1	90°	1	Recreational fishing vessel
17-Feb-2014	11:13:55	50	30.433576	-80.473750	8	2	3	90°	1	R/V Stellwagen
17-Feb-2014	11:37:55	62	30.499285	-80.446517	9	2	2	60°	1	Recreational fishing vessel
17-Feb-2014	11:38:33	63	30.499370	-80.422017	9	2	1	90°	1	R/V Barber
17-Feb-2014	11:51:59	46	30.499579	-80.210296	9	2	1	90°	1	Recreational fishing vessel
17-Feb-2014	14:37:38	88	30.299761	-80.450386	6	2	3	60°	3	Recreational fishing vessel
17-Feb-2014	14:50:34	94	30.299973	-80.181451	6	2	1	60°	1	Recreational fishing vessel
17-Feb-2014	14:53:44	65	30.299892	-80.063772	6	2	2	90°	1	Sailboat
17-Feb-2014	15:22:01	72	30.233407	-80.184735	5	2	2	90°	2	Recreational fishing vessel
17-Feb-2014	15:22:16	100	30.233220	-80.194945	5	2	2	60°	1	Recreational fishing vessel
17-Feb-2014	15:54:49	81	30.165814	-80.473381	4	2	4	180°	1	Recreational fishing vessel
17-Feb-2014	16:35:41	126	30.100749	-80.287563	3	2	2	60°	1	Recreational fishing vessel
17-Feb-2014	16:43:37	91	30.100406	-80.600503	3	1	3	90°	1	Recreational

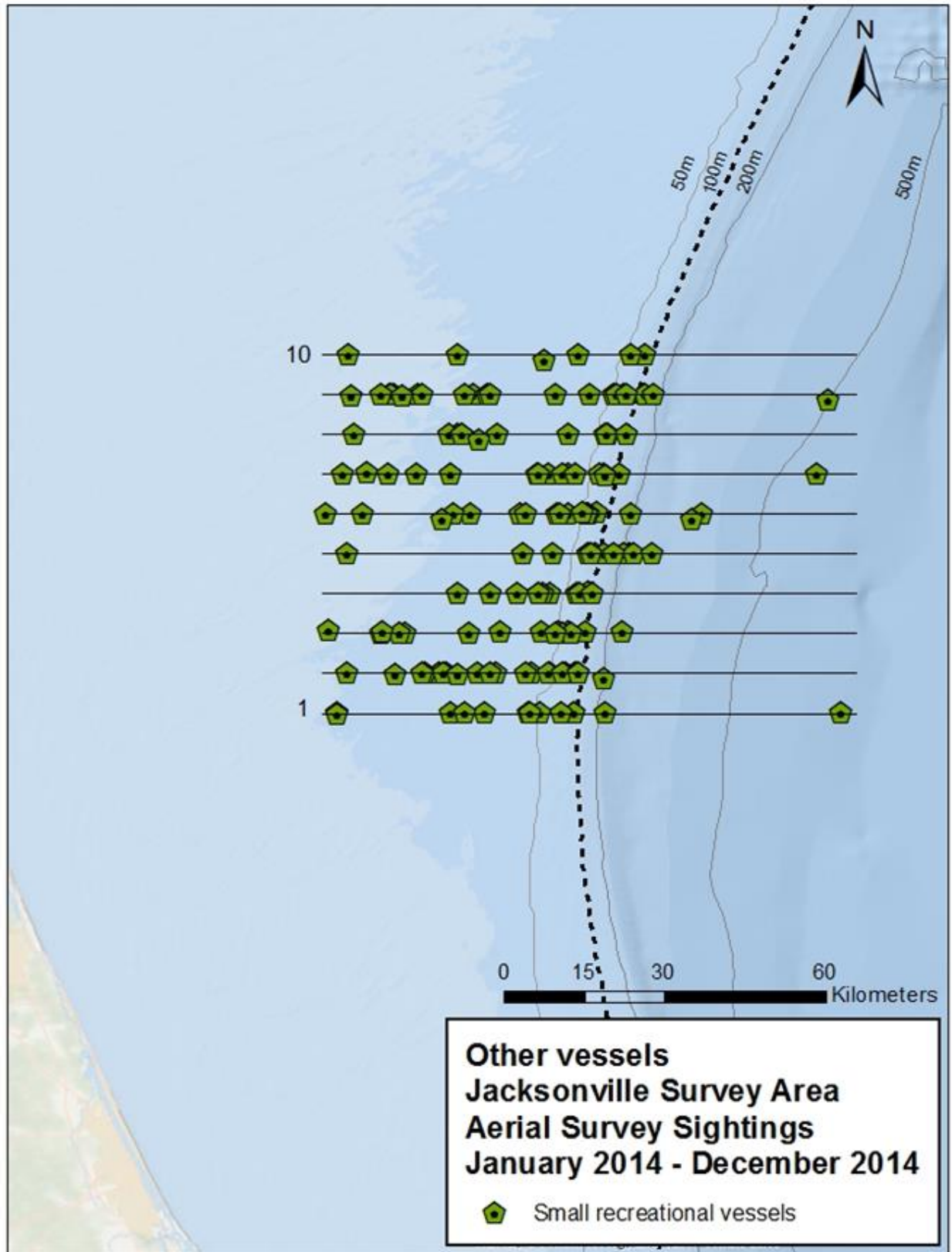
Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #	Comments
										fishing vessel
18-Feb-2014	8:48:28	3	30.099701	-80.454657	3	3	2	45°	1	Recreational fishing vessel
18-Feb-2014	8:52:35	5	30.100081	-80.295609	3	3	4	75°	2	Recreational fishing vessel
18-Feb-2014	9:20:49	11	30.166872	-80.273302	4	3	4	85°	3	Recreational fishing vessel
18-Feb-2014	9:21:58	12	30.166868	-80.317200	4	2	4	60°	1	Recreational fishing vessel
18-Feb-2014	9:22:17	12	30.166833	-80.329108	4	3	4	95°	1	Recreational fishing vessel
18-Feb-2014	9:23:26	13	30.166904	-80.372777	4	3	4	85°	1	Recreational fishing vessel
18-Feb-2014	9:47:42	20	30.232554	-80.313612	5	3	4	80°	2	Recreational fishing vessel
18-Feb-2014	9:49:30	17	30.232566	-80.242086	5	2	2	45°	1	Recreational fishing vessel
18-Feb-2014	10:15:14	23	30.300576	-80.239038	6	3	1	90°	1	Recreational fishing vessel
18-Feb-2014	10:17:00	23	30.300520	-80.306059	6	3	4	75°	1	Recreational fishing vessel
18-Feb-2014	10:18:25	24	30.300483	-80.359483	6	3	4	90°	3	Recreational fishing vessel
18-Feb-2014	11:02:15	38	29.965155	-80.461960	1	2	4	80°	4	Recreational fishing vessel
18-Feb-2014	11:05:33	39	29.965395	-80.335483	1	2	4	90°	3	Recreational fishing vessel
18-Feb-2014	11:08:25	40	29.965343	-80.224855	1	2	3	90°	2	Recreational fishing vessel
18-Feb-2014	11:40:54	47	30.032402	-80.271471	2	2	2	110°	2	Recreational fishing vessel
18-Feb-2014	11:42:10	39	30.032361	-80.319160	2	2	3	90°	3	Recreational fishing vessel
18-Feb-2014	11:44:31	48	30.032251	-80.408562	2	2	3	90°	2	Recreational fishing vessel
18-Feb-2014	11:47:41	49	30.032145	-80.532083	2	2	3	90°	1	Recreational fishing vessel
14-Mar-2014	10:37:10	12	30.300244	-80.479766	6	3	1	60°	1	Recreational fishing vessel
14-Mar-2014	14:22:32	42	29.965411	-80.354143	1	3	3	45°	1	Recreational fishing vessel
14-Mar-2014	14:22:32	32	29.965411	-80.354143	1	3	3	45°	1	Recreational fishing vessel
14-Mar-2014	15:04:42	37	30.032134	-80.418207	2	3	2	60°	1	Recreational fishing vessel

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #	Comments
15-Mar-2014	9:04:40	50	30.566695	-80.181452	10	3	2	90°	1	Recreational fishing vessel
15-Mar-2014	9:40:16	10	30.499836	-80.144813	9	3	3	45°	1	Recreational fishing vessel
15-Mar-2014	9:44:45	11	30.500100	-80.309712	9	3	2	90°	1	Recreational fishing vessel
15-Mar-2014	10:35:25	21	30.366026	-80.234490	7	3	2	45°	1	Recreational fishing vessel
15-Mar-2014	11:14:01	28	30.300004	-80.301385	6	2	3	90°	3	Recreational fishing vessel
15-Mar-2014	11:15:17	73	30.300071	-80.253190	6	3	2	90°	2	Recreational fishing vessel
15-Mar-2014	11:41:14	76	30.233304	-80.227219	5	3	3	30°	3	Recreational fishing vessel
15-Mar-2014	11:41:56	32	30.233275	-80.252756	5	3	2	60°	3	Recreational fishing vessel
15-Mar-2014	13:47:22	42	29.965214	-80.350405	1	2	3	90°	14	Recreational fishing vessel
15-Mar-2014	14:17:38	89	30.032386	-80.274906	2	3	2	60°	2	Recreational fishing vessel
15-Mar-2014	14:17:39	47	30.032450	-80.275551	2	3	30	90°	8	Recreational fishing vessel
15-Mar-2014	15:07:41	111	30.100016	-80.281955	3	3	2	90°	3	Recreational fishing vessel
15-Mar-2014	15:34:04	114	30.167094	-80.248868	4	3	2	90°	2	Recreational fishing vessel
15-Mar-2014	15:34:11	65	30.167235	-80.253767	4	3	2	60°	5	Recreational fishing vessel
7-May-2014	9:42:13	10	30.499180	-80.418486	9	3	4	45°	1	Sailboat
7-May-2014	11:53:03	35	30.232443	-80.176642	5	2	3	45°	1	Recreational fishing vessel
7-May-2014	11:53:59	43	30.232478	-80.211080	5	2	4	45°	1	Recreational fishing vessel
7-May-2014	11:55:01	44	30.232562	-80.248808	5	2	1	90°	1	Recreational fishing vessel
7-May-2014	14:24:58	58	30.167066	-80.268381	4	1	3	45°	4	Recreational fishing vessel
7-May-2014	15:20:43	50	30.029649	-80.576998	2	1	3	60°	1	Recreational fishing vessel
7-May-2014	15:37:48	54	30.032724	-80.321629	2	1	1	60°	1	Recreational fishing vessel
7-May-2014	15:38:37	77	30.032844	-80.292594	2	1	3	45°	1	Recreational fishing vessel
7-May-2014	16:10:42	87	29.964945	-79.830888	1	1	3	90°	2	Sailboats
8-May-2014	8:55:30	3	30.233412	-80.363463	5	3	2	30°	1	Recreational

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #	Comments
										fishing vessel
8-May-2014	9:28:34	8	30.299946	-80.256949	6	3	3	45°	1	Recreational fishing vessel
8-May-2014	10:25:56	18	30.433300	-80.190207	8	3	3	45°	1	Recreational fishing vessel
8-May-2014	10:58:41	24	30.499925	-80.207293	9	3	4	90°	1	Recreational fishing vessel
8-May-2014	10:59:12	25	30.500068	-80.190148	9	3	1	60°	1	Recreational fishing vessel
8-May-2014	15:25:26	63	30.032383	-80.296691	2	3	3	60°	1	Recreational fishing vessel
25-Jun-2014	9:04:03	3	30.566463	-80.473697	10	3	3	45°	1	Sailboat
25-Jun-2014	10:51:52	24	30.366048	-80.483761	7	3	3	90°	1	Recreational fishing vessel
25-Jun-2014	10:55:05	25	30.365793	-80.590607	7	3	3	90°	1	Tug
25-Jun-2014	15:21:48	74	30.100356	-80.560730	3	2	3	60°	1	Recreational fishing vessel
25-Jun-2014	16:29:32	80	29.966229	-80.278402	1	2	2	90°	2	Recreational fishing vessel
26-Jun-2014	9:46:24	7	30.032531	-80.270737	2	3	3	60°	1	Large fishing vessel
26-Jun-2014	10:11:53	16	30.099847	-80.570942	3	3	3	60°	1	Recreational fishing vessel
26-Jun-2014	10:46:25	17	30.167002	-80.246973	4	3	4	45°	1	Recreational fishing vessel
26-Jun-2014	11:02:02	21	30.232013	-80.657614	5	3	1	45°	1	Recreational fishing vessel
26-Jun-2014	11:26:07	24	30.232444	-80.146154	5	3	4	90°	2	Recreational fishing vessel
10-Jul-2014	9:37:54	6	30.300886	-80.263492	6	2	3	30°	1	Recreational fishing vessel
10-Jul-2014	10:26:38	33	30.363968	-80.224850	7	2	1	60°	1	Recreational fishing vessel
10-Jul-2014	11:16:46	37	30.498439	-80.539361	9	2	2	90°	1	Recreational fishing vessel
10-Jul-2014	15:17:25	87	30.031806	-80.657652	2	3	3	45°	1	Recreational fishing vessel
10-Jul-2014	15:56:32	94	29.966243	-80.278700	1	3	2	45°	1	Recreational fishing vessel
11-Jul-2014	9:57:29	19	30.432534	-80.486680	8	2	1	90°	1	Recreational fishing vessel
11-Jul-2014	10:20:52	19	30.366259	-79.869894	7	2	4	60°	1	Recreational fishing vessel
11-Jul-2014	11:01:59	37	30.368859	-80.625787	7	2	3	60°	3	Recreational fishing vessel

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #	Comments
11-Jul-2014	14:39:16	66	30.101059	-80.400652	3	3	2	90°	1	Recreational fishing vessel
9-Aug-2014	10:10:10	14	30.299377	-80.693395	6	2	2	90°	1	Recreational fishing vessel
9-Aug-2014	10:17:14	15	30.366152	-80.540866	7	2	3	60°	1	Recreational fishing vessel
9-Aug-2014	11:07:32	24	30.432360	-80.288074	8	3	3	45°	1	Recreational fishing vessel
9-Aug-2014	11:12:25	24	30.431933	-80.465594	8	3	2	60°	1	Recreational fishing vessel
9-Aug-2014	11:24:10	27	30.499348	-80.587107	9	3	2	60°	1	Recreational fishing vessel
9-Aug-2014	11:24:15	27	30.499418	-80.584457	9	3	2	60°	2	Recreational fishing vessel
9-Aug-2014	11:25:40	28	30.499597	-80.532585	9	3	2	60°	1	Recreational fishing vessel
9-Aug-2014	11:27:40	28	30.500034	-80.460124	9	3	3	60°	4	Recreational fishing vessel
9-Aug-2014	12:29:37	40	30.565603	-80.657170	10	2	3	90°	1	Recreational fishing vessel
9-Aug-2014	14:30:40	50	29.965030	-80.674621	1	2	4	60°	1	Recreational fishing vessel
9-Aug-2014	14:40:54	50	29.966126	-80.298866	1	2	3	90°	1	Recreational fishing vessel
9-Aug-2014	15:21:09	60	30.031768	-80.497580	2	2	2	60°	1	Recreational fishing vessel
9-Aug-2014	15:43:16	65	30.101308	-80.195615	3	2	3	45°	1	Recreational fishing vessel
9-Aug-2014	16:11:32	69	30.166216	-80.336453	4	3	4	45°	1	Recreational fishing vessel
10-Aug-2014	9:19:22	3	29.964458	-80.674302	1	3	2	60°	1	Recreational fishing vessel
10-Aug-2014	10:17:58	11	30.031406	-80.473923	2	3	1	90°	2	Recreational fishing vessel
10-Aug-2014	10:27:33	14	30.104934	-80.689759	3	3	3	90°	1	Recreational fishing vessel
10-Aug-2014	11:10:05	19	30.165375	-80.336159	4	3	3	60°	2	Recreational fishing vessel
11-Sep-2014	9:12:26	9	30.567005	-80.269914	10	2	3	60°	1	Recreational fishing vessel
11-Sep-2014	9:53:21	18	30.498193	-80.566489	9	1	2	45°	1	Recreational fishing vessel
11-Sep-2014	9:59:35	21	30.498113	-80.650334	9	1	1	45°	1	Recreational fishing vessel
11-Sep-2014	10:13:40	29	30.433448	-80.466019	8	2	2	90°	1	Recreational fishing vessel

Date	Time	Way Point	Latitude	Longitude-1	Track Number	BSS	Angle out	Degree Forward	Best #	Comments
11-Sep-2014	11:21:32	52	30.299828	-80.631533	6	1	2	60°	1	Recreational fishing vessel
11-Sep-2014	14:48:25	70	30.100267	-80.308959	3	3	3	45°	1	Recreational fishing vessel
12-Sep-2014	10:59:59	26	30.498886	-80.602657	9	2	3	90°	1	Recreational fishing vessel
12-Sep-2014	14:38:34	59	30.101623	-80.600054	3	3	3	45°	1	Recreational fishing vessel
21-Oct-2014	9:45:41	6	30.290318	-80.079847	6	3	4	60°	1	Cruising vessel
21-Oct-2014	10:07:29	9	30.290027	-80.498461	6	3	3	90°	1	Recreational fishing vessel
21-Oct-2014	11:00:35	17	30.423327	-80.437757	8	3	3	90°	1	Recreational fishing vessel
21-Oct-2014	11:52:26	25	30.556636	-80.328293	10	3	2	60°	1	Recreational fishing vessel
21-Oct-2014	14:43:07	35	30.022688	-80.228285	2	2	2	60°	1	Sailboat
22-Oct-2014	9:18:11	7	30.489357	-79.851432	9	4	4	45°	1	Sailboat



1

2 Figure 20. Other vessel sightings.

5. Acknowledgements

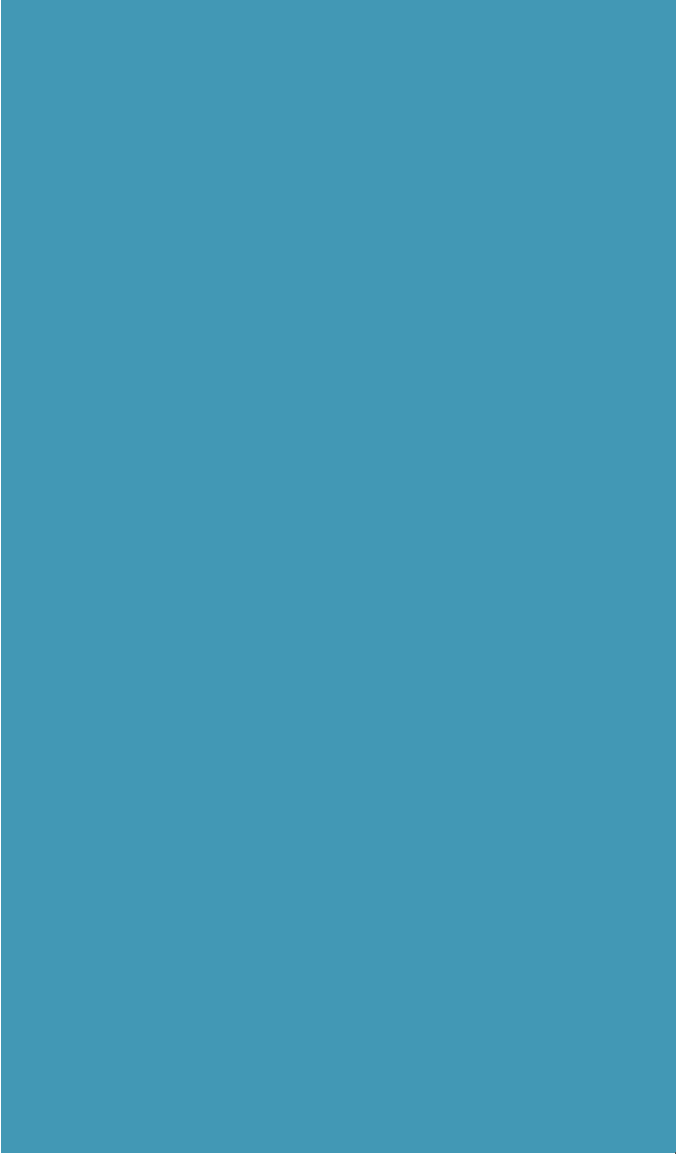
For collaborative efforts, we thank our colleagues at Duke University Marine Lab (Kim Urian, Andy Read, Heather Foley, Zach Swaim, Jennifer Dunn, and Lynn Hodge) and St. Andrews University (Charles Paxton and Len Thomas). We thank Ed Coffman, owner and operator of Orion Aviation, and his highly skilled pilots: Rich Waterman, Tom Brown, Rocky Walker, John Esties, and Bob Stickle, for excellent flying and a high level of professionalism. We thank US Fleet Forces Command and Joel Bell (NAVFAC Atlantic) for supporting this work. Surveys are conducted under National Oceanic and Atmospheric Administration Scientific Permit No. 16473, held by the University of North Carolina Wilmington, and National Oceanic and Atmospheric Administration General Authorization Letters of Confirmation No. 16185 held by Duke University.

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- 1 Waring, G. T., E. Josephson, K. Maze-Foley, and P.E. Rosel, editors. 2014. *U.S. Atlantic and*
2 *Gulf of Mexico Marine Mammal Stock Assessments – 2013*. NOAA Technical
3 Memorandum NMFS-NEFSC-228. National Marine Fisheries Service, Northeast
4 Fisheries Science Center, Woods Hole, Massachusetts.

- 5 Waring, G.T., E. Josephson, K. Maze-Foley, and P.E. Rosel, editors. 2015. *Draft U.S. Atlantic*
6 *and Gulf of Mexico Marine Mammal Stock Assessments – 2014*. NOAA Technical
7 Memorandum NMFS-NEFSC-xx. National Marine Fisheries Service, Northeast Fisheries
8 Science Center, Woods Hole, Massachusetts.



A

Aerial Daily Sheet



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AERIAL SURVEY DATA SHEET

Appendix A
Date: _____

Observer Side: _____

GPS#: _____

Page__ of__

Pilot/Co-Pilot

Observers Left/Right: _____

Hobbs:_____

[illegible]

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B

Event Codes and Species List

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Codes for Variables on USWTR Aerial Survey Data Sheet

Date: Month, Day, Year

Track#: opportunistic track line=99

Event:

- | | |
|--|---|
| 1.1 = On effort/on track | 2.0 = Sighting-breaking track/off effort (real time) |
| 1.2 = Off effort | 2.3 = Vessel sighting |
| 3.1 = Change in environmental conditions | 2.4 = Sighting of marine mammal (real location) |
| | 2.41 = Location of Sighting Cue, No Animals sighted |
| 10.0 = Opportunistic sighting(s) | 2.42 = Break from sighting |
| PF = Preflight | |
| XB = Cross Beach | 2.7 = Sighting of sea turtle (real location) |
| WU = Wheels Up | 2.8 = Sighting of large vessel (Military, commercial, etc.) |
| WD = Wheels Down | 2.9 = Unidentified sighting, requires comments |
| TE = Transit Leg on Effort | |

Confidence of cue

- 1 = definite
- 2 = probable
- 3 = possible/unsure

Visibility:

- 1 = clear to horizon
- 2 = half the distance to the horizon
- 3 = less than half the distance to the horizon

Beaufort Sea State:

- 0 = slick, calm, mirror-like
- 1 = small waves
- 2 = whitecaps 0-33%, waves 1-2 feet
- 3 = whitecaps 33-50%, waves 2-3 feet
- 4 = whitecaps 50-65%, waves 3-5 feet
- 5 = whitecaps >65%, waves >5 feet
- 6 = too rough too survey

Sighting Cues:

- 1 = Blow
- 2 = Splash
- 3 = Body Part
- 4 = Breach
- 5 = Other (needs comments)

Cloud Cover:

- 01 = clear
- 02 = partly cloudy
- 03 = continuous layer of clouds
- 04 = rain
- 05 = haze
- 99 = other, requires comments

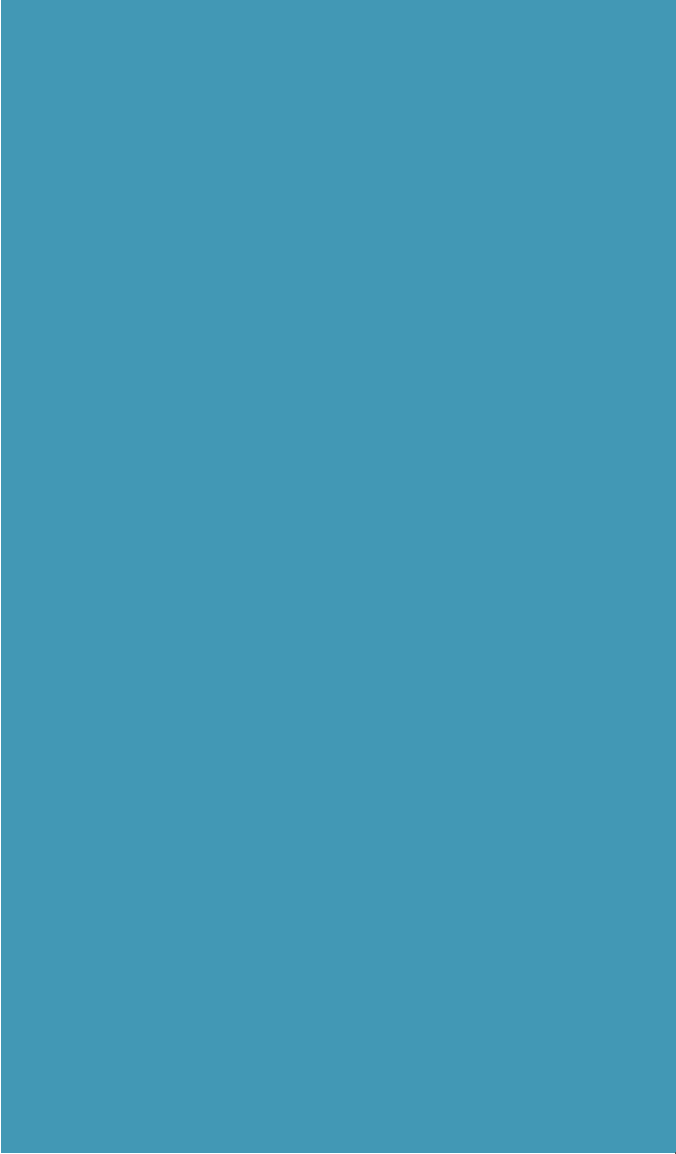
Vertical Angle is given in rough increments of 20 degrees with 1 being directly on the trackline and 4 being anything outside of survey wide to horizon

Horizontal Angle is given assuming the nose of the plane is 0 degrees and directly off the wing is 90 degrees – measurements are taken from 1-180 on each side of the plane.

Glare

- | | |
|--------------|------------|
| 0 = No glare | 1 = 0-25 % |
| 2 = 25 -50 % | 3 = >50% |

Species List for Aerial Surveys		
Common Name	Scientific Name	Species Code
Cetaceans		
North Atlantic right whale	<i>Eubalaena glacialis</i>	Egl
Minke whale	<i>Balaenoptera acutorostrata</i>	Bac
sei whale	<i>Balaenoptera borealis</i>	Bbo
fin whale	<i>Balaenoptera physalus</i>	Bph
Brydes whale	<i>Balaenoptera edeni</i>	Bed
humpback whale	<i>Megaptera novaeangliae</i>	Mno
unidentified balaenopterid	Family <i>Balaenopteridae</i>	BALA
sperm whale	<i>Physeter macrocephalus</i>	Pma
pygmy sperm whale	<i>Kogia breviceps</i>	Kbr
dwarf sperm whale	<i>Kogia sima</i>	Ksi
unidentified <i>Kogia</i>	<i>Kogia</i> spp.	KOGI
Northern bottlenose whale	<i>Hyperoodon ampullatus</i>	Ham
Cuvier's beaked whale	<i>Ziphius cavirostris</i>	Zca
Mesoplodon beaked whale	Genus <i>Mesoplodon</i>	MESO
unidentified beaked whale	Family <i>Ziphiidae</i>	ZIPH
harbor porpoise	<i>Phocoena phocoena</i>	Pph
killer whale	<i>Orcinus orca</i>	Oor
melon-headed whale	<i>Peponocephala electra</i>	PeI
pygmy killer whale	<i>Feresa attenuata</i>	Fat
false killer whale	<i>Pseudorca crassidens</i>	Per
Risso's dolphin	<i>Grampus griseus</i>	Ggr
long-finned pilot whale	<i>Globicephala melas</i>	Gme
short-finned pilot whale	<i>Globicephala macrorhynchus</i>	Gma
unidentified pilot whale	Genus <i>Globicephala</i>	GLOB
rough-toothed dolphin	<i>Steno bredanensis</i>	Sbr
Atlantic white-sided dolphin	<i>Lagenorhynchus acutus</i>	Lac
Fraser's dolphin	<i>Lagenodelphis hosei</i>	Lho
common dolphin	<i>Delphinus delphis</i>	Dde
bottlenose dolphin	<i>Tursiops truncatus</i>	Ttr
spotted dolphin	<i>Stenella frontalis</i>	Sfr
striped dolphin	<i>Stenella coeruleoalba</i>	Sco
spinner dolphin	<i>Stenella longirostris</i>	Scl
unidentified <i>Stenella</i>	Genus <i>Stenella</i>	STEN
unidentified delphinid	Family <i>Delphinidae</i>	DELP
unidentified cetacean		CETA
Pinnipeds		
gray seal	<i>Halichoerus grypus</i>	Hgr
harbor seal	<i>Phoca vitulina</i>	Pvi
harp seal	<i>Phoca groenlandica</i>	Pgr
hooded seal	<i>Cystophora cristata</i>	Ccr
unidentified phocid	Family <i>Phocidae</i>	PHOC
Sea Turtles		
loggerhead	<i>Caretta caretta</i>	Cca
leatherback	<i>Dermochelys coriacea</i>	Dco
green	<i>Chelonia mydas</i>	Cmy
Kemp's ridley	<i>Lepidochelys kempii</i>	Lke
hawksbill	<i>Eretmochelys imbricata</i>	Eim
unidentified sea turtle		TURT
Other interesting sightings		
ocean sunfish	<i>Mola mola</i>	Mmo
basking shark	<i>Cetorhinus maximus</i>	Cma
whale shark	<i>Rhincodon typus</i>	Rty
manta ray	<i>Manta birostris</i>	Mbi
cownose rays	<i>Rhinoptera bonasus</i>	Rbo



C

Notes on Sighting Summary
Sheets



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The Sighting Summary Sheet

The Sighting Summary, adapted from the Sighting Data Sheet used in the field, integrates data gathered in the field with results from lab analyses to provide a full summary of each marine mammal sighting (note – this sheet only deals with marine mammal sightings). A Sighting Summary is to be completed for all sightings, including sightings made while off-effort during transits between survey legs, as well as sighting cues that never led to a sighting that was relocated.

The Sighting Summary sheet is broken into four sections; “Initial Sighting on Track”, “Time and Position of Sighting”, “Final Time and Position of Sighting”, and “Behavior and Additional Comments”. Each section and sub-heading will be detailed below.

Initial Sighting on Track

Time: The time the “break track” GPS way-point was taken.

WP#: GPS way-point number of the break track.

Lat/Long: The latitude and longitude associated with the break track way-point.

Track Line: The track line surveyed when the sighting was made.

On/Off Effort: Whether the sighting was made during an active survey track line (*i.e.* on effort) or during transit BETWEEN track lines (*i.e.* off effort). Sightings made during off effort transit to and from the range are NOT included in the sighting summaries.

Sighting Cue: Whether the initial sighting was a splash, a breach or body part.

Vertical Angle: Vertical “angle” between 1 and 4, the lower edge of view (“1”) to the horizon (“4”). A subjective and relative measure of how far away from the track line the initial sighting occurred.

Horizontal Bearing in Degrees: The horizontal degrees from front to back (0 to 180) at which the sighting occurred.

Observer: Three lettered initial of the observer who made the sighting.

Observer Side: On which side of the plane in the direction of travel the sighting occurred.

Time and Position of Sighting

Time: The time the GPS way-point was taken while relocating animals and circling above.

WP#: GPS way-point number of the sighting.

Lat/Long: The latitude and longitude associated with the way point obtained while circling over animals.

Beaufort Sea State: The sea state observed during the sighting.

Species: Scientific binomial name of the marine mammal species involved in the sighting. When species identity could not be established unequivocally, the next higher taxonomic level to which identity could be established was used. If a cetacean was identified as a dolphin but images obtained during the encounter were not sufficient to establish species ID, the designation “unidentified delphinid” or “*T. truncatus*/*S. frontalis*” is used. If the animal could be ID’d as a cetacean only, then “unidentified cetacean” is used. If a large body was observed but it could not be established whether a cetacean, fish/shark or turtle was involved in the sighting, the designation “unidentified marine vertebrate” is used.

Criteria used to identify species: Which species specific diagnostic features were used in classifying a sighting to species (see information on diagnosis of species).

Best images used for species ID: The images obtained during the sighting that best displayed the features used to establish species.

Numbers (Low/ High/ Best): Low, high, and best estimate of number of animals involved in the sighting.

Calves observed? Whether any calves were observed during the encounter. A conservative measure is used, in that only animals roughly half the size of the associated larger animal (the presumed mother) are designated as calves.

Calculated Distance from Track Line: The distances between the break track waypoint (2.0) and the initial position of each sighting (2.4) is calculated using the online software Scripts Movable

Type (<http://www.movable-type.co.uk/scripts/latlong.html>). Since there is a bias in estimating the location of a group of mobile marine mammals from a fast moving airplane, the distances calculated between break track and sighting are rounded to 0.1 km.

Photographer: Three lettered initials of observer seated in the right camera seat.

Card #: Memory card on which the photos from the particular sighting was made.

Frame Numbers: Starting and ending frame number.

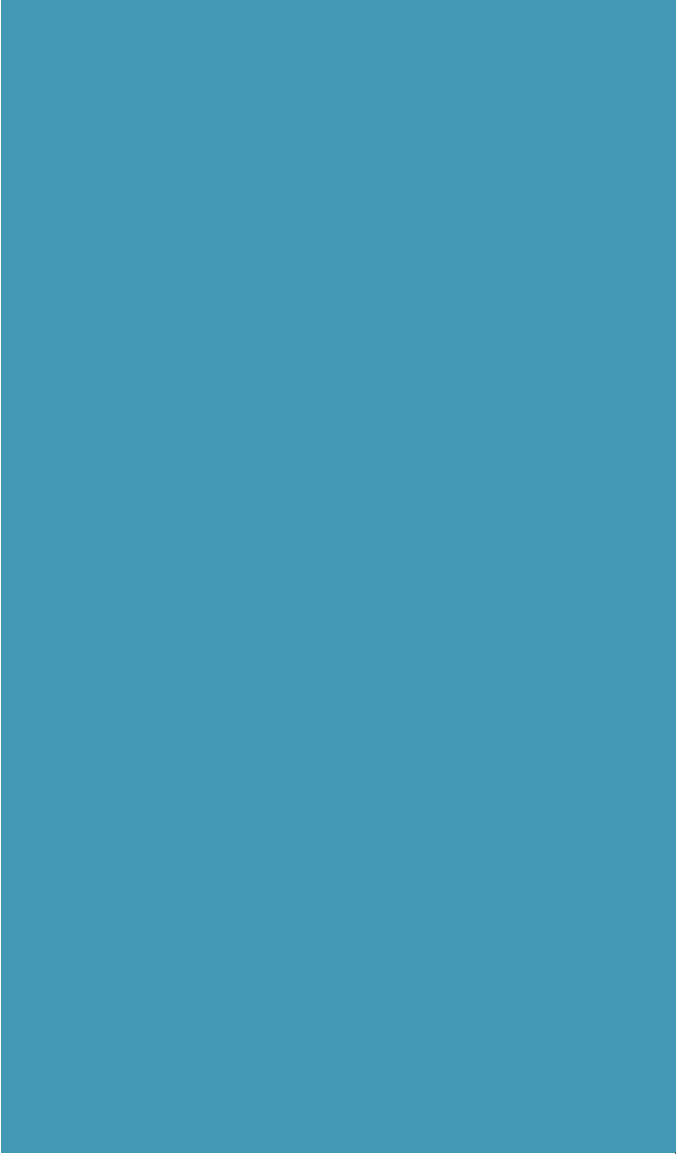
Spacer: Image used to separate sighting to clarify when one sighting ends and the next begins. Image typically of interior of plane or a 45 degree angle shot of the horizon. If taking a shot of the interior of the plane, put the camera focus setting on "manual", take the picture, then immediately set it back to "automatic".

Final Time and Position of Sighting

Time: WP#: Lat: Long: Calculated Distance traveled: → see section above.

Behavior and Additional Comments

Any behavioral notes obtained during the sighting (*e.g.* group formation, relative travel speed, feeding events or presumed copulation attempts, presence of other cetaceans or sharks in or around the animal(s) in the sighting, interaction with inanimate objects such marine debris). This section also includes notes on altitude of the survey plane during the encounter as well as any indications (or lack thereof) of the animal(s) reacting to the presence of the plane.



D

Sighting Summary Sheets

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Monday, January 20, 2014 Sighting # 1

Initial sighting on Track

Time: 9:46 WP#: 10 Lat: 30.432867 Long: -80.573141
Vertical Angle: 2 Horizontal Bearing in Degrees: 100 Sighting Cue: Body
On/Off Effort: On Trackline: 8 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: N/A WP#: N/A Lat: N/A Long: N/A
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 1 / 1 / 1
Features used in Species ID: Alternating light and dark pattern down body, white tip to rostrum

Representative images used for Species ID: N/A
Photographer: Ryan Frame numbers: N/A Spacer: N/A
Calculated distance from Trackline: N/A

Final Time and Position of Sighting

Time: 9:54 WP#: 11 Lat: 30.432147 Long: -80.576849
Calculated Distance Traveled: N/A

Behavior and Additional Comments

No resight, not photos

Monday, January 20, 2014 Sighting # 2

Initial sighting on Track

Time: 10:52 WP#: 21 Lat: 30.299936 Long: -80.403568
Vertical Angle: 3 Horizontal Bearing in Degrees: 45 Sighting Cue: Splash
On/Off Effort: On Trackline: 6 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 10:53 WP#: 22 Lat: 30.304472 Long: -80.389857
Species: *Stenella frontalis* Numbers (Low/High/Best): 45 / 60 / 50
Features used in Species ID: Alternating light and dark pattern down body, white tip to rostrum

Representative images used for Species ID: 503, 516, 521, 522
Photographer: Ryan Frame numbers: 492 - 536 Spacer: 537
Calculated distance from Trackline: 1.41 km

Final Time and Position of Sighting

Time: 10:58 WP#: 23 Lat: 30.300329 Long: -80.378193
Calculated Distance Traveled: 1.21 km

Behavior and Additional Comments

Traveling in a big heard, hitting the surface hard, darting different directions. Calves present

Monday, January 20, 2014 Sighting # 3

Initial sighting on Track

Time: NA WP#: NA Lat: NA Long: NA
Vertical Angle: 3 Horizontal Bearing in Degrees: 90 Sighting Cue: Wake
On/Off Effort: Off Trackline: Inshore Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 11:56 WP#: 32 Lat: 30.482727 Long: -81.237584
Species: *Eubalaena glacialis* Numbers (Low/High/Best): 2 / 2 / 2
Features used in Species ID: Large robust dark body with collasity patterns around head.

Representative images used for Species ID: 584, 593, 605, 640
Photographer: Ryan Frame numbers: 539 - 641 Spacer: 642
Calculated distance from Trackline: NA

Final Time and Position of Sighting

Time: NA WP#: NA Lat: NA Long: NA
Calculated Distance Traveled: NA

Behavior and Additional Comments

Animals observed while transiting in from our survey site.

Monday, January 20, 2014 Sighting # 4

Initial sighting on Track

Time: 13:59 WP#: 36 Lat: 30.166288 Long: -80.441098
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 4 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 14:02 WP#: 37 Lat: 30.164006 Long: -80.440299
Species: *Stenella frontalis* Numbers (Low/High/Best): 35 / 50 / 45
Features used in Species ID: Alternating light and dark body coloration, white tip to rostrum, spotting pattern along body.

Representative images used for Species ID: 656, 665,
Photographer: Ryan Frame numbers: 643 - 675 Spacer: 676
Calculated distance from Trackline: 0.26 km

Final Time and Position of Sighting

Time: 14:09 WP#: 38 Lat: 30.165925 Long: -80.422684
Calculated Distance Traveled: 1.71 km

Behavior and Additional Comments

In large group then dispersed into four groups and then came together again.

Monday, January 20, 2014 Sighting # 5

Initial sighting on Track

Time: 14:48 WP#: 44 Lat: 30.100126 Long: -80.487356
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 3 Beaufort Sea State: 3
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 14:51 WP#: 45 Lat: 30.103127 Long: -80.489577
Species: *Stenella frontalis* Numbers (Low/High/Best): 12 / 20 / 18
Features used in Species ID: Alternating light and dark down body, white tip to rostrum, spotting.

Representative images used for Species ID: 681, 687
Photographer: Ryan Frame numbers: 677 - 690 Spacer: 691
Calculated distance from Trackline: 0.39 km

Final Time and Position of Sighting

Time: 14:57 WP#: 46 Lat: 30.090753 Long: -80.490669
Calculated Distance Traveled: 1.38 km

Behavior and Additional Comments

Dispersing.

Monday, January 20, 2014 Sighting # 6

Initial sighting on Track

Time: 15:34 WP#: 53 Lat: 29.965296 Long: -79.853583
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 1 Beaufort Sea State: 3
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 15:35 WP#: 524 Lat: 29.966535 Long: -79.853658
Species: *Tursiops truncatus* Numbers (Low/High/Best): 20 / 30 / 25
Features used in Species ID: Uniform grey, robust

Representative images used for Species ID: 692, 695, 709, 710
Photographer: Ryan Frame numbers: 692 - 717 Spacer: 718
Calculated distance from Trackline: 0.13 km

Final Time and Position of Sighting

Time: 15:37 WP#: 55 Lat: 29.971693 Long: -79.845070
Calculated Distance Traveled: 1.01 km

Behavior and Additional Comments

Traveling fast in one direction.

Monday, January 20, 2014 Sighting # 7

Initial sighting on Track

Time: NA WP#: NA Lat: NA Long: NA
Vertical Angle: 3 Horizontal Bearing in Degrees: 90 Sighting Cue: Wake
On/Off Effort: Off Trackline: Near range Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 16:06 WP#: 58 Lat: 29.965050 Long: -80.796355
Species: *Eubalaena glacialis* Numbers (Low/High/Best): 2 / 2 / 2
Features used in Species ID: Large, robust black body with collasities, baleen whale.

Representative images used for Species ID: 731, 741, 749, 772, 776, 811, 813
Photographer: Ryan Frame numbers: 720 - 827 Spacer: 828
Calculated distance from Trackline: NA

Final Time and Position of Sighting

Time: NA WP#: NA Lat: NA Long: NA
Calculated Distance Traveled: NA

Behavior and Additional Comments

Whales identified as Egl # 1323 and Egl # 1425

Tuesday, January 21, 2014 Sighting # 1

Initial sighting on Track

Time: 9:28 WP#: 5 Lat: 30.49962 Long: -80.086982
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 9 Beaufort Sea State: 5
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 9:32 WP#: 6 Lat: 30.50615 Long: -80.083128
Species: *Physeter macrocephalus* Numbers (Low/High/Best): 1 / 1 / 1
Features used in Species ID: Large asymmetrical head, forward 45 degree angle to blow,
wrinkled body appearance
Representative images used for Species ID: 833, 864, 841
Photographer: Erin Frame numbers: 831 - 842 Spacer: 843
Calculated distance from Trackline: 0.81 km

Final Time and Position of Sighting

Time: 9:36 WP#: 8 Lat: 30.50791 Long: -80.075858
Calculated Distance Traveled: 0.72 km

Behavior and Additional Comments

Wow, Difficult to relocate animal because of high sea state. Animal surfaced a few times before we lost sight of it.

Sunday, February 16, 2014 Sighting # 1

Initial sighting on Track

Time: 10:05 WP#: 13 Lat: 30.432688 Long: -80.603224
Vertical Angle: 90 Horizontal Bearing in Degrees: 2 Sighting Cue: Body
On/Off Effort: On Trackline: 8 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: N/A WP#: N/A Lat: N/A Long: N/A
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 1 / 1 / 1
Features used in Species ID: N/A

Representative images used for Species ID: N/A
Photographer: N/A Frame numbers: N/A Spacer: N/A
Calculated distance from Trackline: N/A

Final Time and Position of Sighting

Time: 10:13 WP#: 14 Lat: 30.437871 Long: -80.594222
Calculated Distance Traveled: N/A

Behavior and Additional Comments

Traveling subsurface at the time of initial sighting. Not re-sighted.

Sunday, February 16, 2014 Sighting # 2

Initial sighting on Track

Time: 13:01 WP#: 29 Lat: 30.302028 Long: -80.679253
Vertical Angle: 3 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 7 Beaufort Sea State: 1
Observer: Sarah Observer side: Left

Actual Time and Position of Sighting

Time: 1304 WP#: 30 Lat: 30.29557 Long: -80.686284
Species: *Tursiops truncatus* Numbers (Low/High/Best): 2 / 2 / 2
Features used in Species ID: Robust body appearance, uniform grey coloration.

Representative images used for Species ID: 856
Photographer: Erin Frame numbers: 844 - 856 Spacer: 857
Calculated distance from Trackline: 0.98 km

Final Time and Position of Sighting

Time: 13:37 WP#: 31 Lat: 30.281235 Long: -80.659811
Calculated Distance Traveled: 3.0 km

Behavior and Additional Comments

Subsurface travel with deeper dives, not surfacing often.

Sunday, February 16, 2014 Sighting # 3

Initial sighting on Track

Time: 15:24 WP#: 58 Lat: 30.397020 Long: -80.734435
Vertical Angle: 3 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: Off Trackline: N/A Beaufort Sea State: 1
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 15:28 WP#: 59 Lat: 30.402790 Long: -80.736205
Species: *Eubalaena glacialis* Numbers (Low/High/Best): 1 / 1 / 1
Features used in Species ID: Callosities, large, black bodied, no dorsal fin, short pectorals

Representative images used for Species ID: 0923 - 0925
Photographer: Erin Frame numbers: 0865 - 0927 Spacer: 0928
Calculated distance from Trackline: 067 km

Final Time and Position of Sighting

Time: 15:42 WP#: 62 Lat: 30.417493 Long: -80.731734
Calculated Distance Traveled: 1.69 km

Behavior and Additional Comments

R/V Barber called for assistance in relocating Egl, we relocated it and saw it was entangled, called FWS
Duke tagged the animal and FWS put a tracking buoy on it and disentangled the following day off of GA

Monday, February 17, 2014 Sighting # 1

Initial sighting on Track

Time: 8:39 WP#: 4 Lat: 29.964910 Long: -80.638713
Vertical Angle: 1 Horizontal Bearing in Degrees: 60 Sighting Cue: Splash
On/Off Effort: On Trackline: 1 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 8:42 WP#: 5 Lat: 29.964943 Long: -80.636759
Species: *Stenella frontalis* Numbers (Low/High/Best): 5 / 10 / 7
Features used in Species ID: Alternating light and dark pattern down body, white tip to nose, spotting
Representative images used for Species ID: 971, 972
Photographer: Sarah Frame numbers: 932 - 986 Spacer: 987
Calculated distance from Trackline: 0.19 km

Final Time and Position of Sighting

Time: 8:45 WP#: 6 Lat: 29.959289 Long: -80.652525
Calculated Distance Traveled: 1.64 km

Behavior and Additional Comments

Traveling fast, darting in different directions, circling

Monday, February 17, 2014 Sighting # 2

Initial sighting on Track

Time: 9:52 WP#: 23 Lat: 30.365921 Long: -80.520808
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 7 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 9:53 WP#: 24 Lat: 30.365241 Long: -80.525349
Species: *Stenella frontalis* Numbers (Low/High/Best): 8 / 15 / 10
Features used in Species ID: Alternating light and dark pattern down body, spotting
Representative images used for Species ID: 1001, 1027, 1034
Photographer: Sarah Frame numbers: 988 - 1041 Spacer: 1042
Calculated distance from Trackline: 0.44 km

Final Time and Position of Sighting

Time: N/A WP#: N/A Lat: N/A Long: N/A
Calculated Distance Traveled: N/A

Behavior and Additional Comments

Calf present

Monday, February 17, 2014 Sighting # 3

Initial sighting on Track

Time: 10:14 WP#: 29 Lat: 30.365382 Long: -79.823993
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 7 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 10:20 WP#: 30 Lat: 30.371350 Long: -79.823069
Species: *Megaptera novaeangliae* Numbers (Low/High/Best): 1 / 1 / 1
Features used in Species ID: Large black, white, long pectoral fins

Representative images used for Species ID: 1073, 1074, 1078
Photographer: Sarah Frame numbers: 1043 - 1122 Spacer: 1123
Calculated distance from Trackline: 0.67 km

Final Time and Position of Sighting

Time: 10:29 WP#: 32 Lat: 30.360316 Long: -79.824801
Calculated Distance Traveled: 1.24 km

Behavior and Additional Comments

Traveling, regular surfacing, then a deeper dive

Monday, February 17, 2014 Sighting # 4

Initial sighting on Track

Time: 10:38 WP#: 37 Lat: 30.433604 Long: -80.026178
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 8 Beaufort Sea State: 3
Observer: Sarah Observer side: Right

Actual Time and Position of Sighting

Time: 10:41 WP#: 38 Lat: 30.435027 Long: -80.025876
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 1 / 1 / 1
Features used in Species ID: N/A

Representative images used for Species ID: N/A
Photographer: N/A Frame numbers: N/A Spacer: N/A
Calculated distance from Trackline: 0.16 km

Final Time and Position of Sighting

Time: 10:50 WP#: 39 Lat: 30.440767 Long: -80.033290
Calculated Distance Traveled: 0.96 km

Behavior and Additional Comments

Avoidance behavior, quick surfacings then back to deeper dives

Monday, February 17, 2014 Sighting # 5

Initial sighting on Track

Time: 10:58 WP#: 42 Lat: 30.433433 Long: -80.338994
Vertical Angle: 3 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 8 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 10:59 WP#: 43 Lat: 30.424717 Long: -80.333505
Species: *Stenella frontalis* Numbers (Low/High/Best): 20 / 30 / 25
Features used in Species ID: Alternating light and dark pattern down body, spotting

Representative images used for Species ID: 1148, 1180, 1197, 1223
Photographer: Sarah Frame numbers: 1124 - 1280 Spacer: 1281
Calculated distance from Trackline: 1.10 km

Final Time and Position of Sighting

Time: 11:05 WP#: 44 Lat: 30.438038 Long: -80.333474
Calculated Distance Traveled: 1.48 km

Behavior and Additional Comments

2 groups milling just below the surface, broke up into groups of 2 when we flew over

Monday, February 17, 2014 Sighting # 6

Initial sighting on Track

Time: 11:09 WP#: 46 Lat: 30.442610 Long: -80.384989
Vertical Angle: 3 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: On Trackline: 8 Beaufort Sea State: 2
Observer: Sarah Observer side: Right

Actual Time and Position of Sighting

Time: 11:09 WP#: 47 Lat: 30.446629 Long: -80.378940
Species: *Stenella frontalis* Numbers (Low/High/Best): 4 / 6 / 5
Features used in Species ID: Alternating light and dark pattern down body

Representative images used for Species ID: 1300, 1305
Photographer: Sarah Frame numbers: 1282 - 1334 Spacer: 1335
Calculated distance from Trackline: 0.73 km

Final Time and Position of Sighting

Time: 11:11 WP#: 48 Lat: 30.442327 Long: -80.381935
Calculated Distance Traveled: 0.56 km

Behavior and Additional Comments

Circling, belly showing

Monday, February 17, 2014 Sighting # 7

Initial sighting on Track

Time: 11:19 WP#: 51 Lat: 30.427952 Long: -80.677663
Vertical Angle: 3 Horizontal Bearing in Degrees: 60 Sighting Cue: Body
On/Off Effort: On Trackline: 8 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 11:20 WP#: 52 Lat: 30.425173 Long: -80.677659
Species: *Tursiops truncatus* Numbers (Low/High/Best): 1 / 1 / 1
Features used in Species ID: Large bodied, uniform gray color

Representative images used for Species ID: 1351
Photographer: Sarah Frame numbers: 1336 - 1355 Spacer: 1356
Calculated distance from Trackline: 0.31 km

Final Time and Position of Sighting

Time: 11:21 WP#: 53 Lat: 30.426804 Long: -80.680277
Calculated Distance Traveled: 0.31 km

Behavior and Additional Comments

Monday, February 17, 2014 Sighting # 8

Initial sighting on Track

Time: 11:30 WP#: 57 Lat: 30.499297 Long: -80.621196
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 9 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 11:31 WP#: 58 Lat: 30.503570 Long: -80.622988
Species: *Tursiops truncatus* Numbers (Low/High/Best): 6 / 6 / 6
Features used in Species ID: Robust body, uniform gray

Representative images used for Species ID: 1371, 1385, 1396, 1398
Photographer: Sarah Frame numbers: 1357 - 1401 Spacer: 1402
Calculated distance from Trackline: 0.51 km

Final Time and Position of Sighting

Time: 11:32 WP#: 59 Lat: 30.507348 Long: -80.622933
Calculated Distance Traveled: 0.42 km

Behavior and Additional Comments

Slow subsurface travel

Monday, February 17, 2014 Sighting # 9

Initial sighting on Track

Time: 11:41 WP#: 64 Lat: 30.499575 Long: -80.328583
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 9 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 11:42 WP#: 65 Lat: 30.501782 Long: -80.326408
Species: *Stenella frontalis* Numbers (Low/High/Best): 25 / 40 / 30
Features used in Species ID: Alternating light and dark down body, spotting

Representative images used for Species ID: 1455
Photographer: Sarah Frame numbers: 1403 - 1476 Spacer: 1477
Calculated distance from Trackline: 0.32 km

Final Time and Position of Sighting

Time: 11:48 WP#: 66 Lat: 30.509781 Long: -80.322989
Calculated Distance Traveled: 0.95 km

Behavior and Additional Comments

Traveling fast, 4 groups coming together

Monday, February 17, 2014 Sighting # 10

Initial sighting on Track

Time: 12:16 WP#: 73 Lat: 30.567188 Long: -80.280693
Vertical Angle: 2 Horizontal Bearing in Degrees: 60 Sighting Cue: Splash
On/Off Effort: On Trackline: 9 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 12:18 WP#: 74 Lat: 30.576573 Long: -80.291339
Species: *Stenella frontalis* Numbers (Low/High/Best): 35 / 45 / 40
Features used in Species ID: Alternating light and dark pattern down body, spotting

Representative images used for Species ID: 1517
Photographer: Sarah Frame numbers: 1478 - 1528 Spacer: 1529
Calculated distance from Trackline: 1.46 km

Final Time and Position of Sighting

Time: 12:21 WP#: 75 Lat: 30.578180 Long: -80.290442
Calculated Distance Traveled: 0.20 km

Behavior and Additional Comments

Fast travel

Monday, February 17, 2014 Sighting # 11

Initial sighting on Track

Time: 14:29 WP#: 84 Lat: 30.299701 Long: -80.530917
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 6 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 14:30 WP#: 85 Lat: 30.308400 Long: -80.521617
Species: *Tursiops truncatus* Numbers (Low/High/Best): 2 / 2 / 2
Features used in Species ID: Robust body, uniform gray

Representative images used for Species ID: 1540, 1550, 1562, 1563
Photographer: Sarah Frame numbers: 1530 - 1567 Spacer: 1568
Calculated distance from Trackline: 1.32 km

Final Time and Position of Sighting

Time: 14:34 WP#: 86 Lat: 30.300011 Long: -80.519221
Calculated Distance Traveled: 0.96 km

Behavior and Additional Comments

Regular surfacing

Monday, February 17, 2014 Sighting # 12

Initial sighting on Track

Time: 14:39 WP#: 89 Lat: 30.299624 Long: -80.370932
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 6 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 14:41 WP#: 90 Lat: 30.301934 Long: -80.381993
Species: *Stenella frontalis* Numbers (Low/High/Best): 6 / 6 / 6
Features used in Species ID: Alternating light and dark pattern down body, spotting

Representative images used for Species ID: 1585, 1600
Photographer: Sarah Frame numbers: 1569 - 1602 Spacer: 1603
Calculated distance from Trackline: 1.09 km

Final Time and Position of Sighting

Time: 14:44 WP#: 91 Lat: 30.298273 Long: -80.377269
Calculated Distance Traveled: 0.61 km

Behavior and Additional Comments

Avoidance behavior

Monday, February 17, 2014 Sighting # 13

Initial sighting on Track

Time: 15:35 WP#: 104 Lat: 30.233319 Long: -80.556026
Vertical Angle: 1 Horizontal Bearing in Degrees: 70 Sighting Cue: Body
On/Off Effort: On Trackline: 5 Beaufort Sea State: 2
Observer: Sarah Observer side: Right

Actual Time and Position of Sighting

Time: 15:36 WP#: 105 Lat: 30.237104 Long: -80.553182
Species: *Tursiops truncatus* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 1665, 1673
Photographer: Sarah Frame numbers: 1604 - 1681 Spacer: 1682
Calculated distance from Trackline: 0.50 km

Final Time and Position of Sighting

Time: 15:39 WP#: 106 Lat: 30.234428 Long: -80.555821
Calculated Distance Traveled: 0.39 km

Behavior and Additional Comments

Deep dives, avoidance behavior

Monday, February 17, 2014 Sighting # 14

Initial sighting on Track

Time: 16:00 WP#: 116 Lat: 30.166375 Long: -80.270873
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 4 Beaufort Sea State: 2
Observer: Sarah Observer side: Right

Actual Time and Position of Sighting

Time: 16:00 WP#: 117 Lat: 30.162457 Long: -80.276923
Species: *Tursiops truncatus* Numbers (Low/High/Best): 9 / 15 / 17
Features used in Species ID: Uniform gray, robust, white peduncle

Representative images used for Species ID: 1699, 1703
Photographer: Sarah Frame numbers: 1683 - 1717 Spacer: 1718
Calculated distance from Trackline: 0.73 km

Final Time and Position of Sighting

Time: 16:04 WP#: 118 Lat: 30.157323 Long: -80.265297
Calculated Distance Traveled: 1.26 km

Behavior and Additional Comments

Slow travel, regular surfacing, white peduncle

Monday, February 17, 2014 Sighting # 15

Initial sighting on Track

Time: 16:00 WP#: 116 Lat: 30.166375 Long: -80.270873
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 4 Beaufort Sea State: 2
Observer: Sarah Observer side: Right

Actual Time and Position of Sighting

Time: 16:00 WP#: 117 Lat: 30.162457 Long: -80.276923
Species: *Stenella frontalis* Numbers (Low/High/Best): 6 / 6 / 6
Features used in Species ID: Alternating light and dark pattern down body, spotting

Representative images used for Species ID: 1722
Photographer: Sarah Frame numbers: 1719 - 1741 Spacer: 1742
Calculated distance from Trackline: 0.73 km

Final Time and Position of Sighting

Time: 16:04 WP#: 118 Lat: 30.157323 Long: -80.265297
Calculated Distance Traveled: 1.26 km

Behavior and Additional Comments

Slow travel, regular surfacing

Monday, February 17, 2014 Sighting # 16

Initial sighting on Track

Time: 16:27 WP#: 122 Lat: 30.100852 Long: -80.094582
Vertical Angle: 1 Horizontal Bearing in Degrees: 80 Sighting Cue: Body
On/Off Effort: On Trackline: 4 Beaufort Sea State: 2
Observer: Sarah Observer side: Right

Actual Time and Position of Sighting

Time: 16:27 WP#: 123 Lat: 30.102145 Long: -80.091616
Species: *Tursiops truncatus* Numbers (Low/High/Best): 20 / 35 / 30
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 1747, 1762, 1775, 1791
Photographer: Sarah Frame numbers: 1743 - 1807 Spacer: 1808
Calculated distance from Trackline: 0.32 km

Final Time and Position of Sighting

Time: 16:30 WP#: 124 Lat: 30.100719 Long: -80.087219
Calculated Distance Traveled: 0.45 km

Behavior and Additional Comments

Fast travel in a uniform direction

Tuesday, February 18, 2014 Sighting # 1

Initial sighting on Track

Time: 1022 WP#: 25 Lat: 30.300402 Long: -80.498432
Vertical Angle: 2 Horizontal Bearing in Degrees: 60 Sighting Cue: Body
On/Off Effort: On Trackline: 6 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 1024 WP#: 26 Lat: 30.303471 Long: -80.487076
Species: *Stenella frontalis* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID: Extensive spotting pattern across body, white rostrum tip.

Representative images used for Species ID: 1828, 1829
Photographer: Erin Frame numbers: 1821 - 1832 Spacer: 1832
Calculated distance from Trackline: 1.14 km

Final Time and Position of Sighting

Time: 1028 WP#: 27 Lat: 30.313425 Long: -80.484370
Calculated Distance Traveled: 1.14 km

Behavior and Additional Comments

Fast travel NE, Short surfacing intervals

Tuesday, February 18, 2014 Sighting # 2

Initial sighting on Track

Time: 1033 WP#: 29 Lat: 30.299931 Long: -80.653764
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 6 Beaufort Sea State: 3
Observer: Erin Observer side: R

Actual Time and Position of Sighting

Time: 1034 WP#: 30 Lat: 30.299437 Long: -80.651568
Species: *Stenella frontalis* Numbers (Low/High/Best): 5 / 7 / 6
Features used in Species ID: Extensive spotting pattern, white tip to rostrum.

Representative images used for Species ID: 1841
Photographer: Erin Frame numbers: 1833 - 1844 Spacer: 1844
Calculated distance from Trackline: 0.22 km

Final Time and Position of Sighting

Time: 1038 WP#: 31 Lat: 30.302396 Long: -80.647205
Calculated Distance Traveled: 0.53 km

Behavior and Additional Comments

Fast travel, short surfacing intervals; sighted as 1 group then split up and swimming as individuals

Tuesday, February 18, 2014 Sighting # 3

Initial sighting on Track

Time: 11:25 WP#: 43 Lat: 30.031864 Long: -79.935332
Vertical Angle: 1 Horizontal Bearing in Degrees: 60 Sighting Cue: Body
On/Off Effort: On Trackline: 2 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 11:30 WP#: 44 Lat: 30.034417 Long: -79.939553
Species: *Tursiops truncatus* Numbers (Low/High/Best): 6 / 8 / 7
Features used in Species ID: Robust body appearance, uniform grey coloration.

Representative images used for Species ID: 1847, 1849
Photographer: Erin Frame numbers: 1845 - 1852 Spacer: 1852
Calculated distance from Trackline: 0.50 km

Final Time and Position of Sighting

Time: 11:33 WP#: 45 Lat: 30.031376 Long: -79.958364
Calculated Distance Traveled: 1.84 km

Behavior and Additional Comments

Milling at surface in tight group then started subsurface travel

Tuesday, February 18, 2014 Sighting # 4

Initial sighting on Track

Time: 11:48 WP#: 51 Lat: 30.032446 Long: -80.565947
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 2 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 11:54 WP#: 53 Lat: 30.034815 Long: -80.559126
Species: *Tursiops truncatus* Numbers (Low/High/Best): 1 / 1 / 1
Features used in Species ID: Uniform light grey coloration.

Representative images used for Species ID: 1854
Photographer: Erin Frame numbers: 1835 - 1856 Spacer: 1856
Calculated distance from Trackline: 0.71 km

Final Time and Position of Sighting

Time: 11:55 WP#: 54 Lat: 30.044664 Long: -80.561713
Calculated Distance Traveled: 1.12 km

Behavior and Additional Comments

Fast travel heading NE

Tuesday, February 18, 2014 Sighting # 5

Initial sighting on Track

Time: 13:32 WP#: 62 Lat: 30.565959 Long: -80.444927
Vertical Angle: 1 Horizontal Bearing in Degrees: 60 Sighting Cue: Splash
On/Off Effort: On Trackline: 10 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 13:35 WP#: 63 Lat: 30.563518 Long: -80.452092
Species: *Tursiops truncatus* Numbers (Low/High/Best): 4 / 4 / 4
Features used in Species ID: Uniform grey coloration, robust body appearance.

Representative images used for Species ID: 1857, 1862, 1863
Photographer: Erin Frame numbers: 1857 - 1869 Spacer: 1869
Calculated distance from Trackline: 0.74 km

Final Time and Position of Sighting

Time: 13:37 WP#: 64 Lat: 30.560321 Long: -80.448726
Calculated Distance Traveled: 0.77 km

Behavior and Additional Comments

Slow travel; jumping

Tuesday, February 18, 2014 Sighting # 6

Initial sighting on Track

Time: 14:10 WP#: 71 Lat: 30.499985 Long: -80.304984
Vertical Angle: 3 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: On Trackline: 9 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 14:11 WP#: 72 Lat: 30.502868 Long: -80.304921
Species: *Stenella frontalis* Numbers (Low/High/Best): 10 / 10 / 10
Features used in Species ID: Alternating light and dark body coloration, extensive spotting pattern, white tip to rostrum.

Representative images used for Species ID: 1874, 1880, 1883
Photographer: Erin Frame numbers: 1870 - 1884 Spacer: 1884
Calculated distance from Trackline: 0.32 km

Final Time and Position of Sighting

Time: 14:14 WP#: 73 Lat: 30.50963 Long: -80.297428
Calculated Distance Traveled: 1.04 km

Behavior and Additional Comments

Two groups; 1 traveling fast and uncooperative (4 individuals); Group with animals paired up and being

Tuesday, February 18, 2014 Sighting # 7

Initial sighting on Track

Time: 14:17 WP#: 74 Lat: 30.499685 Long: -80.371315
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: On Trackline: 9 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 14:18 WP#: 75 Lat: 30.500213 Long: -80.392766
Species: *Tursiops truncatus* Numbers (Low/High/Best): 6 / 6 / 6
Features used in Species ID: Uniform grey coloration, robust body appearance.

Representative images used for Species ID: 1885, 1888
Photographer: Erin Frame numbers: 1885 - 1892 Spacer: 1901
Calculated distance from Trackline: 2.06 km

Final Time and Position of Sighting

Time: 14:23 WP#: 77 Lat: 30.498318 Long: -80.388025
Calculated Distance Traveled: 0.50 km

Behavior and Additional Comments

Milling on surface then dove; avoidance

Tuesday, February 18, 2014 Sighting # 8

Initial sighting on Track

Time: 14:27 WP#: 79 Lat: 30.500045 Long: -80.539436
Vertical Angle: 3 Horizontal Bearing in Degrees: 100 Sighting Cue: Splash
On/Off Effort: On Trackline: 9 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 14:29 WP#: 81 Lat: 30.506984 Long: -80.536072
Species: *Tursiops truncatus* Numbers (Low/High/Best): 1 / 1 / 1
Features used in Species ID: Uniform grey coloration.

Representative images used for Species ID: 1895, 1896
Photographer: Erin Frame numbers: 1893 - 1901 Spacer: 1901
Calculated distance from Trackline: 0.84 km

Final Time and Position of Sighting

Time: 14:31 WP#: 82 Lat: 30.496294 Long: -80.545655
Calculated Distance Traveled: 1.50 km

Behavior and Additional Comments

Deeper dives then hanging at the surface

Tuesday, February 18, 2014 Sighting # 9

Initial sighting on Track

Time: 14:33 WP#: 84 Lat: 30.502257 Long: -80.633361
Vertical Angle: 2 Horizontal Bearing in Degrees: 100 Sighting Cue: Body
On/Off Effort: On Trackline: 9 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 14:33 WP#: 85 Lat: 30.502395 Long: -80.618280
Species: *Stenella frontalis* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID: Extensive spotting pattern present, white tip to rostrum.

Representative images used for Species ID: 1902, 1910, 1911
Photographer: Erin Frame numbers: 1902 - 1914 Spacer: 1914
Calculated distance from Trackline: 1.45 km

Final Time and Position of Sighting

Time: 14:38 WP#: 86 Lat: 30.490634 Long: -80.632057
Calculated Distance Traveled: 1.86 km

Behavior and Additional Comments

Avoidance

Friday, March 14, 2014 Sighting # 1

Initial sighting on Track

Time: 9:36 WP#: 4 Lat: 30.232600 Long: -80.272616
Vertical Angle: 2 Horizontal Bearing in Degrees: 100 Sighting Cue: Splash
On/Off Effort: On Trackline: 5 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 9:39 WP#: 5 Lat: 30.232600 Long: -80.272616
Species: *Stenella frontalis* Numbers (Low/High/Best): 30 / 50 / 40
Features used in Species ID: Alternating light and dark pattern down body, spotting

Representative images used for Species ID: 2334
Photographer: Ryan Frame numbers: 2317 - 2344 Spacer: 2345
Calculated distance from Trackline: N/A

Final Time and Position of Sighting

Time: 9:48 WP#: 6 Lat: N/A Long: N/A
Calculated Distance Traveled: N/A

Behavior and Additional Comments

Traveling fast subsurface, hitting surface hard
GPS download malfunction - actual time an position was copied from initial sighting. No coordinates for actual time and final time

Friday, March 14, 2014 Sighting # 2

Initial sighting on Track

Time: 10:06 WP#: 10 Lat: 30.300314 Long: -80.003164
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: On Trackline: 6 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: N/A WP#: N/A Lat: 30.300314 Long: -80.003164
Species: *Tursiops truncatus* Numbers (Low/High/Best): 2 / 2 / 2
Features used in Species ID: Uniform gray, robust, white peduncle

Representative images used for Species ID: N/A
Photographer: N/A Frame numbers: N/A Spacer: N/A
Calculated distance from Trackline: N/A

Final Time and Position of Sighting

Time: 10:16 WP#: 11 Lat: N/A Long: N/A
Calculated Distance Traveled: N/A

Behavior and Additional Comments

Fast travel, when we flew over they slowed and changed directions, no resight, no photos
GPS download malfunction - actual time an position was copied from initial sighting. No coordinates for actual time and final time

Friday, March 14, 2014 Sighting # 3

Initial sighting on Track

Time: 10:23 WP#: 13 Lat: 30.300494 Long: -80.295558
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 6 Beaufort Sea State: 3
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 10:25 WP#: 14 Lat: 30.300494 Long: -80.295558
Species: *Stenella frontalis* Numbers (Low/High/Best): 10 / 17 / 12
Features used in Species ID: Alternating light and dark pattern down body, spotting

Representative images used for Species ID: 2350, 2351, 2354
Photographer: Ryan Frame numbers: 2345 - 2364 Spacer: 2365
Calculated distance from Trackline: N/A

Final Time and Position of Sighting

Time: N/A WP#: N/A Lat: N/A Long: N/A
Calculated Distance Traveled: N/A

Behavior and Additional Comments

Fast travel, avoidance
GPS download malfunction - actual time an position was copied from initial sighting. No coordinates for actual time and final time

Friday, March 14, 2014 Sighting # 4

Initial sighting on Track

Time: 14:31 WP#: 47 Lat: 29.965397 Long: -80.029230
Vertical Angle: 1 Horizontal Bearing in Degrees: 60 Sighting Cue: Body
On/Off Effort: On Trackline: 1 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 14:32 WP#: 48 Lat: 29.965397 Long: -80.029230
Species: *Tursiops truncatus* Numbers (Low/High/Best): 5 / 15 / 8
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 2388
Photographer: Ryan Frame numbers: 2365 - 2399 Spacer: 2400
Calculated distance from Trackline: N/A

Final Time and Position of Sighting

Time: N/A WP#: N/A Lat: N/A Long: N/A
Calculated Distance Traveled: N/A

Behavior and Additional Comments

Milling at the surface or just below
GPS download malfunction - actual time an position was copied from initial sighting. No coordinates for actual time and final time

Friday, March 14, 2014 Sighting # 5

Initial sighting on Track

Time: 15:10 WP#: 54 Lat: 30.031805 Long: -80.623396
Vertical Angle: 2 Horizontal Bearing in Degrees: 110 Sighting Cue: Splash
On/Off Effort: On Trackline: 2 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 15:11 WP#: 55 Lat: 30.031805 Long: -80.623396
Species: *Stenella frontalis* Numbers (Low/High/Best): 4 / 7 / 6
Features used in Species ID: Alternating light and dark pattern down body, spotting

Representative images used for Species ID: 2408
Photographer: Ryan Frame numbers: 2400 - 2411 Spacer: 2412
Calculated distance from Trackline: N/A

Final Time and Position of Sighting

Time: N/A WP#: N/A Lat: N/A Long: N/A
Calculated Distance Traveled: N/A

Behavior and Additional Comments

Fast travel, slowed down when we flew over then sped up again, hitting the surface hard, then spaced out
GPS download malfunction - actual time an position was copied from initial sighting. No coordinates or actual time and final time

Friday, March 14, 2014 Sighting # 6

Initial sighting on Track

Time: 16:01 WP#: 63 Lat: 30.167002 Long: -80.269950
Vertical Angle: 1 Horizontal Bearing in Degrees: 100 Sighting Cue: Body
On/Off Effort: On Trackline: 4 Beaufort Sea State: 3
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 16:02 WP#: 63 Lat: 30.167002 Long: -80.269950
Species: *Tursiops truncatus* Numbers (Low/High/Best): 2 / 2 / 2
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 2417 - 2420
Photographer: Ryan Frame numbers: 2412 - 2430 Spacer: 2431
Calculated distance from Trackline: N/A

Final Time and Position of Sighting

Time: N/A WP#: N/A Lat: N/A Long: N/A
Calculated Distance Traveled: N/A

Behavior and Additional Comments

GPS download malfunction - actual time an position was copied from initial sighting. No coordinates or actual time and final time

Saturday, March 15, 2014 Sighting # 1

Initial sighting on Track

Time: 9:24 WP#: 53 Lat: 30.499785 Long: -80.069318
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 9 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 9:34 WP#: 55 Lat: 30.501042 Long: -80.060103
Species: *Tursiops truncatus* Numbers (Low/High/Best): 6 / 6 / 6
Features used in Species ID: Uniform grey coloration

Representative images used for Species ID: NA
Photographer: Erin Frame numbers: NA Spacer: NA
Calculated distance from Trackline: 0.89 km

Final Time and Position of Sighting

Time: 9:37 WP#: 56 Lat: 30.502078 Long: -80.064068
Calculated Distance Traveled: 0.40 km

Behavior and Additional Comments

Traveling SW, White peduncles present. Avoidance behavior noted.
Small groups + high seas = difficult to photograph

Saturday, March 15, 2014 Sighting # 2

Initial sighting on Track

Time: 10:38 WP#: 65 Lat: 30.366184 Long: -80.342980
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 7 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 10:40 WP#: 66 Lat: 30.368129 Long: -80.342820
Species: *Stenella frontalis* Numbers (Low/High/Best): 4 / 7 / 5
Features used in Species ID: Extensive spotting pattern across animal body.

Representative images used for Species ID: 2440, 2442, 2443
Photographer: Erin Frame numbers: 2432 - 2445 Spacer: 2446
Calculated distance from Trackline: 0.22 km

Final Time and Position of Sighting

Time: 10:48 WP#: 67 Lat: 30.372445 Long: -80.333072
Calculated Distance Traveled: 1.05 km

Behavior and Additional Comments

Saturday, March 15, 2014 Sighting # 3

Initial sighting on Track

Time: 11:44 WP#: 77 Lat: 30.233350 Long: -80.353623
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 5 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 11:52 WP#: 78 Lat: 30.234678 Long: -80.342680
Species: *Stenella frontalis* Numbers (Low/High/Best): 3 / 4 / 4
Features used in Species ID: Alternating light and dark coloration along animals body, spotting pattern present.
Representative images used for Species ID: 2452, 2453
Photographer: Erin Frame numbers: 2447 - 2453 Spacer: 2454
Calculated distance from Trackline: 1.06 km

Final Time and Position of Sighting

Time: NA WP#: NA Lat: NA Long: NA
Calculated Distance Traveled: NA

Behavior and Additional Comments

Shark near single animal, pairs also present. Maybe mix of Ttr and Sfr - Check photos

Saturday, March 15, 2014 Sighting # 4

Initial sighting on Track

Time: 14:23 WP#: 90 Lat: 30.032348 Long: -80.476424
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 2 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 14:24 WP#: 91 Lat: 30.033670 Long: -80.478840
Species: *Stenella frontalis* Numbers (Low/High/Best): 6 / 7 / 7
Features used in Species ID: White tip to rostrum, extensive spotting pattern present across animals body.
Representative images used for Species ID: 2456, 2461, 2462
Photographer: Erin Frame numbers: 2455 - 2462 Spacer: 2463
Calculated distance from Trackline: 0.28 km

Final Time and Position of Sighting

Time: 14:30 WP#: 92 Lat: 30.034464 Long: -80.472793
Calculated Distance Traveled: 0.60 km

Behavior and Additional Comments

Saturday, March 15, 2014 Sighting # 5

Initial sighting on Track

Time: 14:34 WP#: 94 Lat: 30.031978 Long: -80.631129
Vertical Angle: 2 Horizontal Bearing in Degrees: 60 Sighting Cue: Blow
On/Off Effort: On Trackline: 2 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 14:39 WP#: 95 Lat: 30.036457 Long: -80.624021
Species: *Tursiops truncatus* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID: Uniform grey coloration, robust body appearance

Representative images used for Species ID: 2466, 2467
Photographer: Erin Frame numbers: 2464 - 2468 Spacer: 2469
Calculated distance from Trackline: 0.84 km

Final Time and Position of Sighting

Time: NA WP#: NA Lat: NA Long: NA
Calculated Distance Traveled: NA

Behavior and Additional Comments

Diving - traveling below the surface.

Saturday, March 15, 2014 Sighting # 6

Initial sighting on Track

Time: 14:54 WP#: 108 Lat: 30.100038 Long: -80.305591
Vertical Angle: 1 Horizontal Bearing in Degrees: 60 Sighting Cue: Body
On/Off Effort: On Trackline: 3 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 15:02 WP#: 109 Lat: 30.094827 Long: -80.304676
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 5 / 5 / 5
Features used in Species ID: Unable to relocate animals

Representative images used for Species ID: NA
Photographer: Erin Frame numbers: NA Spacer: NA
Calculated distance from Trackline: 0.58 km

Final Time and Position of Sighting

Time: NA WP#: NA Lat: NA Long: NA
Calculated Distance Traveled: NA

Behavior and Additional Comments

Spending time below the surface - out of sight. Difficult to relocate.

Saturday, March 15, 2014 Sighting # 7

Initial sighting on Track

Time: 15:36 WP#: 116 Lat: 30.167017 Long: -80.331696
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 4 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 15:41 WP#: 117 Lat: 30.167928 Long: -80.327823
Species: *Stenella frontalis* Numbers (Low/High/Best): 15 / 20 / 17
Features used in Species ID: Light body coloration due to extensive spotting . Alternating light and dark color across body, white tip to rostrum.
Representative images used for Species ID: 2472, 2475, 2482
Photographer: Erin Frame numbers: 2470 - 2487 Spacer: 2488
Calculated distance from Trackline: 0.39 km

Final Time and Position of Sighting

Time: NA WP#: NA Lat: NA Long: NA
Calculated Distance Traveled: NA

Behavior and Additional Comments

First observed a single animal - dense group encountered once began circling.

Wednesday, May 7, 2014 Sighting # 1

Initial sighting on Track

Time: 9:26 WP#: 6 Lat: 30.499198 Long: -80.154955
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: On Trackline: 9 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 9:31 WP#: 7 Lat: 30.491434 Long: -80.155001
Species: *Stenella frontalis* Numbers (Low/High/Best): 8 / 12 / 10
Features used in Species ID: Uniform grey, robust

Representative images used for Species ID: 3439, 3440
Photographer: Ryan Frame numbers: 3446 - 3444 Spacer: 3445
Calculated distance from Trackline: 0.86 km

Final Time and Position of Sighting

Time: 9:33 WP#: 8 Lat: 30.498963 Long: -80.160309
Calculated Distance Traveled: 0.98 km

Behavior and Additional Comments

Darting in different directions, fast travel

Wednesday, May 7, 2014 Sighting # 2

Initial sighting on Track

Time: 9:48 WP#: 12 Lat: 30.498785 Long: -80.613173
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 9 Beaufort Sea State: 3
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 9:49 WP#: 12 Lat: 30.499558 Long: -80.615152
Species: *Stenella frontalis* Numbers (Low/High/Best): 18 / 27 / 22
Features used in Species ID: Alternating light and dark pattern down body, white tip to rostrum, spotting

Representative images used for Species ID: 3463, 3464, 3467, 3468, 3473
Photographer: Ryan Frame numbers: 3446 - 3481 Spacer: 3482
Calculated distance from Trackline: 0.21 km

Final Time and Position of Sighting

Time: 9:51 WP#: 14 Lat: 30.506155 Long: -80.613352
Calculated Distance Traveled: 0.75 km

Behavior and Additional Comments

Milling just below the surface, slow surfacing, jumping

Wednesday, May 7, 2014 Sighting # 3

Initial sighting on Track

Time: 9:54 WP#: 17 Lat: 30.500386 Long: -80.680045
Vertical Angle: 2 Horizontal Bearing in Degrees: 100 Sighting Cue: Body
On/Off Effort: On Trackline: 9 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: N/A WP#: N/A Lat: 30.500386 Long: -80.680045
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 6 / 6 / 6
Features used in Species ID: N/A

Representative images used for Species ID: N/A
Photographer: N/A Frame numbers: N/A Spacer: N/A
Calculated distance from Trackline: N/A

Final Time and Position of Sighting

Time: 10:02 WP#: 18 Lat: 30.487974 Long: -80.669573
Calculated Distance Traveled: N/A

Behavior and Additional Comments

No resight, no photos, estimate of final location

Wednesday, May 7, 2014 Sighting # 4

Initial sighting on Track

Time: 10:58 WP#: 30 Lat: 30.363382 Long: -80.514024
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 7 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 11:02 WP#: 31 Lat: 30.360802 Long: -80.511538
Species: *Stenella frontalis* Numbers (Low/High/Best): 11 / 15 / 13
Features used in Species ID: Alternating light and dark pattern down body, spotting, white tip on rostrum

Representative images used for Species ID: 3484, 3491, 3495
Photographer: Ryan Frame numbers: 3483 - 3502 Spacer: 3503
Calculated distance from Trackline: 0.37 km

Final Time and Position of Sighting

Time: 11:05 WP#: 32 Lat: 30.368421 Long: -80.508648
Calculated Distance Traveled: 0.89 km

Behavior and Additional Comments

Milling just below the surface, slowly moving south

Wednesday, May 7, 2014 Sighting # 5

Initial sighting on Track

Time: 14:16 WP#: 54 Lat: 30.167195 Long: -80.353539
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Blow
On/Off Effort: On Trackline: 4 Beaufort Sea State: 1
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 14:17 WP#: 55 Lat: 30.158679 Long: -80.357500
Species: *Tursiops truncatus* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 3525, 3507
Photographer: Ryan Frame numbers: 3504, 3534 Spacer: 3535
Calculated distance from Trackline: 1.02 km

Final Time and Position of Sighting

Time: 14:22 WP#: 56 Lat: 30.163949 Long: -80.348688
Calculated Distance Traveled: 1.03 km

Behavior and Additional Comments

Small calf, medium rate of travel, regular surfacing

Wednesday, May 7, 2014 Sighting # 6

Initial sighting on Track

Time: 15:10 WP#: 68 Lat: 30.032060 Long: -80.626034
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 2 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 15:12 WP#: 69 Lat: 30.036456 Long: -80.622383
Species: *Stenella frontalis* Numbers (Low/High/Best): 20 / 40 / 30
Features used in Species ID: Alternating light and dark pattern down body, spotting, white tip to rostrum

Representative images used for Species ID: 3552, 3554, 3560
Photographer: Ryan Frame numbers: 3536 - 3567 Spacer: 3569
Calculated distance from Trackline: 0.60 km

Final Time and Position of Sighting

Time: 15:19 WP#: 70 Lat: 30.033272 Long: -80.628693
Calculated Distance Traveled: 0.70 km

Behavior and Additional Comments

Tight group, 2 groups of 10-15 in each

Wednesday, May 7, 2014 Sighting # 7

Initial sighting on Track

Time: 15:22 WP#: 72 Lat: 30.032463 Long: -80.517474
Vertical Angle: 2 Horizontal Bearing in Degrees: 100 Sighting Cue: Blow
On/Off Effort: On Trackline: 2 Beaufort Sea State: 1
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 15:30 WP#: 73 Lat: 30.038285 Long: -80.520399
Species: *Tursiops truncatus* Numbers (Low/High/Best): 1 / 1 / 1
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 3575, 3576
Photographer: Ryan Frame numbers: 3570 - 3581 Spacer: 3582
Calculated distance from Trackline: 0.71 km

Final Time and Position of Sighting

Time: 15:32 WP#: 74 Lat: 30.038208 Long: -80.522718
Calculated Distance Traveled: 0.22km

Behavior and Additional Comments

Dove for 8 min before surfacing again, evasive

Wednesday, May 7, 2014 Sighting # 8

Initial sighting on Track

Time: 15:39 WP#: 78 Lat: 30.032643 Long: -80.271415
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 2 Beaufort Sea State: 1
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 15:41 WP#: 79 Lat: 30.039079 Long: -80.274399
Species: *Tursiops truncatus* Numbers (Low/High/Best): 4 / 8 / 6
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 3591, 3593
Photographer: Ryan Frame numbers: 3583 - 3606 Spacer: 3607
Calculated distance from Trackline: 0.77 km

Final Time and Position of Sighting

Time: 15:52 WP#: 80 Lat: 30.039908 Long: -80.279020
Calculated Distance Traveled: 0.45 km

Behavior and Additional Comments

Milling in different directions

Thursday, May 8, 2014 Sighting # 1

Initial sighting on Track

Time: 11:29 WP#: 29 Lat: 30.567027 Long: -80.312718
Vertical Angle: 3 Horizontal Bearing in Degrees: 60 Sighting Cue: Body
On/Off Effort: On Trackline: 10 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 11:34 WP#: 30 Lat: 30.567068 Long: -80.323446
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID:

Representative images used for Species ID: NA
Photographer: Erin Frame numbers: NA Spacer: NA
Calculated distance from Trackline: 1.0 km

Final Time and Position of Sighting

Time: 11:41 WP#: 31 Lat: 30.571449 Long: -80.316698
Calculated Distance Traveled: 0.8 km

Behavior and Additional Comments

Unable to relocate animals after making a second sighting.

Thursday, May 8, 2014 Sighting # 2

Initial sighting on Track

Time: 13:57 WP#: 41 Lat: 30.166423 Long: -80.570616
Vertical Angle: 3 Horizontal Bearing in Degrees: 60 Sighting Cue: Splash
On/Off Effort: On Trackline: 4 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 13:58 WP#: 42 Lat: 30.155164 Long: -80.570616
Species: *Stenella frontalis* Numbers (Low/High/Best): 30 / 35 / 33
Features used in Species ID: Alternating light and dark coloration, extensive spotting pattern.

Representative images used for Species ID: 3616, 3618
Photographer: Erin Frame numbers: 3608 - 3620 Spacer: 3620
Calculated distance from Trackline: 1.25 km

Final Time and Position of Sighting

Time: 14:03 WP#: 43 Lat: 30.162426 Long: -80.577199
Calculated Distance Traveled: 1.0 km

Behavior and Additional Comments

Lots of animals, traveling fast, quick surfacings resulting in the sighting cue of splashes
Single group at first changed direction and split into two smaller groups.

Thursday, May 8, 2014 Sighting # 3

Initial sighting on Track

Time: 14:04 WP#: 45 Lat: 30.167140 Long: -80.533344
Vertical Angle: 3 Horizontal Bearing in Degrees: 60 Sighting Cue: Splash
On/Off Effort: On Trackline: 4 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 14:06 WP#: 46 Lat: 30.163062 Long: -80.535132
Species: *Tursiops truncatus* Numbers (Low/High/Best): 7 / 9 / 8
Features used in Species ID: Uniform grey coloration, robust body appearance.

Representative images used for Species ID: 3622, 3623, 3629
Photographer: Erin Frame numbers: 3621 - 3632 Spacer: 3633
Calculated distance from Trackline: 0.48 km

Final Time and Position of Sighting

Time: 14:08 WP#: 47 Lat: 30.168683 Long: -80.528123
Calculated Distance Traveled: 0.91 km

Behavior and Additional Comments

Animals slow moving / stationary, staying close to one another. Grey coloration.

Thursday, May 8, 2014 Sighting # 4

Initial sighting on Track

Time: 14:35 WP#: 53 Lat: 30.099976 Long: -79.839998
Vertical Angle: 2 Horizontal Bearing in Degrees: 110 Sighting Cue: Body
On/Off Effort: On Trackline: 3 Beaufort Sea State: 3
Observer: Ryan Observer side: Left

Actual Time and Position of Sighting

Time: 14:38 WP#: 54 Lat: 30.095914 Long: -79.831719
Species: *Tursiops truncatus* Numbers (Low/High/Best): 18 / 23 / 21
Features used in Species ID: Robust body appearance, uniform grey coloration.

Representative images used for Species ID: 3635, 3641
Photographer: Erin Frame numbers: 3634 - 3643 Spacer: 3644
Calculated distance from Trackline: 0.92 km

Final Time and Position of Sighting

Time: 14:43 WP#: 55 Lat: 30.102651 Long: -79.830555
Calculated Distance Traveled: 0.75 km

Behavior and Additional Comments

Slow moving, loosely associated group of animals.

Thursday, May 8, 2014 Sighting # 5

Initial sighting on Track

Time: 15:35 WP#: 64 Lat: 30.032085 Long: -79.983042
Vertical Angle: 2 Horizontal Bearing in Degrees: 45 Sighting Cue: Body
On/Off Effort: On Trackline: 2 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 15:36 WP#: 65 Lat: 30.032863 Long: -79.985110
Species: *Tursiops truncatus* Numbers (Low/High/Best): 9 / 9 / 9
Features used in Species ID: Uniform grey coloration.

Representative images used for Species ID: 3653, 3654
Photographer: Erin Frame numbers: 3645 - 3656 Spacer: 3657
Calculated distance from Trackline: 0.21 km

Final Time and Position of Sighting

Time: 15:39 WP#: 66 Lat: 30.038421 Long: -79.979610
Calculated Distance Traveled: 0.81 km

Behavior and Additional Comments

First observed a single animal, second group of eight observed upon circling.

Thursday, May 8, 2014 Sighting # 6

Initial sighting on Track

Time: 15:35 WP#: 64 Lat: 30.032085 Long: -79.983042
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: 3
On/Off Effort: Off Trackline: 2 Beaufort Sea State: 3
Observer: RJM Observer side: Left

Actual Time and Position of Sighting

Time: 15:41 WP#: 67 Lat: 30.033841 Long: -79.965559
Species: *Grampus griseus* Numbers (Low/High/Best): 8 / 12 / 10
Features used in Species ID: Extensive scarring patterns over body, large dorsal fin, pointed rostrum.

Representative images used for Species ID: 3669
Photographer: EWC Frame numbers: 3658 - 3677 Spacer: 3678
Calculated distance from Trackline: 1.7 km

Final Time and Position of Sighting

Time: 15:54 WP#: 68 Lat: 30.045578 Long: -79.965440
Calculated Distance Traveled: 1.3 km

Behavior and Additional Comments

Animals traveling in a dense group showing consistent direction and speed in their movements.

Thursday, May 8, 2014 Sighting # 7

Initial sighting on Track

Time: 16:07 WP#: 72 Lat: 29.965065 Long: -79.963842
Vertical Angle: 4 Horizontal Bearing in Degrees: 60 Sighting Cue: Splash
On/Off Effort: On Trackline: 1 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 16:15 WP#: 73 Lat: 29.973098 Long: -79.960365
Species: *Tursiops truncatus* Numbers (Low/High/Best): 6 / 6 / 6
Features used in Species ID: Uniform grey coloration, robust body appearance.

Representative images used for Species ID: 3661, 3684, 3685
Photographer: Erin Frame numbers: 3679 - 3688 Spacer: 3689
Calculated distance from Trackline: 0.95 km

Final Time and Position of Sighting

Time: 16:15 WP#: 74 Lat: 29.971639 Long: -79.957617
Calculated Distance Traveled: 0.31 km

Behavior and Additional Comments

Three pairs of animals swimming slowly together at the surface

Wednesday, June 25, 2014 Sighting # 1

Initial sighting on Track

Time: 10:10 WP#: 16 Lat: 30.432899 Long: -79.989147
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 8 Beaufort Sea State: 2
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 10:11 WP#: 17 Lat: 30.433313 Long: -79.990394
Species: *Tursiops truncatus* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID: Uniform gray, robust, white peduncles

Representative images used for Species ID: 4767 - 4768
Photographer: Ryan Frame numbers: 4757 - 4770 Spacer: 4771
Calculated distance from Trackline: 0.13 km

Final Time and Position of Sighting

Time: 10:15 WP#: 18 Lat: 30.428938 Long: -79.990071
Calculated Distance Traveled: 0.49 km

Behavior and Additional Comments

Traveling, white peduncles

Wednesday, June 25, 2014 Sighting # 2

Initial sighting on Track

Time: 10:20 WP#: 20 Lat: 30.434556 Long: -79.803360
Vertical Angle: 2 Horizontal Bearing in Degrees: 60 Sighting Cue: Splash
On/Off Effort: On Trackline: 8 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 10:21 WP#: 21 Lat: 30.437774 Long: -79.809363
Species: *Tursiops truncatus* Numbers (Low/High/Best): 15 / 25 / 18
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 4781, 4785, 4805, 4816
Photographer: Ryan Frame numbers: 4772 - 4822 Spacer: 4823
Calculated distance from Trackline: 0.68 km

Final Time and Position of Sighting

Time: 10:26 WP#: 22 Lat: 30.440244 Long: -79.811034
Calculated Distance Traveled: 0.39 km

Behavior and Additional Comments

Active, jumping and darting, hitting the surface, swimming in circles, calf present

Wednesday, June 25, 2014 Sighting # 3

Initial sighting on Track

Time: 11:50 WP#: 35 Lat: 30.233267 Long: -80.393847
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 5 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: N/A WP#: N/A Lat: N/A Long: N/A
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 5 / 5 / 5
Features used in Species ID: N/A

Representative images used for Species ID: N/A
Photographer: N/A Frame numbers: N/A Spacer: N/A
Calculated distance from Trackline: N/A

Final Time and Position of Sighting

Time: N/A WP#: N/A Lat: N/A Long: N/A
Calculated Distance Traveled: N/A

Behavior and Additional Comments

No resight

Wednesday, June 25, 2014 Sighting # 4

Initial sighting on Track

Time: 14:12 WP#: 41 Lat: 30.164820 Long: -80.689570
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 4 Beaufort Sea State: 1
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 14:15 WP#: 42 Lat: 30.168025 Long: -80.687420
Species: *Tursiops truncatus* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 4832, 4834, 4839, 4840
Photographer: Ryan Frame numbers: 4826 - 4843 Spacer: 4844
Calculated distance from Trackline: 0.41 km

Final Time and Position of Sighting

Time: 14:15 WP#: 43 Lat: 30.164711 Long: -80.685774
Calculated Distance Traveled: 0.40 km

Behavior and Additional Comments

Subsurface travel

Wednesday, June 25, 2014 Sighting # 5

Initial sighting on Track

Time: 14:19 WP#: 46 Lat: 30.165981 Long: -80.617693
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: On Trackline: 4 Beaufort Sea State: 1
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 14:21 WP#: 47 Lat: 30.169166 Long: -80.616415
Species: *Stenella frontalis* Numbers (Low/High/Best): 2 / 6 / 4
Features used in Species ID: Alternating light and dark pattern down body, spotting, white tip on rostrum
Representative images used for Species ID: 4849, 4861, 4862
Photographer: Ryan Frame numbers: 4845 - 4865 Spacer: 4866
Calculated distance from Trackline: 0.37 km

Final Time and Position of Sighting

Time: 14:22 WP#: 48 Lat: 30.171371 Long: -80.620436
Calculated Distance Traveled: 0.46 km

Behavior and Additional Comments

Travel subsurface, some deeper dives

Wednesday, June 25, 2014 Sighting # 6

Initial sighting on Track

Time: 14:23 WP#: 50 Lat: 30.165533 Long: -80.575778
Vertical Angle: 1 Horizontal Bearing in Degrees: 60 Sighting Cue: Splash
On/Off Effort: On Trackline: 4 Beaufort Sea State: 1
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 14:24 WP#: 51 Lat: 30.165579 Long: -80.575389
Species: *Tursiops truncatus* Numbers (Low/High/Best): 7 / 11 / 9
Features used in Species ID: Uniform gray, robust
Representative images used for Species ID: 4869, 4871, 4872, 4882
Photographer: Ryan Frame numbers: 4867 - 4890 Spacer: 4891
Calculated distance from Trackline: 0.38 km

Final Time and Position of Sighting

Time: 14:26 WP#: 52 Lat: 30.169193 Long: -80.569666
Calculated Distance Traveled: 0.68 km

Behavior and Additional Comments

Logging at the surface

Wednesday, June 25, 2014 Sighting # 7

Initial sighting on Track

Time: 14:32 WP#: 56 Lat: 30.166410 Long: -80.392238
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 4 Beaufort Sea State: 1
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 14:34 WP#: 57 Lat: 30.173651 Long: -80.397908
Species: *Tursiops truncatus* Numbers (Low/High/Best): 6 / 6 / 6
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 4892, 4893
Photographer: Ryan Frame numbers: 4892 - 4895 Spacer: 4896
Calculated distance from Trackline: 0.97 km

Final Time and Position of Sighting

Time: 14:35 WP#: 58 Lat: 30.174563 Long: -80.398985
Calculated Distance Traveled: 0.14 km

Behavior and Additional Comments

2 groups of 3

Wednesday, June 25, 2014 Sighting # 8

Initial sighting on Track

Time: 14:39 WP#: 61 Lat: 30.166168 Long: -80.247939
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 4 Beaufort Sea State: 2
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 14:40 WP#: 62 Lat: 30.159416 Long: -80.252027
Species: *Steno bredanensis* Numbers (Low/High/Best): 15 / 25 / 20
Features used in Species ID: Uniform gray, white sides to rostrum, long rostrum

Representative images used for Species ID: 4901, 4902, 4907, 4908, 4911, 4913
Photographer: Ryan Frame numbers: 4897 - 4918 Spacer: 4919
Calculated distance from Trackline: 0.85 km

Final Time and Position of Sighting

Time: 14:43 WP#: 63 Lat: 30.163327 Long: -80.246899
Calculated Distance Traveled: 0.66 km

Behavior and Additional Comments

Darting different directions, milling and rolling

Wednesday, June 25, 2014 Sighting # 9

Initial sighting on Track

Time: 15:16 WP#: 70 Lat: 30.100311 Long: -80.531405
Vertical Angle: 1 Horizontal Bearing in Degrees: 120 Sighting Cue: Body
On/Off Effort: On Trackline: 3 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 15:17 WP#: 71 Lat: 30.096132 Long: -80.522046
Species: *Tursiops truncatus* Numbers (Low/High/Best): 9 / 15 / 12
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 4938 - 4941
Photographer: Ryan Frame numbers: 4919 - 4943 Spacer: 4944
Calculated distance from Trackline: 1.01 km

Final Time and Position of Sighting

Time: 15:20 WP#: 72 Lat: 30.101378 Long: -80.521102
Calculated Distance Traveled: 0.59 km

Behavior and Additional Comments

Traveling just below the surface, circling and feeding on a bait ball

Wednesday, June 25, 2014 Sighting # 10

Initial sighting on Track

Time: 15:23 WP#: 76 Lat: 30.100275 Long: -80.644684
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 3 Beaufort Sea State: 2
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 15:24 WP#: 77 Lat: 30.103457 Long: -80.644324
Species: *Tursiops truncatus* Numbers (Low/High/Best): 4 / 4 / 4
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 4951
Photographer: Ryan Frame numbers: 4945 - 4952 Spacer: 4954
Calculated distance from Trackline: 0.36 km

Final Time and Position of Sighting

Time: 15:25 WP#: 78 Lat: 30.103135 Long: -80.638807
Calculated Distance Traveled: 0.53 km

Behavior and Additional Comments

3 in a tight group, 1 alone, dove when plane flew over

Wednesday, June 25, 2014 Sighting # 11

Initial sighting on Track

Time: 15:33 WP#: 83 Lat: 30.031229 Long: -80.573704
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: On Trackline: 2 Beaufort Sea State: 2
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 15:34 WP#: 84 Lat: 30.026829 Long: -80.571601
Species: *Tursiops truncatus* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID:
Photographer: Ryan Frame numbers: 4955 - 4967 Spacer: 4968
Calculated distance from Trackline: 0.53 km

Final Time and Position of Sighting

Time: 15:36 WP#: 85 Lat: 30.027238 Long: -80.570908
Calculated Distance Traveled: 0.08 km

Behavior and Additional Comments

Swimming subsurface

Wednesday, June 25, 2014 Sighting # 12

Initial sighting on Track

Time: 15:41 WP#: 88 Lat: 30.031517 Long: -80.406152
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 2 Beaufort Sea State: 2
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 15:41 WP#: 89 Lat: 30.031352 Long: -80.412676
Species: *Tursiops truncatus* Numbers (Low/High/Best): 2 / 2 / 2
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 4974, 4976, 4984
Photographer: Ryan Frame numbers: 4969 - 4986 Spacer: 4987
Calculated distance from Trackline: 0.63 km

Final Time and Position of Sighting

Time: 15:44 WP#: 90 Lat: 30.027356 Long: -80.404796
Calculated Distance Traveled: 0.88 km

Behavior and Additional Comments

Milling

Wednesday, June 25, 2014 Sighting # 13

Initial sighting on Track

Time: 16:15 WP#: 101 Lat: 29.965951 Long: -79.979727
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 1 Beaufort Sea State: 1
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 16:16 WP#: 102 Lat: 29.966992 Long: -79.979873
Species: *Tursiops truncatus* Numbers (Low/High/Best): 5 / 5 / 5
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 5014, 5015
Photographer: Ryan Frame numbers: 4989 - 5017 Spacer: 5018
Calculated distance from Trackline: 0.12 km

Final Time and Position of Sighting

Time: 16:21 WP#: 103 Lat: 29.974659 Long: -79.977668
Calculated Distance Traveled: 0.88 km

Behavior and Additional Comments

Dove when we flew over, jumping

Wednesday, June 25, 2014 Sighting # 14

Initial sighting on Track

Time: 16:32 WP#: 106 Lat: 29.966176 Long: -80.393494
Vertical Angle: 1 Horizontal Bearing in Degrees: 120 Sighting Cue: Body
On/Off Effort: On Trackline: 1 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 16:33 WP#: 107 Lat: 29.951259 Long: -80.386714
Species: *Tursiops truncatus* Numbers (Low/High/Best): 2 / 2 / 2
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 5024, 5025
Photographer: Ryan Frame numbers: 5019 - 5027 Spacer: 5029
Calculated distance from Trackline: 1.78 km

Final Time and Position of Sighting

Time: 16:37 WP#: 108 Lat: 29.957648 Long: -80.387015
Calculated Distance Traveled: 0.71 km

Behavior and Additional Comments

Milling then traveling when we flew over

Wednesday, June 25, 2014 Sighting # 15

Initial sighting on Track

Time: 16:40 WP#: 111 Lat: 29.965961 Long: -80.518952
Vertical Angle: 1 Horizontal Bearing in Degrees: 60 Sighting Cue: Body
On/Off Effort: On Trackline: 1 Beaufort Sea State: 2
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 16:45 WP#: 112 Lat: 29.972734 Long: -80.520618
Species: *Tursiops truncatus* Numbers (Low/High/Best): 4 / 4 / 4
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 5036, 5037
Photographer: Ryan Frame numbers: 5030 - 5038 Spacer: 5039
Calculated distance from Trackline: 0.77 km

Final Time and Position of Sighting

Time: 16:46 WP#: 113 Lat: 29.966275 Long: -80.519871
Calculated Distance Traveled: 0.72 km

Behavior and Additional Comments

traveling subsurface

Thursday, June 26, 2014 Sighting # 1

Initial sighting on Track

Time: 9:50 WP#: 10 Lat: 30.032225 Long: -80.420615
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 2 Beaufort Sea State: 2
Observer: Ryan Observer side: Left

Actual Time and Position of Sighting

Time: 9:53 WP#: 11 Lat: 30.031046 Long: -80.411779
Species: *Tursiops truncatus* Numbers (Low/High/Best): 6 / 9 / 8
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 5043, 5045
Photographer: Erin Frame numbers: 5040 - 5048 Spacer: 5048
Calculated distance from Trackline: 0.86 km

Final Time and Position of Sighting

Time: 9:58 WP#: 12 Lat: 30.014620 Long: -80.416431
Calculated Distance Traveled: 1.88 km

Behavior and Additional Comments

Slow moving at the surface - disperse line of animal, uniform grey coloration.

Thursday, June 26, 2014 Sighting # 2

Initial sighting on Track

Time: 10:03 WP#: 25 Lat: 30.232041 Long: -80.618406
Vertical Angle: 2 Horizontal Bearing in Degrees: 110 Sighting Cue: Body
On/Off Effort: On Trackline: 5 Beaufort Sea State: 3
Observer: Ryan Observer side: Left

Actual Time and Position of Sighting

Time: 11:10 WP#: 26 Lat: 30.237265 Long: -80.616181
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 1 / 1 / 1
Features used in Species ID: NA

Representative images used for Species ID: NA
Photographer: Erin Frame numbers: NA Spacer: NA
Calculated distance from Trackline: 0.62 km

Final Time and Position of Sighting

Time: 11:13 WP#: 27 Lat: 30.236304 Long: -80.611489
Calculated Distance Traveled: 0.46 km

Behavior and Additional Comments

Single animal, not observed after initial sighting.

Thursday, June 26, 2014 Sighting # 3

Initial sighting on Track

Time: 11:53 WP#: 32 Lat: 30.300596 Long: -80.427722
Vertical Angle: 1 Horizontal Bearing in Degrees: 45 Sighting Cue: body
On/Off Effort: On Trackline: 6 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 11:54 WP#: 33 Lat: 30.304369 Long: -80.432763
Species: *Stenella frontalis* Numbers (Low/High/Best): 36 / 42 / 40
Features used in Species ID: Alternating light and dark down body, spotting

Representative images used for Species ID: 5054, 5065
Photographer: Erin Frame numbers: 5049 - 5068 Spacer: 5069
Calculated distance from Trackline: 0.64 km

Final Time and Position of Sighting

Time: 11:59 WP#: 34 Lat: 30.310006 Long: -80.440371
Calculated Distance Traveled: 0.96 km

Behavior and Additional Comments

Densely packed group showing slow travel near the surface.
Second group of roughly equal size showed up after began circling.

Thursday, June 26, 2014 Sighting # 4

Initial sighting on Track

Time: 12:01 WP#: 36 Lat: 30.300404 Long: -80.526796
Vertical Angle: 1 Horizontal Bearing in Degrees: 60 Sighting Cue: Body
On/Off Effort: On Trackline: 6 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 12:02 WP#: 37 Lat: 30.304383 Long: -80.525212
Species: *Tursiops truncatus* Numbers (Low/High/Best): 4 / 4 / 4
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 5075, 5079
Photographer: Erin Frame numbers: 5070 - 5082 Spacer: 5083
Calculated distance from Trackline: 0.47 km

Final Time and Position of Sighting

Time: 12:07 WP#: 38 Lat: 30.298519 Long: -80.525813
Calculated Distance Traveled: 0.65 km

Behavior and Additional Comments

Spending most of their time ~10ft below the surface - spread out group.

Thursday, July 10, 2014 Sighting # 1

Initial sighting on Track

Time: 9:39 WP#: 8 Lat: 30.299628 Long: -80.309572
Vertical Angle: 1 Horizontal Bearing in Degrees: 100 Sighting Cue: Body
On/Off Effort: On Trackline: 6 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 9:41 WP#: 9 Lat: 30.297361 Long: -80.299824
Species: *Stenella frontalis* Numbers (Low/High/Best): 20 / 30 / 25
Features used in Species ID: Spotting, light and dark patter down body, white tip to rostrum

Representative images used for Species ID: 5098, 5104, 5105
Photographer: Ryan Frame numbers: 5084 - 5108 Spacer: 5109
Calculated distance from Trackline: 0.97 km

Final Time and Position of Sighting

Time: 9:45 WP#: 10 Lat: 30.296724 Long: -80.305144
Calculated Distance Traveled: 0.52 km

Behavior and Additional Comments

Traveling subsurface in a tight group, jumping, belly swimming, some dove deeper when we flew over

Thursday, July 10, 2014 Sighting # 2

Initial sighting on Track

Time: 9:47 WP#: 12 Lat: 30.300947 Long: -80.378125
Vertical Angle: 2 Horizontal Bearing in Degrees: 45 Sighting Cue: 3
On/Off Effort: On Trackline: 6 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 9:49 WP#: 13 Lat: 30.294865 Long: -80.376758
Species: *Stenella frontalis* Numbers (Low/High/Best): 15 / 20 / 18
Features used in Species ID: Spotting, light and dark patter down body, white tip to rostrum

Representative images used for Species ID: 5120
Photographer: Ryan Frame numbers: 5110 - 5123 Spacer: 5124
Calculated distance from Trackline: 0.69 km

Final Time and Position of Sighting

Time: 9:51 WP#: 14 Lat: 30.295974 Long: -80.382562
Calculated Distance Traveled: 0.57 km

Behavior and Additional Comments

Very tight group, subsurface travel

Thursday, July 10, 2014 Sighting # 3

Initial sighting on Track

Time: 9:57 WP#: 16 Lat: 30.300571 Long: -80.612145
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 6 Beaufort Sea State: 2
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 9:58 WP#: 17 Lat: 30.301411 Long: -80.608566
Species: *Stenella frontalis* Numbers (Low/High/Best): 10 / 15 / 12
Features used in Species ID: Spotting, light and dark pattern down body, white tip to rostrum

Representative images used for Species ID: 5125, 5135
Photographer: Ryan Frame numbers: 5125 - 5137 Spacer: 5138
Calculated distance from Trackline: 0.36 km

Final Time and Position of Sighting

Time: 10:00 WP#: 18 Lat: 30.305386 Long: -80.608528
Calculated Distance Traveled: 0.44 km

Behavior and Additional Comments

Scattered, darting, traveling

Thursday, July 10, 2014 Sighting # 4

Initial sighting on Track

Time: 10:14 WP#: 25 Lat: 30.364974 Long: -80.366643
Vertical Angle: 2 Horizontal Bearing in Degrees: 60 Sighting Cue: Body
On/Off Effort: On Trackline: 7 Beaufort Sea State: 2
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 10:15 WP#: 26 Lat: 30.356961 Long: -80.367100
Species: *Tursiops truncatus* Numbers (Low/High/Best): 15 / 20 / 18
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 5139, 5147, 5148, 5151-53, 5156-58
Photographer: Ryan Frame numbers: 5139 - 5161 Spacer: 5162
Calculated distance from Trackline: 0.89 km

Final Time and Position of Sighting

Time: 10:17 WP#: 27 Lat: 30.361096 Long: -80.362452
Calculated Distance Traveled: 0.64 km

Behavior and Additional Comments

Feeding

Thursday, July 10, 2014 Sighting # 5

Initial sighting on Track

Time: 10:21 WP#: 29 Lat: 30.365111 Long: -80.251691
Vertical Angle: 2 Horizontal Bearing in Degrees: 100 Sighting Cue: Body
On/Off Effort: On Trackline: 7 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 10:22 WP#: 30 Lat: 30.360617 Long: -80.262277
Species: *Tursiops truncatus* Numbers (Low/High/Best): 7 / 15 / 12
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 5165, 5166, 5175
Photographer: Ryan Frame numbers: 5163 - 5183 Spacer: 5184
Calculated distance from Trackline: 1.13 km

Final Time and Position of Sighting

Time: 10:25 WP#: 31 Lat: 30.364058 Long: -80.267161
Calculated Distance Traveled: 0.61 km

Behavior and Additional Comments

Shark in the mix, doing deeper dives

Thursday, July 10, 2014 Sighting # 6

Initial sighting on Track

Time: 10:57 WP#: 38 Lat: 30.434145 Long: -80.443352
Vertical Angle: 2 Horizontal Bearing in Degrees: 110 Sighting Cue: Body
On/Off Effort: On Trackline: 8 Beaufort Sea State: 2
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 10:59 WP#: 39 Lat: 30.439794 Long: -80.439207
Species: *Stenella frontalis* Numbers (Low/High/Best): 4 / 8 / 6
Features used in Species ID: Spotting, light and dark pattern down body, white tip to rostrum

Representative images used for Species ID: 5185
Photographer: Ryan Frame numbers: 5185 - 5212 Spacer: 5213
Calculated distance from Trackline: 0.74 km

Final Time and Position of Sighting

Time: 11:02 WP#: 40 Lat: 30.440051 Long: -80.441590
Calculated Distance Traveled: 0.23 km

Behavior and Additional Comments

Tail slapping, deeper dives

Thursday, July 10, 2014 Sighting # 7

Initial sighting on Track

Time: 11:20 WP#: 50 Lat: 30.498806 Long: -80.384624
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: On Trackline: 9 Beaufort Sea State: 2
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 11:22 WP#: 51 Lat: 30.505971 Long: -80.388857
Species: *Tursiops truncatus* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 5214, 5215, 5220
Photographer: Ryan Frame numbers: 5214 - 5220 Spacer: 5221
Calculated distance from Trackline: 0.89 km

Final Time and Position of Sighting

Time: 11:23 WP#: 52 Lat: 30.500592 Long: -80.392223
Calculated Distance Traveled: 0.68 km

Behavior and Additional Comments

Deeper dives

Thursday, July 10, 2014 Sighting # 8

Initial sighting on Track

Time: 11:43 WP#: 58 Lat: 30.567090 Long: -79.845484
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 10 Beaufort Sea State: 1
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 11:44 WP#: 59 Lat: 30.568731 Long: -79.847870
Species: *Globicephala macrorhynchus* Numbers (Low/High/Best): 8 / 15 / 10
Features used in Species ID: Blunt head, black in color, small pectorals

Representative images used for Species ID: 5222, 5233, 5236
Photographer: Ryan Frame numbers: 5222 - 5238 Spacer: 5239
Calculated distance from Trackline: 0.29 km

Final Time and Position of Sighting

Time: 11:50 WP#: 60 Lat: 30.574232 Long: -79.846997
Calculated Distance Traveled: 0.62 km

Behavior and Additional Comments

Spaced out, some dove when we flew over, not traveling

Thursday, July 10, 2014 Sighting # 9

Initial sighting on Track

Time: 12:05 WP#: 63 Lat: 30.567696 Long: -80.421769
Vertical Angle: 3 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 10 Beaufort Sea State: 2
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 12:07 WP#: 64 Lat: 30.574607 Long: -80.418908
Species: *Stenella frontalis* Numbers (Low/High/Best): 8 / 12 / 10
Features used in Species ID: Spotting, alternating light and dark patterns down body

Representative images used for Species ID: 5252, 5256
Photographer: Ryan Frame numbers: 5240 - 5258 Spacer: 5259
Calculated distance from Trackline: 0.82 km

Final Time and Position of Sighting

Time: 12:09 WP#: 65 Lat: 30.573852 Long: -80.426881
Calculated Distance Traveled: 0.77 km

Behavior and Additional Comments

milling at the surface

Thursday, July 10, 2014 Sighting # 10

Initial sighting on Track

Time: 14:32 WP#: 77 Lat: 30.103048 Long: -80.046946
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 4 Beaufort Sea State: 2
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 14:42 WP#: 78 Lat: 30.100698 Long: -80.027906
Species: *Grampus griseus* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID: Blunt head with cleft in middle, white scarring, gray body

Representative images used for Species ID: 5260, 5264
Photographer: Ryan Frame numbers: 5260 - 5288 Spacer: 5289
Calculated distance from Trackline: 1.85 km

Final Time and Position of Sighting

Time: 14:46 WP#: 79 Lat: 30.103110 Long: -80.026053
Calculated Distance Traveled: 0.32 km

Behavior and Additional Comments

Traveling in a V, surfacing together spread out

Thursday, July 10, 2014 Sighting # 11

Initial sighting on Track

Time: 14:56 WP#: 82 Lat: 30.100950 Long: -80.358014
Vertical Angle: 1 Horizontal Bearing in Degrees: 120 Sighting Cue: Body
On/Off Effort: On Trackline: 3 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: N/A WP#: N/A Lat: N/A Long: N/A
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 2 / 2 / 2
Features used in Species ID: N/A

Representative images used for Species ID: N/A
Photographer: N/A Frame numbers: N/A Spacer: N/A
Calculated distance from Trackline: N/A

Final Time and Position of Sighting

Time: 15:04 WP#: 83 Lat: 30.100318 Long: -80.356570
Calculated Distance Traveled: N/A

Behavior and Additional Comments

Logging at the surface, no resight

Friday, July 11, 2014 Sighting # 1

Initial sighting on Track

Time: 9:08 WP#: 5 Lat: 30.566145 Long: -80.467532
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: On Trackline: 10 Beaufort Sea State: 1
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 9:10 WP#: 6 Lat: 30.567396 Long: -80.460601
Species: *Stenella frontalis* Numbers (Low/High/Best): 8 / 9 / 8
Features used in Species ID: Spotting pattern present on adults, white tip to rostrum.

Representative images used for Species ID: 5290
Photographer: Erin Frame numbers: 5290 - 5292 Spacer: 5293
Calculated distance from Trackline: 0.68 km

Final Time and Position of Sighting

Time: 9:16 WP#: 7 Lat: 30.570226 Long: -80.453197
Calculated Distance Traveled: 0.78 km

Behavior and Additional Comments

Aircraft carrier and jets nearby

Friday, July 11, 2014 Sighting # 2

Initial sighting on Track

Time: 10:36 WP#: 29 Lat: 30.366487 Long: -80.482368
Vertical Angle: 2 Horizontal Bearing in Degrees: 100 Sighting Cue: Body
On/Off Effort: On Trackline: 7 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 10:43 WP#: 30 Lat: 30.364213 Long: -80.491788
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 2 / 2 / 2
Features used in Species ID: Animal surfacing to breath, fusiform body shape, fluke parallel to waters surface.

Representative images used for Species ID: NA
Photographer: NA Frame numbers: NA Spacer: NA
Calculated distance from Trackline: 0.93 km

Final Time and Position of Sighting

Time: NA WP#: NA Lat: NA Long: NA
Calculated Distance Traveled: NA

Behavior and Additional Comments

No Resight, second point is assumed location.

Friday, July 11, 2014 Sighting # 3

Initial sighting on Track

Time: 10:48 WP#: 33 Lat: 30.366148 Long: -80.587440
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 7 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 10:49 WP#: 34 Lat: 30.364667 Long: -80.581839
Species: *Stenella frontalis* Numbers (Low/High/Best): 6 / 7 / 6
Features used in Species ID: Alternating light and dark coloration on body, spotting pattern present on adults, white tip to rostrum.
Representative images used for Species ID: 5308, 5310
Photographer: Erin Frame numbers: 5294 - 5318 Spacer: 5319
Calculated distance from Trackline: 0.56 km

Final Time and Position of Sighting

Time: 11:00 WP#: 35 Lat: 30.365974 Long: -80.590650
Calculated Distance Traveled: 0.86 km

Behavior and Additional Comments

Loose grouping of animals, slow travel near the surface.

Friday, July 11, 2014 Sighting # 4

Initial sighting on Track

Time: 11:47 WP#: 46 Lat: 30.233488 Long: -80.285708
Vertical Angle: 3 Horizontal Bearing in Degrees: 90 Sighting Cue: Breach
On/Off Effort: On Trackline: 5 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 11:49 WP#: 47 Lat: 30.237142 Long: -80.282910
Species: *Tursiops truncatus* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID: Robust body appearance, uniform grey coloration.
Representative images used for Species ID: 5325, 5326
Photographer: Erin Frame numbers: 5320 - 5326 Spacer: 5327
Calculated distance from Trackline: 0.49 km

Final Time and Position of Sighting

Time: 11:57 WP#: 48 Lat: 30.233684 Long: -80.285005
Calculated Distance Traveled: 0.43 km

Behavior and Additional Comments

Animals showing quick surfacings then diving from sight - difficult to relocate.

Friday, July 11, 2014 Sighting # 5

Initial sighting on Track

Time: 14:01 WP#: 56 Lat: 30.165890 Long: -80.323198
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 4 Beaufort Sea State: 2
Observer: Ryan Observer side: Left

Actual Time and Position of Sighting

Time: 14:03 WP#: 57 Lat: 30.165175 Long: -80.321299
Species: *Tursiops truncatus* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID: Uniform grey coloration, robust body appearance and dorsal fin.

Representative images used for Species ID: 5331 to 5334
Photographer: Erin Frame numbers: 5328 to 5336 Spacer: 5337
Calculated distance from Trackline: 0.20 km

Final Time and Position of Sighting

Time: 14:06 WP#: 58 Lat: 30.164488 Long: -80.322663
Calculated Distance Traveled: 0.15 km

Behavior and Additional Comments

Swimming in a close group.

Saturday, August 9, 2014 Sighting # 3

Initial sighting on Track

Time: 12:30 WP#: 42 Lat: 30.565456 Long: -80.672414
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 10 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 12:39 WP#: 43 Lat: 30.572835 Long: -80.668421
Species: *Stenella frontalis* Numbers (Low/High/Best): 6 / 7 / 6
Features used in Species ID: Alternating light and dark pattern down body, white tip to rostrum

Representative images used for Species ID:
Photographer: Erin Frame numbers: 5536 to 5540 Spacer: 5541
Calculated distance from Trackline: 0.91 km

Final Time and Position of Sighting

Time: 12:41 WP#: 44 Lat: 30.568494 Long: -80.667880
Calculated Distance Traveled: 0.49 km

Behavior and Additional Comments

A few animals, well spread out - never formed into a single group.

Saturday, August 9, 2014 Sighting # 4

Initial sighting on Track

Time: 14:41 WP#: 54 Lat: 29.966449 Long: -80.269681
Vertical Angle: 3 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 1 Beaufort Sea State: 2
Observer: Ryan Observer side: Left

Actual Time and Position of Sighting

Time: 14:43 WP#: 55 Lat: 29.970883 Long: -80.271116
Species: *Tursiops truncatus* Numbers (Low/High/Best): 6 / 6 / 6
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID:
Photographer: Erin Frame numbers: 5542 to 5556 Spacer: 5557
Calculated distance from Trackline: 0.51 km

Final Time and Position of Sighting

Time: 14:45 WP#: 56 Lat: 29.966619 Long: -80.276378
Calculated Distance Traveled: 0.69 km

Behavior and Additional Comments

Two groups of three animals traveling south, came together into one group after circling. Group dove from the surface on our third circle.

Sunday, August 10, 2014 Sighting # 1

Initial sighting on Track

Time: 9:57 WP#: 7 Lat: 30.031633 Long: -80.179262
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 2 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 10:00 WP#: 8 Lat: 30.028559 Long: -80.181611
Species: *Globicephala macrorhynchus* Numbers (Low/High/Best): 10 / 20 / 15
Features used in Species ID: Black color, blunt heads, short pectorals

Representative images used for Species ID: 5564, 5570
Photographer: Ryan Frame numbers: 5560 - 5574 Spacer: 5575
Calculated distance from Trackline: 0.41 km

Final Time and Position of Sighting

Time: 10:08 WP#: 9 Lat: 30.035048 Long: -80.181830
Calculated Distance Traveled: 0.72 km

Behavior and Additional Comments

Logging at or just below the surface, started traveling when we flew over

Sunday, August 10, 2014 Sighting # 2

Initial sighting on Track

Time: 11:16 WP#: 21 Lat: 30.165172 Long: -80.562879
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: 1 Trackline: 90 Beaufort Sea State: 3
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 11:18 WP#: 22 Lat: 30.171305 Long: -80.556629
Species: *Tursiops truncatus* Numbers (Low/High/Best): 2 / 2 / 2
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 5580
Photographer: Ryan Frame numbers: 5576 - 5584 Spacer: 5585
Calculated distance from Trackline: 0.91 km

Final Time and Position of Sighting

Time: 11:19 WP#: 23 Lat: 30.169372 Long: -80.560244
Calculated Distance Traveled: 0.41 km

Behavior and Additional Comments

Traveling fast just below the surface

Sunday, August 10, 2014 Sighting # 3

Initial sighting on Track

Time: 11:21 WP#: 25 Lat: 30.167432 Long: -80.592551
Vertical Angle: 2 Horizontal Bearing in Degrees: 60 Sighting Cue: Body
On/Off Effort: On Trackline: 4 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 11:24 WP#: 26 Lat: 30.163233 Long: -80.597502
Species: *Tursiops truncatus* Numbers (Low/High/Best): 5 / 5 / 5
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 5587, 5589
Photographer: Ryan Frame numbers: 5586 - 5590 Spacer: 5591
Calculated distance from Trackline: 0.67 km

Final Time and Position of Sighting

Time: 11:25 WP#: 27 Lat: 30.166783 Long: -80.599373
Calculated Distance Traveled: 0.43 km

Behavior and Additional Comments

Traveling subsurface

Sunday, August 10, 2014 Sighting # 4

Initial sighting on Track

Time: 12:20 WP#: 35 Lat: 30.299162 Long: -80.496760
Vertical Angle: 3 Horizontal Bearing in Degrees: 45 Sighting Cue: Splash
On/Off Effort: On Trackline: 6 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 12:23 WP#: 36 Lat: 30.287077 Long: -80.502722
Species: *Stenella frontalis* Numbers (Low/High/Best): 50 / 75 / 65
Features used in Species ID: Alternating light and dark pattern down body, spotting

Representative images used for Species ID: 5599, 5600, 5604
Photographer: Ryan Frame numbers: 5592 - 5613 Spacer: 5614
Calculated distance from Trackline: 1.46 km

Final Time and Position of Sighting

Time: 12:27 WP#: 37 Lat: 30.292318 Long: -80.506828
Calculated Distance Traveled: 0.70 km

Behavior and Additional Comments

fast travel, large group spaced out in a line, some dove when we flew over, started bunching up and circling as if feeding

Thursday, September 11, 2014 Sighting # 1

Initial sighting on Track

Time: 8:59 WP#: 4 Lat: 30.566551 Long: -80.597897
Vertical Angle: 2 Horizontal Bearing in Degrees: 100 Sighting Cue: Splash
On/Off Effort: On Trackline: 10 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 9:01 WP#: 5 Lat: 30.559103 Long: -80.606016
Species: *Tursiops truncatus* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID: Camera error no images collected today

Representative images used for Species ID: card error
Photographer: Erin Frame numbers: card error Spacer: 6190
Calculated distance from Trackline: 1.13 km

Final Time and Position of Sighting

Time: 9:02 WP#: 6 Lat: 30.559795 Long: -80.610651
Calculated Distance Traveled: 0.45 km

Behavior and Additional Comments

Pair plus a third animal farther away. Slow travel surfacing regularly.

Thursday, September 11, 2014 Sighting # 2

Initial sighting on Track

Time: NA WP#: NA Lat: NA Long: NA
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: Off Trackline: 10 - 9 Beaufort Sea State: 3
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 9:27 WP#: 14 Lat: 30.501895 Long: -79.793852
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 2 / 2 / 2
Features used in Species ID: Marine mammal, dolphin shaped
Camera error no images collected today

Representative images used for Species ID: NA
Photographer: Erin Frame numbers: NA Spacer: NA
Calculated distance from Trackline: NA

Final Time and Position of Sighting

Time: NA WP#: NA Lat: NA Long: NA
Calculated Distance Traveled: NA

Behavior and Additional Comments

Larger than *Tursiops*? - surfaced once, no resight

Saturday, August 9, 2014 Sighting # 1

Initial sighting on Track

Time: 10:19 WP#: 16 Lat: 30.366355 Long: -80.444023
Vertical Angle: 3 Horizontal Bearing in Degrees: 120 Sighting Cue: Splash
On/Off Effort: On Trackline: 7 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 10:21 WP#: 17 Lat: 30.368869 Long: -80.457757
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID:

Representative images used for Species ID:
Photographer: NA Frame numbers: NA Spacer: NA
Calculated distance from Trackline: 1.34 km

Final Time and Position of Sighting

Time: 10:33 WP#: 18 Lat: 30.369328 Long: -80.451510
Calculated Distance Traveled: NA

Behavior and Additional Comments

Difficult to relocate, final point is an assumed location made with no resight of animals.

Saturday, August 9, 2014 Sighting # 2

Initial sighting on Track

Time: 12:09 WP#: 38 Lat: 30.565946 Long: -80.369783
Vertical Angle: 2 Horizontal Bearing in Degrees: 45 Sighting Cue: Body
On/Off Effort: On Trackline: 10 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 12:10 WP#: 39 Lat: 30.563541 Long: -80.371384
Species: *Stenella frontalis* Numbers (Low/High/Best): 70 / 75 / 75
Features used in Species ID: Alternating light and dark down body, white tip to rostrum

Representative images used for Species ID: 5500, 5514, 5519, 5522
Photographer: Erin Frame numbers: 5488 - 5534 Spacer: 5535
Calculated distance from Trackline: 0.31 km

Final Time and Position of Sighting

Time: 12:17 WP#: 40 Lat: 30.574214 Long: -80.371198
Calculated Distance Traveled: 1.18 km

Behavior and Additional Comments

Lots of animals in multiple scattered groups. Splashing at the surface because of animals charging after one another. One consolidated group of about 35 formed up after we began circling and stayed stationary near the surface, still splashing so easy to relocate.

Thursday, September 11, 2014 Sighting # 3

Initial sighting on Track

Time: 10:08 WP#: 25 Lat: 30.432969 Long: -80.512723
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: On Trackline: 8 Beaufort Sea State: 2
Observer: Ryan Observer side: Left

Actual Time and Position of Sighting

Time: 10:10 WP#: 26 Lat: 30.435404 Long: -80.514291
Species: *Tursiops truncatus* Numbers (Low/High/Best): 3 / 5 / 5
Features used in Species ID: Camera error no images collected today

Representative images used for Species ID:
Photographer: Erin Frame numbers: 6191 - 6206 Spacer: 6207
Calculated distance from Trackline: 0.30 km

Final Time and Position of Sighting

Time: 10:11 WP#: 27 Lat: 30.431944 Long: -80.51901
Calculated Distance Traveled: 0.59 km

Behavior and Additional Comments

Splashing near a patch of sargassum then slowly moved away. Two pairs and a single interacting with one another playfully at the surface.

Thursday, September 11, 2014 Sighting # 4

Initial sighting on Track

Time: 10:38 WP#: 35 Lat: 30.364538 Long: -79.951779
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 7 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 10:38 WP#: 36 Lat: 30.363574 Long: -79.949841
Species: *Tursiops truncatus* Numbers (Low/High/Best): 7 / 8 / 7
Features used in Species ID: Camera error no images collected today

Representative images used for Species ID:
Photographer: Erin Frame numbers: 2208 - 6223 Spacer: 6224
Calculated distance from Trackline: 0.21 km

Final Time and Position of Sighting

Time: 10:43 WP#: 37 Lat: 30.363644 Long: -79.951651
Calculated Distance Traveled: 0.17 km

Behavior and Additional Comments

Two mom calf pairs, plus a second group of three, calves ~1/2 mothers length
Group not cooperative for photos - staying subsurface despite slow travel.

Thursday, September 11, 2014 Sighting # 5

Initial sighting on Track

Time: 10:58 WP#: 42 Lat: 30.364834 Long: -80.520929
Vertical Angle: 1 Horizontal Bearing in Degrees: 100 Sighting Cue: Body
On/Off Effort: On Trackline: 7 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 10:59 WP#: 43 Lat: 30.366777 Long: -80.519971
Species: *Tursiops truncatus* Numbers (Low/High/Best): 4 / 4 / 4
Features used in Species ID: Camera error no images collected today

Representative images used for Species ID:
Photographer: Erin Frame numbers: 6225 - 6236 Spacer: 6237
Calculated distance from Trackline: 0.23 km

Final Time and Position of Sighting

Time: 11:04 WP#: 44 Lat: 30.361896 Long: -80.519715
Calculated Distance Traveled: 0.54 km

Behavior and Additional Comments

Animals well spaced apart, dark bodied, white noses, no spots

Thursday, September 11, 2014 Sighting # 6

Initial sighting on Track

Time: 11:10 WP#: 46 Lat: 30.364757 Long: -80.627118
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: On Trackline: 7 Beaufort Sea State: 2
Observer: Ryan Observer side: Left

Actual Time and Position of Sighting

Time: 11:11 WP#: 47 Lat: 30.361248 Long: -80.625622
Species: *Stenella frontalis* Numbers (Low/High/Best): 15 / 17 / 16
Features used in Species ID: Camera error no images collected today

Representative images used for Species ID:
Photographer: Ryan Frame numbers: 6238 - 6246 Spacer: 6247
Calculated distance from Trackline: 0.41 km

Final Time and Position of Sighting

Time: 11:14 WP#: 48 Lat: 30.367153 Long: -80.625603
Calculated Distance Traveled: 0.65 km

Behavior and Additional Comments

Three animals first observed, more upon circling - scattered additional groups. Regular surfacings.

Thursday, September 11, 2014 Sighting # 7

Initial sighting on Track

Time: 11:23 WP#: 53 Lat: 30.299912 Long: -80.558910
Vertical Angle: 3 Horizontal Bearing in Degrees: 100 Sighting Cue: Reflect
On/Off Effort: On Trackline: 6 Beaufort Sea State: 2
Observer: Ryan Observer side: Left

Actual Time and Position of Sighting

Time: 11:24 WP#: 54 Lat: 30.303606 Long: -80.557410
Species: *Stenella frontalis* Numbers (Low/High/Best): 4 / 4 / 4
Features used in Species ID: Camera error no images collected today

Representative images used for Species ID:
Photographer: Erin Frame numbers: 6248 - 6270 Spacer: 6271
Calculated distance from Trackline: 0.44 km

Final Time and Position of Sighting

Time: 11:28 WP#: 55 Lat: 30.311009 Long: -80.562585
Calculated Distance Traveled: 0.96 km

Behavior and Additional Comments

Group showing slow travel without a true direction - chasing one another
"lack direction"

Thursday, September 11, 2014 Sighting # 8

Initial sighting on Track

Time: 11:58 WP#: 65 Lat: 30.232548 Long: -80.040449
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: On Trackline: 5 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 11:59 WP#: 66 Lat: 30.233112 Long: -80.046093
Species: *Grampus griseus* Numbers (Low/High/Best): 25 / 30 / 27
Features used in Species ID: Camera error no images collected today

Representative images used for Species ID:
Photographer: Erin Frame numbers: 6272 - 6300 Spacer: 6301
Calculated distance from Trackline: 0.55 km

Final Time and Position of Sighting

Time: 12:02 WP#: 67 Lat: 30.238231 Long: -80.047989
Calculated Distance Traveled: 0.60 km

Behavior and Additional Comments

Two groups one of ~15 and the other ~10 individuals

Thursday, September 11, 2014 Sighting # 9

Initial sighting on Track

Time: 11:58 WP#: 65 Lat: 30.232548 Long: -80.040449
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: On Trackline: 5 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 11:59 WP#: 66 Lat: 30.233112 Long: -80.046093
Species: *Tursiops truncatus* Numbers (Low/High/Best): 4 / 4 / 4
Features used in Species ID: Camera error no images collected today

Representative images used for Species ID:
Photographer: Erin Frame numbers: NA Spacer: NA
Calculated distance from Trackline: 0.55 km

Final Time and Position of Sighting

Time: 12:02 WP#: 67 Lat: 30.238231 Long: -80.047989
Calculated Distance Traveled: 0.60 km

Behavior and Additional Comments

Observed while circling Ggr in sighting 8. No photos collected

Thursday, September 11, 2014 Sighting # 10

Initial sighting on Track

Time: 12:16 WP#: 72 Lat: 30.232518 Long: -80.540305
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Splash
On/Off Effort: On Trackline: 3 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 12:23 WP#: 73 Lat: 30.227093 Long: -80.545556
Species: *Stenella frontalis* Numbers (Low/High/Best): 5 / 5 / 5
Features used in Species ID: Camera error no images collected today

Representative images used for Species ID:
Photographer: Erin Frame numbers: 6302 - 6313 Spacer: 6314
Calculated distance from Trackline: 0.79 km

Final Time and Position of Sighting

Time: 12:28 WP#: 74 Lat: 30.220836 Long: -80.540824
Calculated Distance Traveled: 0.83 km

Behavior and Additional Comments

Pair of animals heading offshore. Small amount of space between animals. Showing slow travel near the surface - looked small.

Thursday, September 11, 2014 Sighting # 11

Initial sighting on Track

Time: 14:52 WP#: 86 Lat: 30.100043 Long: -80.451730
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 3 Beaufort Sea State: 2
Observer: Erin Observer side: Right

Actual Time and Position of Sighting

Time: 14:57 WP#: 87 Lat: 30.088727 Long: -80.448008
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 1 / 1 / 1
Features used in Species ID: Camera error no images collected today

Representative images used for Species ID: NA
Photographer: Erin Frame numbers: NA Spacer: NA
Calculated distance from Trackline: 1.3 km

Final Time and Position of Sighting

Time: NA WP#: NA Lat: NA Long: NA
Calculated Distance Traveled: NA

Behavior and Additional Comments

Single animal, no resight - took an assumed location

Thursday, September 11, 2014 Sighting # 12

Initial sighting on Track

Time: 15:18 WP#: 93 Lat: 30.033254 Long: -80.295732
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 2 Beaufort Sea State: 3
Observer: Ryan Observer side: Left

Actual Time and Position of Sighting

Time: 15:20 WP#: 94 Lat: 30.030173 Long: -80.286260
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 8 / 9 / 8
Features used in Species ID: Camera error no images collected today

Representative images used for Species ID: NA
Photographer: Erin Frame numbers: 6315 - 6325 Spacer: 6326
Calculated distance from Trackline: 0.97 km

Final Time and Position of Sighting

Time: 15:31 WP#: 95 Lat: 30.032612 Long: -80.275755
Calculated Distance Traveled: 1.04 km

Behavior and Additional Comments

Single animal first observed - upon circling spotted a group of three plus more scattered groups
Animals staying subsurface- difficult to track or photograph

Friday, September 12, 2014 Sighting # 1

Initial sighting on Track

Time: 9:43 WP#: 16 Lat: 30.298591 Long: -80.680745
Vertical Angle: 1 Horizontal Bearing in Degrees: 100 Sighting Cue: Body
On/Off Effort: On Trackline: 6 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 9:45 WP#: 17 Lat: 30.301738 Long: -80.683310
Species: *Tursiops truncatus* Numbers (Low/High/Best): 4 / 4 / 4
Features used in Species ID: Robust, uniform gray

Representative images used for Species ID: 6332, 6333
Photographer: Ryan Frame numbers: 6327 - 6338 Spacer: 6339
Calculated distance from Trackline: 0.43 km

Final Time and Position of Sighting

Time: 9:51 WP#: 18 Lat: 30.307441 Long: -80.679939
Calculated Distance Traveled: 0.71 km

Behavior and Additional Comments

Swimming in circles, playing or feeding, splashing

Friday, September 12, 2014 Sighting # 2

Initial sighting on Track

Time: 10:44 WP#: 29 Lat: 30.430811 Long: -80.682220
Vertical Angle: 1 Horizontal Bearing in Degrees: 60 Sighting Cue: Body
On/Off Effort: On Trackline: 8 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 10:48 WP#: 30 Lat: 30.432361 Long: -80.678475
Species: *Stenella frontalis* Numbers (Low/High/Best): 4 / 9 / 7
Features used in Species ID: Alternating light and dark pattern down body, spotting

Representative images used for Species ID: 6348, 6353
Photographer: Ryan Frame numbers: 6346 - 6360 Spacer: 6361
Calculated distance from Trackline: 0.39 km

Final Time and Position of Sighting

Time: 10:53 WP#: 31 Lat: 30.440101 Long: -80.684400
Calculated Distance Traveled: 1.03 km

Behavior and Additional Comments

moving different directions but coming together

Friday, September 12, 2014 Sighting # 3

Initial sighting on Track

Time: 11:16 WP#: 35 Lat: 30.499509 Long: -79.977983
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 9 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 11:19 WP#: 36 Lat: 30.501488 Long: -79.978920
Species: *Grampus griseus* Numbers (Low/High/Best): 8 / 16 / 12
Features used in Species ID: White scaring down body, blunt head with cleft in the middle

Representative images used for Species ID: 6370
Photographer: Ryan Frame numbers: 6370 - 6389 Spacer: 6390
Calculated distance from Trackline: 0.24 km

Final Time and Position of Sighting

Time: 11:21 WP#: 37 Lat: 30.502987 Long: -79.984723
Calculated Distance Traveled: 0.58 km

Behavior and Additional Comments

logging subsurface with regular breaths

Friday, September 12, 2014 Sighting # 4

Initial sighting on Track

Time: 11:42 WP#: 42 Lat: 30.565634 Long: -80.318383
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 10 Beaufort Sea State: 2
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 11:43 WP#: 43 Lat: 30.565767 Long: -80.316411
Species: *Stenella frontalis* Numbers (Low/High/Best): 9 / 16 / 15
Features used in Species ID: Alternating light and dark pattern down body, spotting

Representative images used for Species ID: 6394, 6411
Photographer: Ryan Frame numbers: 6391 - 6412 Spacer: 6413
Calculated distance from Trackline: 0.19 km

Final Time and Position of Sighting

Time: 11:48 WP#: 44 Lat: 30.565047 Long: -80.313964
Calculated Distance Traveled: 0.25 km

Behavior and Additional Comments

Traveling subsurface

Friday, September 12, 2014 Sighting # 5

Initial sighting on Track

Time: 11:55 WP#: 47 Lat: 30.565535 Long: -80.565771
Vertical Angle: 1 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 10 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 11:57 WP#: 48 Lat: 30.562035 Long: -80.568452
Species: *Stenella frontalis* Numbers (Low/High/Best): 5 / 5 / 5
Features used in Species ID: Alternating light and dark pattern down body, spotting

Representative images used for Species ID: 6416, 6420, 6422, 6426
Photographer: Ryan Frame numbers: 6414 - 6429 Spacer: 6430
Calculated distance from Trackline: 0.47 km

Final Time and Position of Sighting

Time: 12:01 WP#: 49 Lat: 30.564676 Long: -80.566515
Calculated Distance Traveled: 0.35 km

Behavior and Additional Comments

traveling in a tight group

Friday, September 12, 2014 Sighting # 6

Initial sighting on Track

Time: 15:15 WP#: 63 Lat: 30.165186 Long: -80.348848
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 4 Beaufort Sea State: 3
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 15:23 WP#: 64 Lat: 30.166789 Long: -80.363570
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 2 / 2 / 2
Features used in Species ID: N/A

Representative images used for Species ID: N/A
Photographer: Ryan Frame numbers: N/A Spacer: N/A
Calculated distance from Trackline: 1.43 km

Final Time and Position of Sighting

Time: 15:23 WP#: 65 Lat: 30.166789 Long: -80.363570
Calculated Distance Traveled: N/A

Behavior and Additional Comments

No resight, no photos

Friday, September 12, 2014 Sighting # 7

Initial sighting on Track

Time: N/A WP#: N/A Lat: N/A Long: N/A
Vertical Angle: N/ Horizontal Bearing in Degrees: N/A Sighting Cue: N/A
On/Off Effort: Off Trackline: 4 Beaufort Sea State: 3
Observer: Ryan Observer side: Right

Actual Time and Position of Sighting

Time: 15:26 WP#: 66 Lat: 30.170614 Long: -80.396851
Species: *Tursiops truncatus* Numbers (Low/High/Best): 8 / 10 / 9
Features used in Species ID: Uniform gray, robust

Representative images used for Species ID: 6432, 6436, 6439
Photographer: Ryan Frame numbers: 6431 - 6442 Spacer: 6443
Calculated distance from Trackline: N/A

Final Time and Position of Sighting

Time: 15:28 WP#: 67 Lat: 30.166373 Long: -80.387860
Calculated Distance Traveled: 0.98 km

Behavior and Additional Comments

Traveling fast just below the surface

Tuesday, October 21, 2014 Sighting # 1

Initial sighting on Track

Time: 9:51 WP#: 7 Lat: 30.290163 Long: -80.282996
Vertical Angle: 1 Horizontal Bearing in Degrees: 110 Sighting Cue: Body
On/Off Effort: On Trackline: 6 Beaufort Sea State: 3
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: N/A WP#: N/A Lat: N/A Long: N/A
Species: *Unidentified Delphinid* Numbers (Low/High/Best): 3 / 3 / 3
Features used in Species ID: N/A

Representative images used for Species ID: N/A
Photographer: N/A Frame numbers: N/A Spacer: N/A
Calculated distance from Trackline: N/A

Final Time and Position of Sighting

Time: N/A WP#: N/A Lat: N/A Long: N/A
Calculated Distance Traveled: N/A

Behavior and Additional Comments

No resight, not photos, playing/feeding, 2 circling, one slow surface travel

Tuesday, October 21, 2014 Sighting # 2

Initial sighting on Track

Time: 15:12 WP#: 41 Lat: 30.097760 Long: -80.208484
Vertical Angle: 2 Horizontal Bearing in Degrees: 90 Sighting Cue: Body
On/Off Effort: On Trackline: 3 Beaufort Sea State: 2
Observer: Erin Observer side: Left

Actual Time and Position of Sighting

Time: 15:15 WP#: 42 Lat: 30.086575 Long: -80.212188
Species: *Grampus griseus* Numbers (Low/High/Best): 20 / 33 / 28
Features used in Species ID: Gray with white scaring, blunt head, cleft down center of melon

Representative images used for Species ID: 7242, 7244, 7249
Photographer: Ryan Frame numbers: 7229 - 7258 Spacer: 7259
Calculated distance from Trackline: 1.29 km

Final Time and Position of Sighting

Time: 15:22 WP#: 43 Lat: 30.079965 Long: -80.207201
Calculated Distance Traveled: 0.88 km

Behavior and Additional Comments

2 groups, were logging until we flew over then started fast travel and spaced out.

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