



FINAL REPORT TO
GEORGIA DEPARTMENT OF NATURAL RESOURCES

NORTHERN EARLY WARNING SYSTEM
NORTH ATLANTIC RIGHT WHALE (*Eubalaena glacialis*)
AERIAL SURVEYS, 2006-2007 SEASON

June 12, 2007

Submitted by:

WILDLIFE TRUST
AQUATIC CONSERVATION PROGRAM

c/o 1601 3rd Street South, Suite F
St. Petersburg, Florida 33701

Prepared by:

Patricia J. Naessig, Cynthia R. Taylor and James A. Powell, Ph.D.

Summary

The 2006-2007 Northern Early Warning System (NEWS) surveys were flown by the Wildlife Trust survey team from December 1, 2006 to March 28, 2007. The NEWS survey area extended from the northern end of Sapelo Island, GA to mid Cumberland Island, GA, out to approximately 32 nautical miles offshore. A total of 55 NEWS surveys were conducted, logging 258.1 hours of hobbs time and averaging 4.7 hours per survey. Overall, 17,415.6 nautical miles of trackline were flown, with 10,243.8 nm (59%) of this total flown in a Beaufort sea state of 3 or less. The complete survey area (442.8 nautical miles of trackline) was covered during 22 of the NEWS surveys, while the survey area was only partially covered during 33 of the flights. Beyond the NEWS surveys conducted during the 2006-2007 season, the Wildlife Trust survey team was also involved in two flights on January 15 and 16, 2007, totaling 7.6 hours of flight hobbs time dedicated to the documenting, tracking and attempted disentanglement of an entangled whale.

A total of 271 right whales during 123 sighting events were documented within the NEWS survey area. Sixty-three mother/calf pairs, 25 single animals, 15 pairs of two right whales, 12 groups of three right whales, five groups of four right whales and six groups of five or six right whales were observed during these sightings. Preliminary photo analysis resulted in the identification of 14 individual mother/calf pairs and an additional 59 individual adult/juvenile whales observed during the NEWS surveys. Forty-five of these 87 individual whales have been initially identified from the North Atlantic Right Whale Catalog. Twenty-eight individual whales do not have a preliminary identification at this time and have been assigned intermatch codes to assist in the initial matching process. The remaining 14 individual whales are calves born in the 2006-2007 season. The overall number of right whale sightings in the 2006-2007 NEWS season is a significant increase over the number of right whale sightings in the NEWS area during the previous survey season. During the 2005-2006 season, 277.4 hobbs hours were flown in the NEWS survey area by the Wildlife Trust team with 178 right whales sighted, including 31 mother/calf pairs. In the 2006-2007 season, 265.7 hobbs hours (including two special circumstance flights) were flown in the NEWS area with 271 right whales sighted, including 63 mother/calf pairs. Preliminary comparisons of the whales sighted in the different southeastern United States survey areas indicate that 16 right whales may have only been sighted in the NEWS survey area during the 2006-2007 season. Additionally, two entangled right whales (BK01SEUS06 and EGNO 3346) and a single dead right whale (EGNO 3508) were observed during the 2006-2007 NEWS surveys.

A majority of the right whale sightings during every month of the 2006-2007 season occurred in the southwestern quarter of the NEWS survey area (western half of the bottom eight tracklines). This section of the survey area was also flown the most during the survey season due to the high vessel traffic and likelihood of ship strike associated with the Brunswick channel located in this area. The end of February and beginning of March were the peak period for right whale sightings during the 2006-2007 NEWS season. One hundred and forty-six (56%) of the 263 total right whales sighted during the NEWS surveys were observed in the 20 day period between February 22 and March 13, 2007. Many of the whales observed in the NEWS survey area were resighted on multiple occasions, with the 2006-2007 mothers representing the highest levels of resights. EGNO 2605 was the whale resighted the most during the surveys having been observed five times before giving birth to her calf and then seven times with her calf.

The survey team also recorded vessel and marine animal sightings during the NEWS surveys, including nine humpback whales observed during eight sighting events. The humpback whale sightings included six solitary adults/juveniles, one mother/calf pair and a dead juvenile humpback. The humpback whales observed during the 2006-2007 season represent the first humpback whales sighted during NEWS surveys since the 2002-2003 survey season. Additionally, two whale/vessel interactions ("close calls") involving a total of four vessels and eight right whales were observed during the 2006-2007 NEWS season.

Introduction

The North Atlantic right whale (*Eubalaena glacialis*) is protected in U.S and territorial waters pursuant to the Marine Mammal Protection Act of 1972, and is classified as an endangered species under the Endangered Species Act of 1973. The only known calving ground for the North Atlantic right whale consists of Atlantic coastal waters in the southeastern United States (SEUS). The area designated as the Southeastern United States Critical Habitat by the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) in 1994 encompasses the waters from Altamaha Sound, Georgia to Sebastian Inlet, Florida out to 5-15 nm from the shoreline (50 CFR 226.203). Minimizing sources of human-caused death, injury and disturbance is a primary objective of the North Atlantic Right Whale (*Eubalaena glacialis*) Recovery Plan (National Marine Fisheries Service, 2005). One of the two primary human-caused threats to right whale survival is ship collisions. The SEUS calving ground includes entrances to three major shipping channels (Brunswick, GA; Fernandina, FL; Jacksonville, FL), resulting in frequent usage of these waters by large commercial and military vessels. In hopes of reducing the risk of ship collisions, the Early Warning System (EWS) was created in 1994 to alert military and commercial vessels of the presence of right whales in the area. These EWS surveys covered areas of high whale density along the coastline from Brunswick, GA to St. Augustine, FL. Data collected since that time indicates that right whales regularly utilize waters outside of the initial EWS study area. In 2002, NOAA Fisheries redesigned the EWS system to include three survey areas (northern, central and southern) that replaced and expanded upon the original single EWS survey area. The redesigned EWS surveys were modified to cover the waters from mid Sapelo Island, GA to the southern end of St. Augustine Beach, FL. The survey effort described in this report covers the area from the northern end of Sapelo Island, GA to mid Cumberland Island, GA, referred to as the Northern Early Warning System (NEWS).

The objectives of the 2006-2007 NEWS surveys were to implement the actions of the North Atlantic Right Whale Recovery Plan, including the following objectives: reduce ship collisions with right whales; document and provide support for entangled right whales; document dead and stranded right whales; monitor the status and trends of abundance and distribution of the western North Atlantic right whale; and characterize and monitor right whale habitat. This report examines the results of the Wildlife Trust (WT) aerial survey efforts while attempting to fulfill these objectives within the Northern Early Warning System survey area for the 2006-2007 calving season.

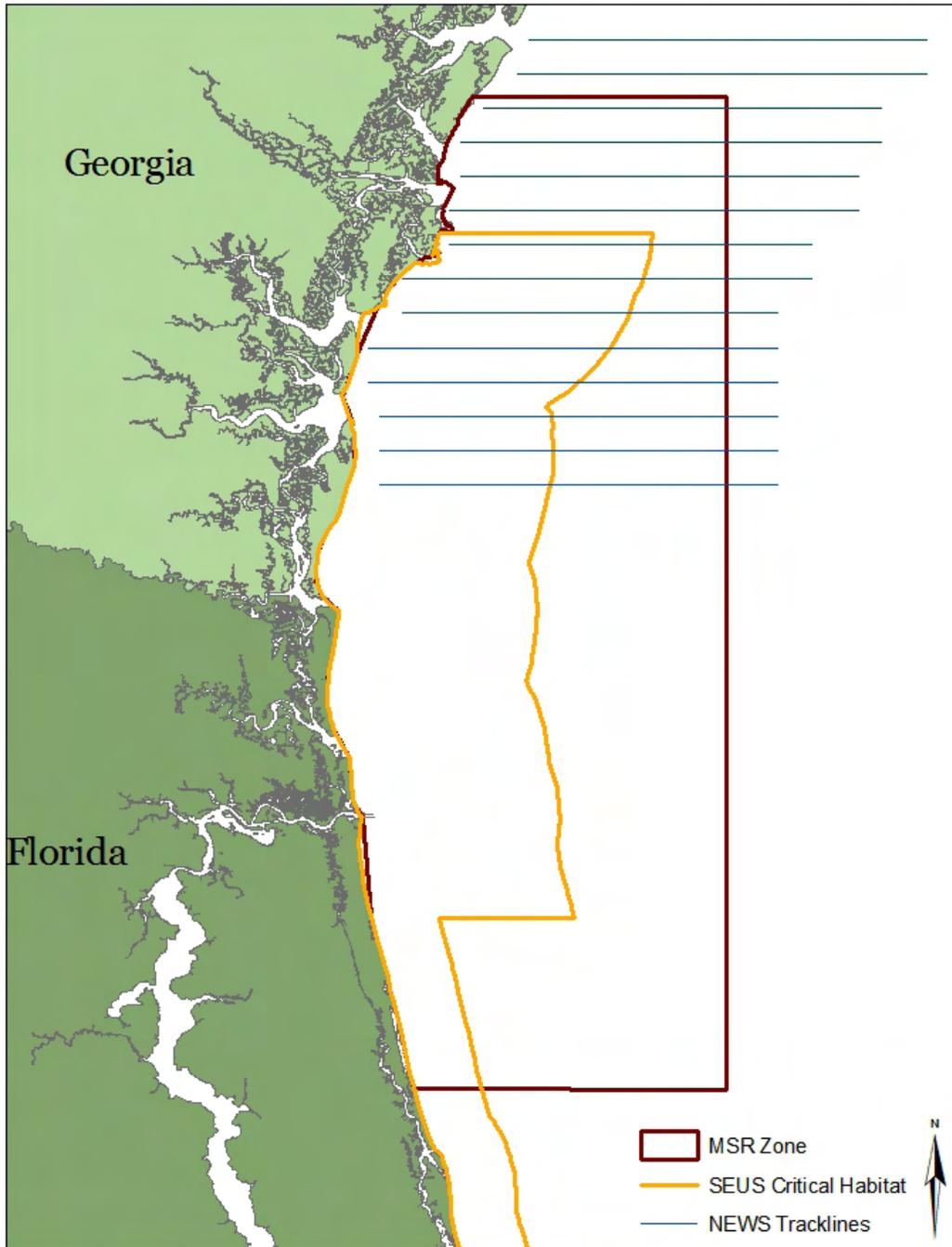
Methods

Study Area

The Northern Early Warning System survey season began on December 1, 2006 and concluded on March 28, 2007. The NEWS survey area for the 2006-2007 season extended from the northern end of Sapelo Island, GA to mid Cumberland Island, GA, and out to approximately 32 nautical miles offshore. Fourteen east/west transect lines of varied lengths (28.8 – 32.4 nm) were flown at 3 nm intervals (Figure 1). A complete survey consisted of 442.8 nm of trackline (Table 1), not including miles flown in transit to, from, and between transect lines. Without any whale sightings, a complete survey took approximately five hours to finish.

Aerial Surveys

Surveys were scheduled to be flown daily from December 1, 2006 through March 31, 2007, weather permitting and under VFR (visual flight rules) conditions. During each normal survey day, the survey aircraft departed from Malcolm McKinnon airport on St. Simons Island, GA and returned to the same airfield. All of the NEWS surveys were conducted in a NOAA owned and operated DeHaviland Twin Otter aircraft. The survey aircraft was equipped with Global Positioning System navigation aids, radar, aviation VHF radio, marine VHF radio, a life raft, PFDs, survival suits, flares, EPIRB, an aircraft ELT



Northern Early Warning System Tracklines
Wildlife Trust/GA DNR
December 01, 2006 - March 28, 2007

Prepared by: Kara Johnson
 Georgia DNR/Wildlife Trust
 NA 063
 March 2007

Figure 1: Map of NEWS survey tracklines including SEUS critical habitat and Mandatory Ship Reporting (MSR) zone.

Table 1: Northern Early Warning System (NEWS) survey transects for the 2006-2007 Season.

Transect Number	Length (NM)	Western Waypoint		Eastern Waypoint	
1	31.5	30° 53 N	81° 22 W	30° 53 N	80° 47 W
2	31.5	30° 56 N	81° 22 W	30° 56 N	80° 47 W
3	31.5	30° 59 N	81° 22 W	30° 59 N	80° 47 W
4	32.4	31° 02 N	81° 23 W	31° 02 N	80° 47 W
5	32.4	31° 05 N	81° 23 W	31° 05 N	80° 47 W
6	29.7	31° 08 N	81° 20 W	31° 08 N	80° 47 W
7	32.4	31° 11 N	81° 20 W	31° 11 N	80° 44 W
8	28.8	31° 14 N	81° 16 W	31° 14 N	80° 44 W
9	32.4	31° 17 N	81° 16 W	31° 17 N	80° 40 W
10	31.5	31° 20 N	81° 15 W	31° 20 N	80° 40 W
11	33.3	31° 23 N	81° 15 W	31° 23 N	80° 38 W
12	31.5	31° 26 N	81° 13 W	31° 26 N	80° 38 W
13	32.4	31° 29 N	81° 10 W	31° 29 N	80° 34 W
14	31.5	31° 32 N	81° 09 W	31° 32 N	80° 34 W

Total NM 442.8

and a satellite telephone. Additionally, individually registered GPIRBs, knives, streamers, and strobes were issued to the observers. Flight protocols also included mandatory use of PFDs and Nomex flight suits on all flights. All observers were also required to complete emergency egress training prior to the start of the survey season.

The NEWS surveys were flown at an altitude of 1000 ft (303 m) and at a ground speed of 100 knots. The surveys were typically begun at the western waypoint of the most northern trackline, transect 14, and flown north to south. However, the start point and direction of flight was determined daily based on weather conditions in the survey area and other survey factors. The necessary environmental conditions for a survey flight included a minimum ceiling of 455m, visibility greater than 2 nm, wind speed less than 16 knots, and Beaufort sea state of 6 or less. During certain time periods of the project, surveys were only flown in a Beaufort sea state of 4 or less and/or a limited number of tracklines were flown in order to conserve available project flight hours.

The survey crew consisted of a pilot and co-pilot, two observers, data recorder and a photographer. The survey team would rotate between the two observer positions and photographer position every four tracklines throughout the duration of the survey. The observers were positioned on either side of the aircraft at the forward bubble windows and sightings of marine animals were reported to the data recorder. The data recorder did not rotate and used a laptop computer to log all sightings into Logger 2000, a software program designed for marine survey data entry. The time, location, number and species of all marine mammals, sea turtles, sharks and large rays were recorded. In addition, all types of vessels observed in the survey area were recorded. Sighting angles for all large vessels of 100 feet or greater in length were recorded using a digital inclinometer. The heading of all large vessels was also documented along with the type, visually estimated length and speed of any vessel of 300 feet or greater in length.

When a right whale was observed, a GPS position was recorded along the trackline at the point of observation. The survey aircraft then broke track and flew directly over the right whale to obtain an exact GPS location. The aircraft also circled over each right whale encountered to obtain digital photographs and document behaviors. After the right whales were fully documented, the aircraft returned to the trackline at the point of departure to continue the survey. The circling for photographic documentation was generally limited to 15 minutes for each sighting. However during special events, such as a right

whale entanglement or ship strike, the survey area was modified as needed and the time spent obtaining photographs was extended past the 15-minute limit.

Determination of Sighting Distance from the Trackline

Sighting distance from the trackline for observed right whales was calculated whenever possible, using the lat/long position on the trackline perpendicular to the position of the whale sighting ($lat_1, long_1$), and the lat/long exact overhead position of the right whale ($lat_2, long_2$). The whale's distance in nautical miles from the trackline was determined by subtracting the distance between the two latitude positions, as 1 minute of latitude=1 nm in the study area (Figure 2).

The sighting distance from the trackline for large vessels was determined using angles obtained from a digital inclinometer at the time of the vessel's sighting. The angle was obtained when the vessel was directly perpendicular to the point on the trackline where the location was marked. Using the altitude of the aircraft (y) and the known angle (A) of the object, the distance (x) of the vessel from the trackline could be determined using the equation: $x=y(\tan A)$, where y =aircraft altitude in meters (Figure 2).

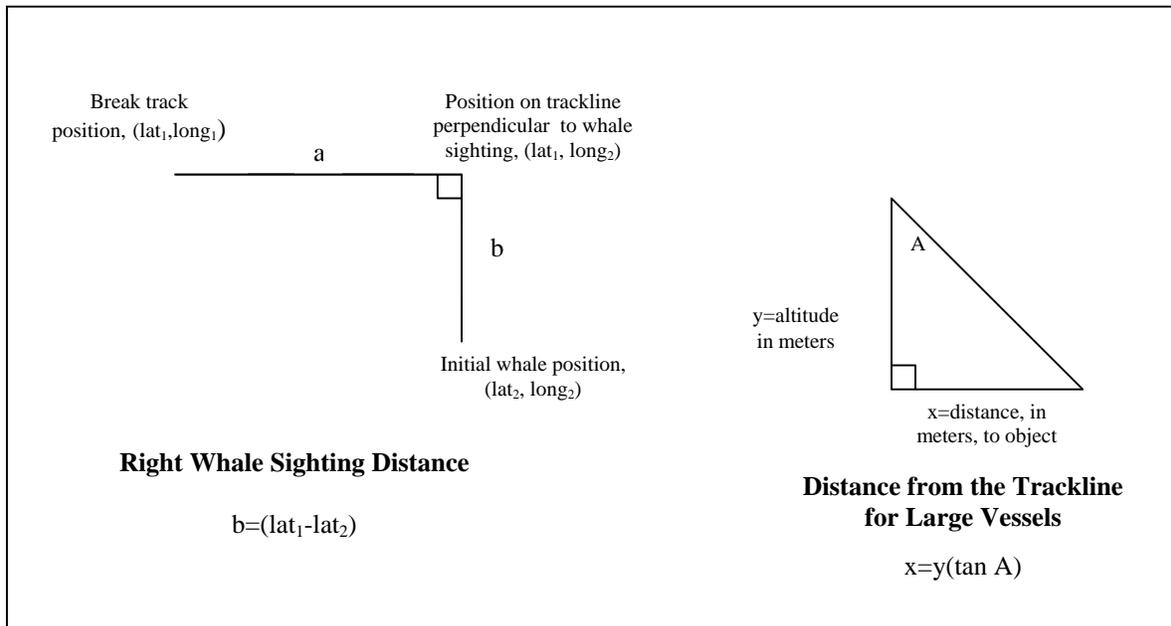


Figure 2: Diagram of methods for determining sighting distances for right whales and large vessels.

Notification of Right Whale Sighting Information

Upon completing data collection for each right whale sighting, the aircraft would immediately use the aircraft satellite phone to call a designated ground contact. The ground contact would then relay the right whale sighting information to Fleet Area Control and Surveillance Facility (FACSFACJAX) at Naval Air Station Jacksonville via a land line. The right whale sighting information reported to the FACSFACJAX dispatcher included date, time, latitude and longitude, direction of movement, age class and number of right whales sighted. FACSFACJAX has the capability to contact all military ships and aircraft in the southeastern United States almost instantaneously with right whale sighting information. In addition, the facility notifies all other military and non-military interests via an alphanumeric pager system and email (Taylor and Brooks, 2002). These interests include all right whale aerial survey teams, ship channel pilots, USCG NAVTEX and state agencies. This near real-time notification of right whale sightings to various entities was put in place in order to minimize the probability of right whale death or injury due to ship strike. It also allows aerial survey teams to investigate and verify sightings reported from other

sources such as the Coast Guard, military ships, dredges and other aircraft. Right whale sightings were also entered into the Mandatory Ship Reporting (MSR) system and relayed to any dredges operating within 15 nautical miles of the sighting. Additionally, if the sighting was within 5 nautical miles of the Brunswick channel, the Brunswick harbor pilots were contacted directly with the sighting information.

Documentation of Whale/Vessel Interactions

Due to the significant impact of ship collisions and other anthropogenic activities on the North Atlantic right whale (National Marine Fisheries Service, 2005), the Wildlife Trust survey team documented any incident in which a vessel was observed heading directly towards or approaching within a close proximity to right whales. The survey team would suspend the normal survey to document the location, number, heading and behavior of the whales involved in the episode. The location, name, type, length, speed and heading of each of the vessels involved were also recorded throughout the event. Observations of the incident were documented until the vessels were no longer in the same vicinity as the right whales. Photographic and video documentation were taken whenever possible. Also, attempts were made to contact the vessels over VHF to make them aware of the presence and location of the right whales. All the information collected for each whale/vessel interaction was entered into an Access database and then submitted as detailed report forms to NOAA Fisheries, the Georgia Department of Natural Resources (GA DNR) and the Florida Fish and Wildlife Research Institute (FWRI). Appendix 1 contains all the 2006-2007 NEWS whale/vessel interaction report forms.

Photographic Identification

Right whales are individually identified by the patterns of cornified skin primarily located on the top of the head between the tip of the rostrum and the blowhole (Payne *et al.*, 1983; Kraus *et al.*, 1986). Photographs of these right whale callosity patterns and other features, including scars, are used for identification and the cataloging of individual right whales. Right whales observed during the NEWS aerial surveys were photographed and sketched in order to identify individual animals using these unique patterns and features.

During a right whale sighting, the left-side observer recorded whale behaviors and sketched the callosity patterns and body scarring of the whales being observed. The right-side observer would shift to the left side of the plane and assist in observing the whales' behaviors. The crewmember in the photographer position would remove the window next to the left rear seat. The survey aircraft would circle at an altitude of 1000 ft (303m) while animals were photographed through the open side window. Photographs were taken of whales using a Canon D60 or 10D digital camera with a 100-400 mm or fixed 300 mm lens. All the photographs obtained during the 2006-2007 NEWS survey season were compared against each other, right whale images from other SEUS aerial survey teams and the New England Aquarium's catalog of North Atlantic right whales in order to determine the probable identity and resights of each individual whale encountered. This preliminary photo analysis by the Wildlife Trust team and initial identification verification by the New England Aquarium (NEAq) has been completed. However, all right whale identifications listed within this report should be considered unverified until NEAq has analyzed all photographs from the 2006-2007 southeast calving season. This final comparison and confirmation process by NEAq is now underway and will most likely be completed sometime in 2008. Thus, all identification results within this report should be viewed as preliminary and subject to change.

Results

Surveys

A total of 55 NEWS surveys were flown from December 1, 2006 to March 28, 2007 (Table 2). A total of 258.1 hours of hobbs time was logged for the NEWS surveys, averaging 4.7 hours of hobbs time per survey. Overall, 17,415.6 nautical miles of trackline were flown, with 10,243.8 nm (59%) of this total flown in a sea state of 3 or less. The complete survey area (442.8 nautical miles of trackline) was covered

during 22 of the NEWS surveys. On 33 of the NEWS flights, the survey area was partially covered due to factors such as inclement weather, special events or limited available project flight hours (Tables 2 and 3). Days with no survey effort in the NEWS survey area were mostly due to unacceptable weather conditions. However, NEWS surveys were not flown from March 29, 2007 to March 31, 2007 because all available project flight hours had been flown by March 28, 2007. Other factors contributing to no fly days were the need to conserve and extend flight hours throughout the survey season, required rest for survey pilots after six days of duty and aircraft related reasons, such as required 100-hour plane maintenance (Table 3).

Table 2: NEWS right whale surveys conducted from 01 December 2006 through 28 March 2007.

Date	Survey Name	Complete Surveys	Partial Surveys	Survey Hobbs Time	Total trackline nmiles flown	Trackline nmiles flown in Beaufort SS < 3	Number of Whales Seen
02-Dec-06	NEWS20061202	1		5.9	442.8	95.0	0
05-Dec-06	NEWS20061205	1		5.3	442.8	274.8	0
06-Dec-06	NEWS20061206	1		5.4	442.8	278.1	0
07-Dec-06	NEWS20061207		1	2.1	87.2	6.8	0
11-Dec-06	NEWS20061211	1		5.9	442.8	81.9	4
12-Dec-06	NEWS20061212		1	4.4	320.2	41.5	0
17-Dec-06	NEWS20061217	1		5.4	442.8	395.6	2
18-Dec-06	NEWS20061218	1		5.7	442.8	439.2	3
19-Dec-06	NEWS20061219	1		6.0	442.8	379.3	4
23-Dec-06	NEWS20061223	1		5.7	442.8	442.8	4
24-Dec-06	NEWS20061224	1		5.4	442.8	42.2	2
28-Dec-06	NEWS20061228		1	2.2	103.6	0.0	0
30-Dec-06	NEWS20061230	1		6.2	442.8	203.1	1
03-Jan-07	NEWS20070103	1		5.6	442.8	14.0	2
06-Jan-07	NEWS20070106		1	5.3	428.7	428.7	1
07-Jan-07	NEWS20070107		1	2.0	110.5	35.6	0
09-Jan-07	NEWS20070109		1	2.0	97.5	0.0	2
11-Jan-07	NEWS20070111		1	1.7	126.2	0.0	0
13-Jan-07	NEWS20070113		1	5.5	396.3	371.8	3
14-Jan-07	NEWS20070114	1		5.5	442.8	442.8	4
15-Jan-07	NEWS20070115		1	4.8	261.0	261.0	3
20-Jan-07	NEWS20070120		1	1.5	78.4	0.0	2
21-Jan-07	NEWS20070121		1	3.7	212.2	111.7	2
24-Jan-07	NEWS20070124		1	2.1	144.4	23.2	0
25-Jan-07	NEWS20070125		1	1.9	135.6	1.3	0
27-Jan-07	NEWS20070127	1		7.6	442.8	411.9	14
30-Jan-07	NEWS20070130		1	5.2	349.4	102.5	9
02-Feb-07	NEWS20070202		1	3.5	156.4	11.6	9
04-Feb-07	NEWS20070204		1	5.4	336.3	281.7	2
08-Feb-07	NEWS20070208		1	5.8	308.2	106.7	12
09-Feb-07	NEWS20070209		1	5.4	370.9	229.4	2
11-Feb-07	NEWS20070211		1	7.0	388.8	107.7	3

Date	Survey Name	Complete Surveys	Partial Surveys	Survey Hobbs Time	Total trackline nmiles flown	Trackline nmiles flown in Beaufort SS < 3	Number of Whales Seen
12-Feb-07	NEWS20070212	1		7.8	442.8	441.9	5
15-Feb-07	NEWS20070215		1	4.5	247.6	4.0	2
17-Feb-07	NEWS20070217		1	5.5	406.1	101.9	0
20-Feb-07	NEWS20070220		1	2.8	196.3	62.5	2
22-Feb-07	NEWS20070222		1	5.7	356.0	144.8	11
24-Feb-07	NEWS20070224		1	3.1	108.7	2.4	4
26-Feb-07	NEWS20070226	1		5.9	442.8	377.7	6
27-Feb-07	NEWS20070227	1		7.4	442.8	342.5	14
28-Feb-07	NEWS20070228	1		6.4	442.8	117.6	17
03-Mar-07	NEWS20070303		1	4.3	191.7	0.0	22
06-Mar-07	NEWS20070306		1	5.7	317.6	6.9	8
07-Mar-07	NEWS20070307	1		6.4	442.8	389.1	21
08-Mar-07	NEWS20070308	1		6.0	442.8	294.5	20
12-Mar-07	NEWS20070312	1		7.0	442.8	437.1	10
13-Mar-07	NEWS20070313	1		6.7	442.8	298.4	13
19-Mar-07	NEWS20070319		1	3.3	250.2	0.0	2
20-Mar-07	NEWS20070320		1	3.9	250.2	250.2	4
21-Mar-07	NEWS20070321		1	3.3	250.2	219.9	2
23-Mar-07	NEWS20070323		1	2.5	187.2	187.2	2
24-Mar-07	NEWS20070324		1	2.5	187.2	187.2	2
25-Mar-07	NEWS20070325		1	2.5	187.2	187.2	0
27-Mar-07	NEWS20070327	1		6.1	442.8	442.8	6
28-Mar-07	NEWS20070328		1	1.7	126.0	126.0	0
Total	55 Surveys	22	33	258.1	17415.6	10243.8	263

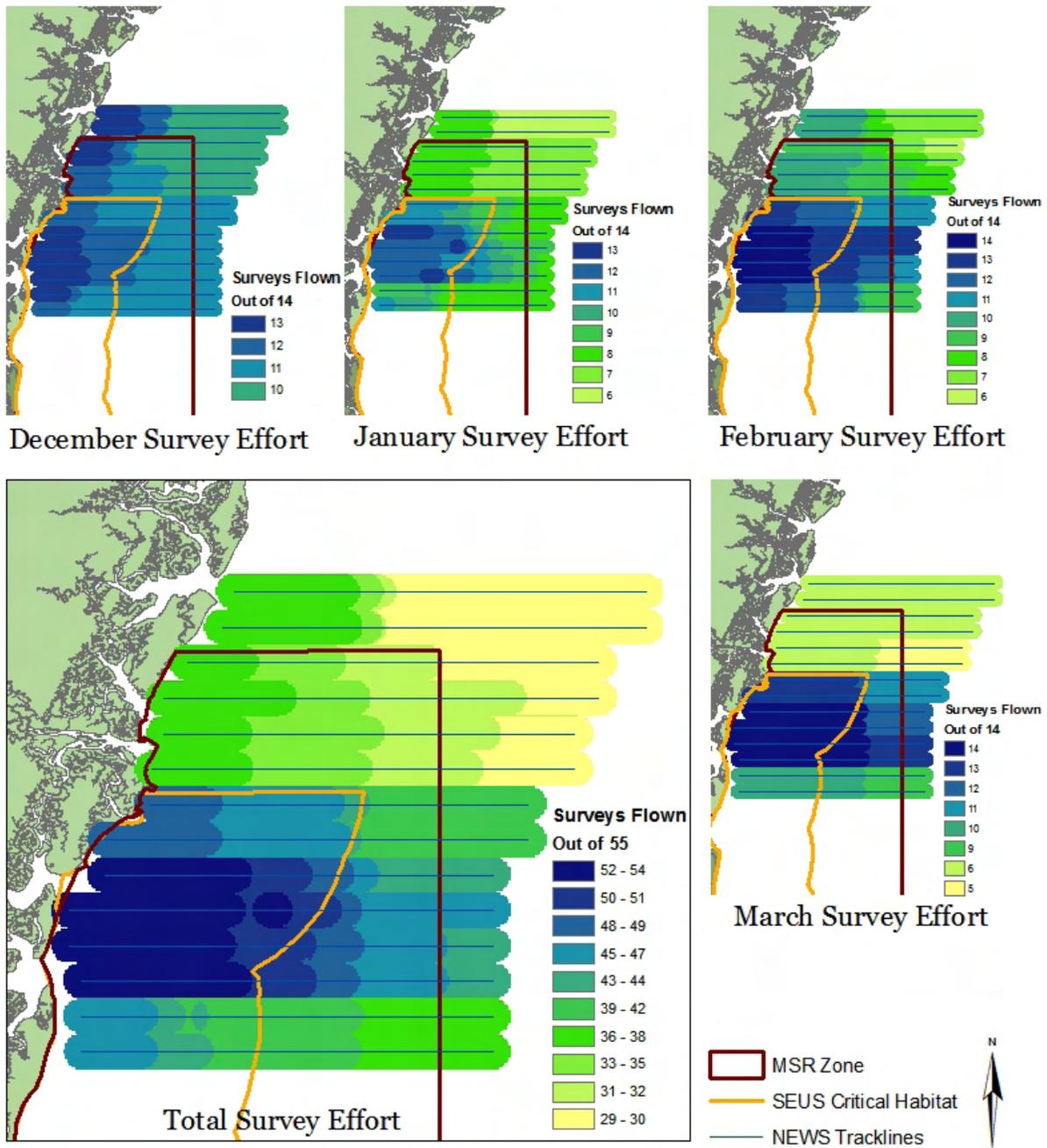
Table 3: Non-weather related reasons for partial or no survey by Wildlife Trust in the NEWS survey area during the 2006-2007 SEUS calving season.

Date	Fly-able Day	Survey Attempted by WT	Pilot Duty and Aircraft Related Reasons for Partial or No Survey by Wildlife Trust
13-Dec-06	N	N	100 hr. Maintenance on NOAA46
14-Dec-06	N	N	100 hr. Maintenance on NOAA46
15-Dec-06	N	N	100 hr. Maintenance on NOAA46
16-Dec-06	Y	N	100 hr. Maintenance on NOAA46
12-Jan-07	Y	N	Need to Conserve and Extend Flight Hours Throughout Season
15-Jan-07	Y	Partial	NEWS Survey Cut Short due to Entangled Whale Sighting
16-Jan-07	Y	N	NEWS Survey Team Acting as Disentanglement Aerial Support
31-Jan-07	Y	N	100 hr. Maintenance on NOAA46
01-Feb-07	Y	N	100 hr. Maintenance on NOAA46
25-Feb-07	Y	N	Required Pilot Downtime due to 6 Day Rule

Date	Fly-able Day	Survey Attempted by WT	Pilot Duty and Aircraft Related Reasons for Partial or No Survey by Wildlife Trust
04-Mar-07	N	N	Required Pilot Downtime due to 6 Day Rule
09-Mar-07	N	N	Survey Plane Switch - NOAA46 Replaced with NOAA48
10-Mar-07	Y	N	Need to Conserve and Extend Flight Hours Throughout Season
14-Mar-07	Y	N	Need to Conserve and Extend Flight Hours Throughout Season
15-Mar-07	Y	N	Need to Conserve and Extend Flight Hours Throughout Season
19-Mar-07	Y	Partial	Only Flew Tracklines 1-8 due to Limited Available Flight Hours
20-Mar-07	Y	Partial	Only Flew Tracklines 1-8 due to Limited Available Flight Hours
21-Mar-07	Y	Partial	Only Flew Tracklines 1-8 due to Limited Available Flight Hours
23-Mar-07	Y	Partial	Only Flew Tracklines 3-8 due to Limited Available Flight Hours
24-Mar-07	Y	Partial	Only Flew Tracklines 3-8 due to Limited Available Flight Hours
25-Mar-07	Y	Partial	Only Flew Tracklines 3-8 due to Limited Available Flight Hours
28-Mar-07	Y	Partial	Only Flew Tracklines 3-6 due to Limited Available Flight Hours
29-Mar-07	Y	N	No Remaining Survey Flight Hours
30-Mar-07	N	N	No Remaining Survey Flight Hours
31-Mar-07	Y	N	No Remaining Survey Flight Hours

Due to the fact that 33 of the NEWS surveys were only partially flown, not all of the NEWS area was surveyed to the same extent. Figure 3 shows the 2006-2007 NEWS survey effort broken down by the number of times portions of the 14 study area tracklines were flown during the 55 NEWS surveys. The sections of trackline flown the most during the season (50 to 54 times and represented in darker shades of blue) can be seen in Figure 3. These sections of trackline cover the immediate area surrounding the Brunswick channel. The Wildlife Trust survey team attempted to cover these tracklines each survey day because of the high vessel traffic associated with the Brunswick channel and higher likelihood of ship strike in this area. Figure 3 also shows that the northern six tracklines were flown less than the southern eight tracklines. This is due to a combination of the northern six tracklines being cut or not flown at all because of high sea state and the need to focus limited available flight hours in March on the southern eight tracklines covering the Brunswick channel (Table 3). It should also be noted that the eastern half of all the survey tracklines were flown consistently less than the western half of the tracklines because of high sea states encountered further offshore.

Beyond the NEWS surveys conducted during the 2006-2007 season, the Wildlife Trust survey team was also involved in two flights that were conducted under special circumstances dealing with an entangled right whale (Table 4). On January 15, 2007, the Wildlife Trust survey team sighted an entangled right whale off of St. Simons Island, GA while flying a NEWS survey. The whale was found to be entangled in line that ran through the whale's mouth, looped back from each side of the mouth to join at the center of the whale's back and then extended into more than a body length of trailing line. After documenting the entanglement and landing to upload the images to Provincetown Center for Coastal Studies (PCCS), the survey team flew a 1.1 hour flight to provide aerial support to the GA DNR first response team. The on-water first response team managed to remove part of the trailing line and attach a telemetry buoy to the entangled whale. On January 16, 2007, the Wildlife Trust team tracked and again located the entangled whale off of St. Simons Island, GA. After sighting seven other whales during the search and then locating the entangled whale, the survey team acted as aerial support for an additional disentanglement attempt by GA DNR and FWRI. The second special circumstance flight took 6.5 hours, for a total of 7.6 hours of flight hobbs time dedicated to the documenting, tracking and attempted disentanglement of the entangled whale (Table 4).



Survey Effort for Northern Early Warning System
Wildlife Trust/GA DNR
December 01, 2006 - March 28, 2007
55 Total Surveys

Prepared by: Kara Johnson
 Georgia DNR/Wildlife Trust
 NAD63
 March 2007

Figure 3: NEWS survey effort during the 2006-2007 SEUS calving season.

Table 4: Wildlife Trust special circumstance flights during the 2006-2007 aerial survey season.

Date	Flight Name	Flight Hobbs Time	Description of Flight	Number of Whales Seen
15-Jan-07	NEWS20070115	1.1 hrs	Entangled Whale (BK01SEUS06) Telemetry Attachment and Disentanglement Aerial Support off GA	1 (Entangled)
16-Jan-07	NEWS20070116	6.5 hrs	Locate Entangled Whale (BK01SEUS06) and Disentanglement Aerial Support off GA	8 (Including 1 Entangled)
	Total	7.6 hrs		

On six days in which the Wildlife Trust survey team could not fly the NEWS survey area due to plane maintenance, special circumstance flights or lack of project flight hours, the NEAq aerial survey team flew part of the NEWS area. The NEAq team covered most of the NEWS survey area while flying the northern portion of a two-plane contingency plan on December 16, 2006, January 31, 2007, February 1, 2007 and March 29 and 31, 2007. On January 15 and 16, 2007, the NEAq team covered small portions of the NEWS survey area while also assisting in the entangled whale aerial support. In total, the NEAq team documented four sighting events consisting of seven right whales (including two mother/calf pairs) in the NEWS survey area over these seven days (Table 5).

Table 5: NEAq right whale sightings in the NEWS survey area during the 2006-2007 season.

Sighting Event	Month	Day	Year	Time (Local)	Latitude	Longitude	Number of Whales Sighted	Time of Report	NRW Number	EGNO
1	12	16	2006	1028	31.31248	-81.05400	1	1034	NRW07013	2642
2	01	15	2007	1645	31.12177	-81.13625	2 (Mom/Calf)	1649	NRW07127	2642 and Calf
3	01	16	2007	1602	31.26066	-81.04238	2	1636	NRW07138	
4	03	29	2007	1044	31.26163	-81.06155	2 (Mom/Calf)	1058	NRW07524	3360 (BK23) and Calf

Right Whale Sightings and Identifications

The Wildlife Trust survey team documented a total of 271 right whales during 123 sighting events while flying within the NEWS survey area (Appendix 2). Sixty-three mother/calf pairs, 25 single animals, 15 pairs of two right whales, 12 groups of three right whales, five groups of four right whales and six groups of five or six right whales were observed during these sightings (Figure 4). These totals do not include any sightings by the NEAq survey team in the NEWS area (Table 5).

Six of the 271 observed whales were not photographically documented due to elusive behavior by the animals. Preliminary photo analysis of all other sightings by the Wildlife Trust team and initial verification by NEAq has resulted in the identification of 14 individual mother/calf pairs seen by the Wildlife Trust survey team. An additional 59 individual adult/juvenile whales were observed in the NEWS survey area. Any preliminary identifications from the North Atlantic Right Whale Catalog of these 87 total individual whales have been included in the “EGNO” column of Appendix 2. The numbers and codes listed in the “EGNO” column of Appendix 2 also include intermatch codes (i.e. SE07CT06 and BK21) that were provided by NEAq or FWRI to assist in the preliminary matching of unknown whales until they are assigned EGNOs. Forty-five of the 87 individual whales have been initially identified and assigned their EGNO number. Twenty-eight individual whales do not have a preliminary EGNO identification at this time and have been assigned intermatch codes. The remaining 14 individual whales are calves born in the 2006-2007 season. Basic demographic information for the 45 initially identified whales is provided in Table 6. However, it should be reiterated that all right whale identifications listed within this report should be considered unverified until NEAq has analyzed all photographs from the 2006-2007 southeast calving season. All of the images and data for the NEWS surveys have been

forwarded to NEAq for this final confirmation process. Thus, all identification results within this report should be viewed as preliminary and subject to change until the confirmation process is completed.

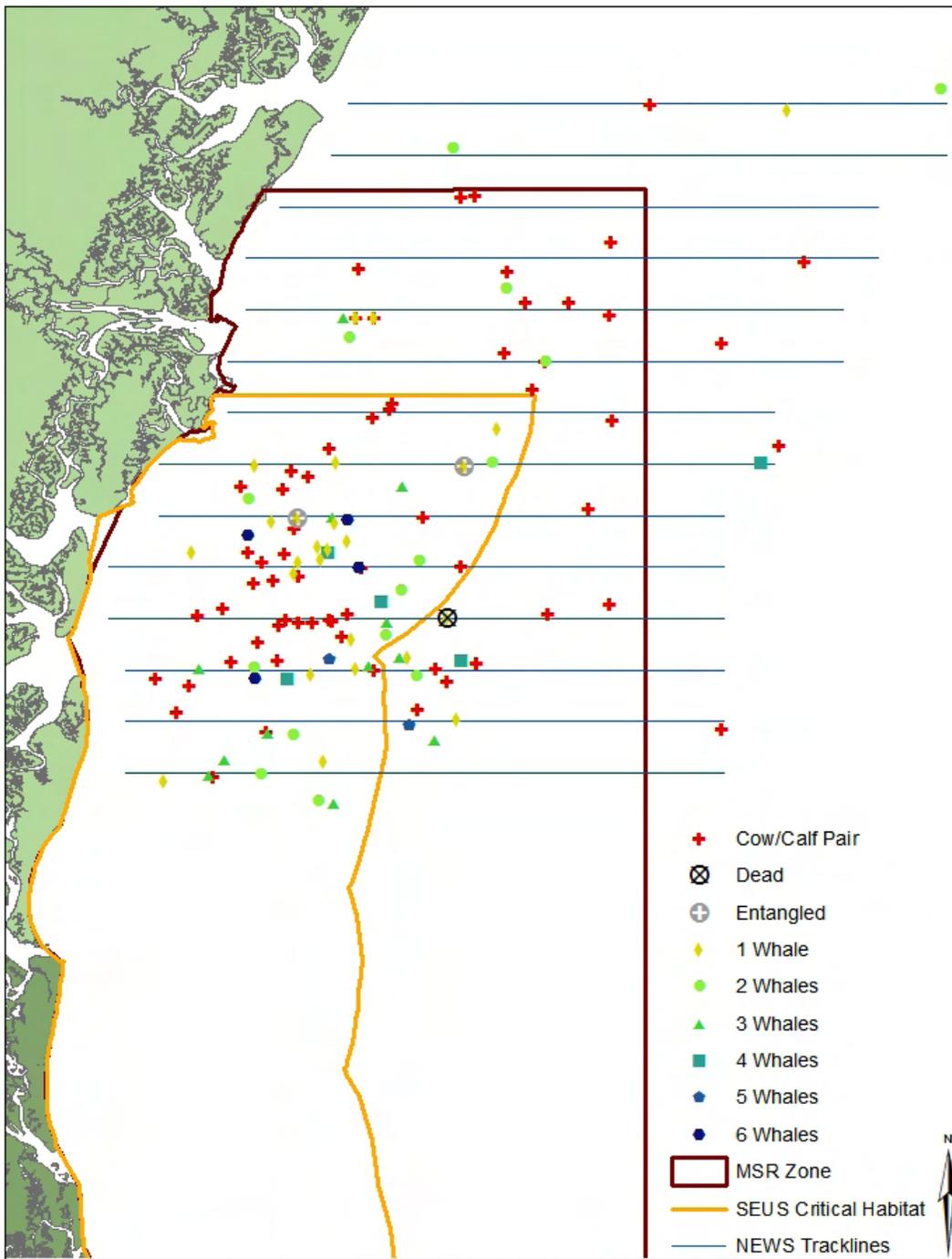
The overall number of right whales documented in the 2006-2007 NEWS season indicates a significant increase in the number of whales seen in the NEWS survey area when compared to the previous survey season. During the 2005-2006 season, 277.4 hobbs hours were flown in the NEWS survey area by the Wildlife Trust team with 178 right whales sighted, including 31 mother/calf pairs. In the 2006-2007 season, 265.7 hobbs hours (including two special circumstance flights) were flown in the NEWS survey area with 271 right whales sighted, including 63 mother/calf pairs. Even though fewer hours were flown in the 2006-2007 season than the 2005-2006 season, 93 more right whales were sighted. A significant portion of the 93 additionally sighted whales is accounted for by the 32 more occasions in which mother/calf pairs were seen in 2006-2007 than in 2005-2006. However, it should be noted that the actual number of individual whales seen during each of the two seasons were very similar. In the 2005-2006 season, 14 individual mother/calf pairs and 64 individual adult/juvenile right whales were documented by the Wildlife Trust team. As stated previously, 14 individual mother/calf pairs and 59 individual adult/juvenile right whales were seen in the 2006-2007 NEWS season. These results indicate that even though similar numbers of individual whales were seen during both seasons, individual whales (especially mother/calf pairs) were resighted a greater number of times and demonstrated a greater residency period within the NEWS survey area during the 2006-2007 season than the 2005-2006 season.

From December 2006 to March 2007, a total of 18 mother/calf pairs were identified in the Southeast US. Of these 18 mothers, fifteen were observed within the NEWS survey area, but only 14 of them were seen with their calves (Table 6). EGNO 2601 was seen in the NEWS area before giving birth to her calf, but not after giving birth. This female was the first whale observed by the Wildlife Trust team on December 11, 2006. During that sighting, the female was alone and was not sighted again within the NEWS survey area during the 2006-2007 season.

The average calving interval for the 14 mothers sighted in the NEWS area in the 2006-2007 season is 3.13 years. Six of the 14 NEWS mothers last gave birth in 2004 and six of the mothers had their first calving event in the 2006-2007 season (Table 6). The average calving interval for the 18 total 2006-2007 SEUS mothers is 3.64 years (Monica Zani, NEAq, personal communication). This calving interval is similar to the 3.65 average calving interval for the 2004-2005 season and slightly higher than the 2005-2006 season's average calving interval of 3.07 years. The typical calving interval for North Atlantic right whales had been concluded to range from 3 to 5 years, but the calving intervals had been increasing in the 1990's (Kraus and Hatch, 2001). It is important to note that this is the fourth SEUS calving season in a row in which a large proportion of the documented mothers exhibited a recent calving interval of three or less years.

Since the end of March 2007, two females not sighted earlier in the SEUS (EGNO 1814 and 3280) were sighted with young calves. EGNO 1814 was observed with a calf in Cape Cod Bay at the end of April 2007, while EGNO 3280 was sighted with a new calf off the coast of North Carolina on April 21, 2007. These additions bring the total number of mother/calf pairs for the 2006-2007 season to 20 as of the end of May 2007 (Monica Zani, NEAq, personal communication).

Preliminary comparisons of whales sighted in the different SEUS survey areas indicate that 16 whales may have only been sighted in the NEWS survey area during the 2006-2007 season. These possibly unique whales are EGNO 1327, EGNO 1712, EGNO 3139, EGNO 3317, EGNO 3508, 2006 Calf of 1946, BK01SEUS06, SE07BK17, SE07BK18, SE07BK19, SE07CT21, SE07CT24, SE07CT25, SE07CT26, SE07CT27 and SE07CT32 (Appendix 2 and Table 6). Due to the fact that image comparisons between the SEUS survey areas have not been completed at this time, it is quite probable that the number of whales unique to the NEWS area will decrease as further photo analysis is conducted.



NEWS Right Whale Sightings
December 1, 2006 - March 28, 2007
123 Sightings, 271 Whales

Prepared by: Kara Johnson
 Georgia DNR/Wildlife Trust
 NAD63
 March 2007

Figure 4: NEWS right whale sightings documented during the 2006-2007 SEUS calving season.

Table 6: Demographic information for preliminarily identified right whales sighted in the NEWS survey area during the 2006-2007 season. (Whales listed in red are 2006-2007 mothers. Whales with an asterisk “*” indicate possible unique animals to the NEWS survey area. Whale histories provided by NEAq)

EGNO	Sex	Age	Mother in 2006-2007 season	Last Calving	Number of Calves (including 2006-2007 season)	Comments
1307	M	Unknown	No	N/A	N/A	Seen only once in NEWS survey area
1317	M	24	No	N/A	N/A	Seen only once in NEWS survey area
1327*	M	Unknown	No	N/A	N/A	Seen only once in NEWS survey area
1608	F	21	No	2003	N/A	Seen only once in NEWS survey area
1611	F	21	No	2006	N/A	Seen only once in NEWS survey area, sighted with yearling (2006 Calf of 1611)
1620	F	Unknown	Yes	2004	4	Mother and calf seen only once in NEWS area
1701	F	20	Yes	2004	4	Mother and calf seen twice in NEWS area
1705	F	20	Yes	2004	3	Seen in NEWS area before and after calving, sighted once w/o calf and six times with calf
1712*	M	20	No	N/A	N/A	Seen only once in NEWS survey area
1719	F	Unknown	No	N/A	N/A	Seen twice in NEWS survey area
1810	F	Unknown	Yes	2002	4	Mother and calf seen three times in NEWS area
1817	F	Unknown	No	2006	N/A	Seen only once in NEWS survey area, sighted with yearling (2006 Calf of 1817)
1911	F	18	Yes	2004	3	Seen in NEWS area before and after calving, sighted twice w/o calf and four times with calf
1971	M	18	No	N/A	N/A	Seen twice in NEWS survey area
2145	F	16	Yes	2004	3	Mother and calf seen four times in NEWS area
2427	M	13	No	N/A	N/A	Seen only once in NEWS survey area
2430	F	13	Yes	N/A	1	Mother and calf seen four times in NEWS area; First time mother in 2006-2007
2601	F	11	Yes	N/A	1	Seen once in NEWS survey area only before calving; First time mother in 2006-2007
2605	F	11	Yes	N/A	1	Seen in NEWS area before and after calving, sighted five times w/o calf and seven times with calf; First time mother in 2006-2007
2611	F	11	Yes	N/A	1	Seen in NEWS area before and after calving, sighted three times w/o calf and eight times with calf; First time mother in 2006-2007
2614	F	11	Yes	2004	2	Mother and calf seen three times in NEWS area
2642	F	11	Yes	N/A	1	Mother and calf seen three times in NEWS area; First time mother in 2006-2007
2645	F	11	Yes	2005	2	Mother and calf seen seven times in NEWS area; 2005 calf presumed lost that same year
2746	F	10	Yes	N/A	1	Mother and calf seen nine times in NEWS area; First time mother in 2006-2007
3101	F	6	No	N/A	N/A	Seen twice in NEWS survey area
3139*	U	6	No	N/A	N/A	Seen only once in NEWS survey area
3193	U	6	No	N/A	N/A	Seen only once in NEWS survey area
3260	F	Unknown	No	N/A	N/A	Seen only once in NEWS survey area
3314	M	4	No	N/A	N/A	Seen only once in NEWS survey area; “Yellowfin”, previously entangled
3317*	U	4	No	N/A	N/A	Seen only once in NEWS survey area
3333	M	4	No	N/A	N/A	Seen only once in NEWS survey area

EGNO	Sex	Age	Mother in 2006-2007 season	Last Calving	Number of Calves (including 2006-2007 season)	Comments
3346	M	4	No	N/A	N/A	Seen three times in NEWS survey area; "Kingfisher", entangled since 2004
3360 (BK23)	F	Unknown	Yes	N/A	1	Seen in NEWS area before and after calving, sighted once w/o calf and twice with calf; First time mother in 2006-2007
3442	U	3	No	N/A	N/A	Seen three times in NEWS survey area
3508*	M	2	No	N/A	N/A	Seen three times in NEWS survey area, sighted floating dead on 12/30/06
2004 Calf of 1321	U	3	No	N/A	N/A	Seen only once in NEWS survey area
2004 Calf of 1705	U	3	No	N/A	N/A	Seen only once in NEWS survey area
2004 Calf of 2330	U	3	No	N/A	N/A	Seen only once in NEWS survey area
2004 Calf of 2460	U	3	No	N/A	N/A	Seen only once in NEWS survey area
2004 Calf of 2614	U	3	No	N/A	N/A	Seen only once in NEWS survey area
2005 Calf of 1140	U	2	No	N/A	N/A	Seen three times in NEWS survey area
2005 Calf of 1241	U	2	No	N/A	N/A	Seen only once in NEWS survey area
2006 Calf of 1611	U	1	No	N/A	N/A	Seen twice in NEWS survey area, yearling sighted first w/ mother (1611) and second time w/o mother
2006 Calf of 1817	U	1	No	N/A	N/A	Seen only once in NEWS survey area, yearling sighted with mother (1817)
2006 Calf of 1946*	U	1	No	N/A	N/A	Seen four times in NEWS survey area, yearling always sighted alone

Entangled Right Whales

Two entangled right whales (BK01SEUS06 and EGNO 3346) were observed during the 2006-2007 NEWS surveys. At the time of their sightings, digital images of the entangled right whales were sent to NEAq and PCCS for assessment of each whale's condition. Also, information pertaining to each sighting was passed on to the proper authorities within GA DNR and NOAA Fisheries.

The first entangled whale, BK01SEUS06, was the right whale sighted by the Wildlife Trust survey team off of St. Simons Island, GA on January 15, 2007 (as described earlier in this report). The whale was found to be entangled in line that ran through the whale's mouth, looped back from each side of the mouth to join at the center of the whale's back and then extended into more than a body length of trailing line. On January 15, the Wildlife Trust team served as aerial support as the GA DNR first response team removed part of the trailing line and attached a telemetry buoy to the entangled whale. After the telemetry buoy was deployed, the WT team used telemetry tracking equipment to test whether the buoy was transmitting properly. A strong and consistent signal was heard from the buoy as BK01SEUS06 traveled quickly at the surface. The following day, January 16, the Wildlife Trust team tracked and again located the entangled whale off of St. Simons Island, GA. The survey team once more acted as aerial support for documentation of the whale and an additional disentanglement attempt by GA DNR and FWRI. The initial locations of BK01SEUS06 on January 15 and January 16, 2007 are represented in Figure 4 by two "Entangled" icons and are also listed in Appendix 2. Initial photo analysis indicates that the NEWS survey area sightings of BK01SEUS06 are the only sightings of this whale in the SEUS during the 2006-2007 season.

Using GPS fixes from the telemetry buoy, BK01SEUS06 was tracked north to North Carolina in the week following January 16, 2007. On January 24, 2007, a final disentanglement attempt was made by PCCS, Virginia Aquarium and NOAA Fisheries after locating the whale in Onslow Bay, NC. During this attempt, more of the trailing line was removed and the telemetry buoy was detached from the whale. Analysis of the entangled whale images from January 2007 found that BK01SEUS06 was in fact previously sighted entangled in the Bay of Fundy on September 27, 2006 by NEAq (Phillip Hamilton, NEAq, personal communication). Following the whale's sightings in the SEUS, the PCCS aerial survey team sighted BK01SEUS06 off Cape Cod, MA on April 26, 2007. The images from this sighting indicate that the whale may now be gear free, including any line previously seen running through the whale's mouth (Bob Bowman, PCCS, personal communication).

The second entangled whale observed by the Wildlife Trust survey team was identified as "Kingfisher" (EGNO 3346). This male juvenile right whale was first seen entangled off of Florida on March 17, 2004. Kingfisher was the subject of multiple disentanglement attempts in 2004 and was sighted four times in the NEWS survey area during the 2005-2006 season. He was again observed in the NEWS survey area in the 2006-2007 season on January 16 and 27, 2007, and February 2, 2007 (Appendix 2). Kingfisher has been listed as a "monitor" animal by PCCS due to the fact that the whale has shed most of its' original March 2004 entanglement but still has line wrapped tightly around its' right pectoral fin. The remaining entanglement does not appear to inhibit the activity of the whale. In its' 2005-2006 and 2006-2007 NEWS sightings, the whale was actively involved in surface active groups (SAG) with multiple other whales. Due to Kingfisher's "monitor" status, documentation of the whale's remaining entanglement was taken to assess the status of the right pectoral fin wrap and evaluate the health of the whale. PCCS determined that the remaining entanglement did not present an imminent threat to the whale and no disentanglement attempt was made during the 2006-2007 SEUS season.

Dead Right Whales

A single dead right whale was sighted within the NEWS survey area during the 2006-2007 season. On December 30, 2006, the Wildlife Trust survey team sighted a right whale floating ventral side up about 15 miles to the east of the south end of Jekyll Island, GA (Figure 4). The survey team documented the sighting and contacted GA DNR and NOAA Fisheries with the sighting information. From the survey plane, the dead whale appeared to be a juvenile and there did not appear to be any initial indications of the cause of death. Images of the whale's genital slit showed the animal to be a male. A great white shark was observed feeding on the carcass and extensive shark bites were observed on the whale's belly and tailstock. After the whale was secured for towing by GA DNR and NOAA Fisheries, the animal was taken to Fernandina Beach, FL during the night of December 30 and a necropsy was performed on the animal on December 31, 2007. Michael Moore lead the necropsy and the Wildlife Trust survey team assisted in the necropsy along with GA DNR, FWRI, NEAq, NOAA Fisheries, USGS and various other organizations. During the necropsy, the whale was indeed found to be a male and measured 12.6 meters in length. When the whale was beached, 20 z-shaped prop cuts were discovered running along the whale's right side from the tip of the rostrum to mid-body. "Catastrophic interaction with a moving vessel with a right handed propeller" was determined to be the cause of death from the field examination (Moore *et al.*, 2007). Images taken at the necropsy identified the whale as EGNO 3508, the two year old calf of EGNO 1408. Preliminary photo analysis found that EGNO 3508 was sighted in the NEWS survey area about eleven days prior to the whale's death. On December 18, 2006, EGNO 3508 was sighted in a SAG with two other whales, CT01SEUS06 and the 2004 Calf of 1705. On December 19, 2006, EGNO 3508 was sighted again surface traveling with CT01SEUS06 (Appendix 2). The sightings of EGNO 3508 in the NEWS survey area appear to be the only sightings of this animal in the SEUS during the 2006-2007 season. However, it should be noted that the results of the necropsy indicate that the whale most likely died five days prior to examination and drift analyses give the best estimate of the whale's location at that time as south of the NEWS survey area (Moore *et al.*, 2007). Thus, it is possible that EGNO 3508 had traveled outside the NEWS study area when the fatal vessel collision occurred.

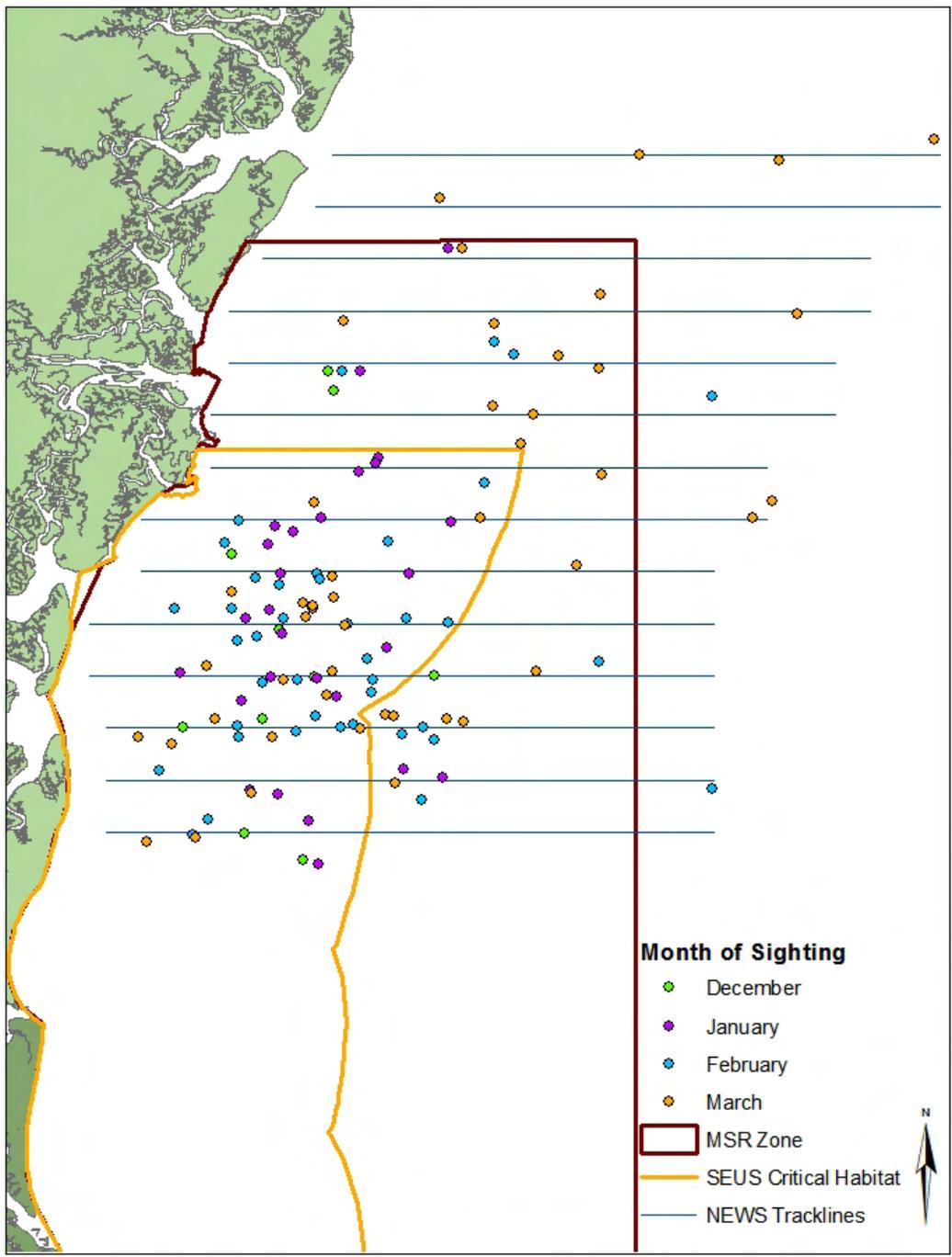
Temporal and Spatial Movements of Right Whales

Figure 5 illustrates the NEWS right whale sightings classified by survey month. It can be seen in the figure that a majority of the right whale sightings during every month of the 2006-2007 season occurred in the southwestern quarter of the NEWS survey area (western half of the bottom eight tracklines). Most of the southwestern quarter of the NEWS survey zone falls within the SEUS designated right whale critical habitat (Figure 5) and is also notable due to the fact that the Brunswick shipping channel cuts diagonally to the southeast through the middle of this area. Thus, a majority of the right whales seen during the 2006-2007 NEWS surveys were found in close proximity to the area of greatest concern for ship traffic within the NEWS survey zone. Figure 6 illustrates the March right whale sightings in close proximity to the Brunswick channel and shows that many of these sightings involved groups of three or more whales. The end of February and beginning of March were the peak period for right whale sightings during the 2006-2007 NEWS season. One hundred and forty-six (56%) of the 263 total right whales sighted during the NEWS surveys were observed in the 20 day period between February 22 and March 13, 2007. These multiple associations of 3 or more right whales in the month of March 2007 were also experienced in the Central and Southern Early Warning System surveys flown by New England Aquarium and Florida Fish and Wildlife Research Institute (Figure 6).

The southwestern quarter of the NEWS survey zone was flown the most during the 2006-2007 season (Figure 3), so the large number of sightings in this area could be related to the season's survey effort. However, during the month of March, a significant portion of the NEWS right whale sightings did occur outside of this quarter and in the northern and eastern sections of the survey area (Figure 5). Fifty-two percent of the March NEWS sightings fell outside of the critical habitat and most of these sightings were of mother/calf pairs. Overall, 33% of all the right whale sightings documented during the 2006-2007 NEWS season were located outside of the currently designated right whale critical habitat and 63% of these sightings contained mother/calf pairs.

Many of the whales observed in the NEWS area were resighted on multiple occasions by the Wildlife Trust team, especially the 2006-2007 mothers. The adult/juvenile whales, SE07CT17 and SE07BK11, were sighted six and seven times respectively within the NEWS area. EGNO 1705 was sighted once without her calf and then six times with her calf. EGNO 2645 and her calf were also observed on seven occasions, while EGNO 2746 and her calf were sighted together nine times. EGNO 2611 was observed 11 times in the NEWS area, three times before giving birth to her calf and then eight times with her calf. The greatest number of resights occurred with EGNO 2605 and her calf. EGNO 2605 was sighted five times from December 11, 2006 to February 9, 2007 without a calf. Then on February 11, 2007, the Wildlife Trust survey team sighted EGNO 2605 with a very young calf that would have been born sometime in the two days since her February 9 sighting. EGNO 2605 and her calf were then observed another six times in the NEWS area, with the last sighting occurring on March 20, 2007. In total, EGNO 2605 was sighted twelve times in the NEWS area and during every month of the 2006-2007 season. Overall, the 2006-2007 mothers were resighted an average of five times within the NEWS survey area.

In comparison, the 2006-2007 resight levels for males and non-reproducing females were much lower than the observed resight patterns for mothers. Of the ten known males documented during the NEWS surveys (Table 6), seven were only documented within the NEWS survey area on one occasion, one was sighted twice and two males were sighted on three occasions. Additionally, six known females that were not mothers in the 2006-2007 season were observed during the NEWS surveys (Table 6). Of these females, four were only observed once and two were observed twice in the NEWS survey area. These low levels of resights for males and non-reproducing females indicate that these animals are demonstrating a low residency period within the NEWS survey area as compared to mothers. As more photo analysis comparing right whale sightings in the SEUS across seasons is completed and the sex of more whales is determined through genetic sampling, the significance of these variations in residency patterns for different age and sex classes can be studied further to see what long term patterns exist.



Right Whale Distribution by Month December 2006 - March 2007

Prepared by: Kara Johnson
 Georgia DNR Wildlife Trust
 NA263
 March 2007

Figure 5: Northern Early Warning System 2006-2007 right whale sightings classified by month.

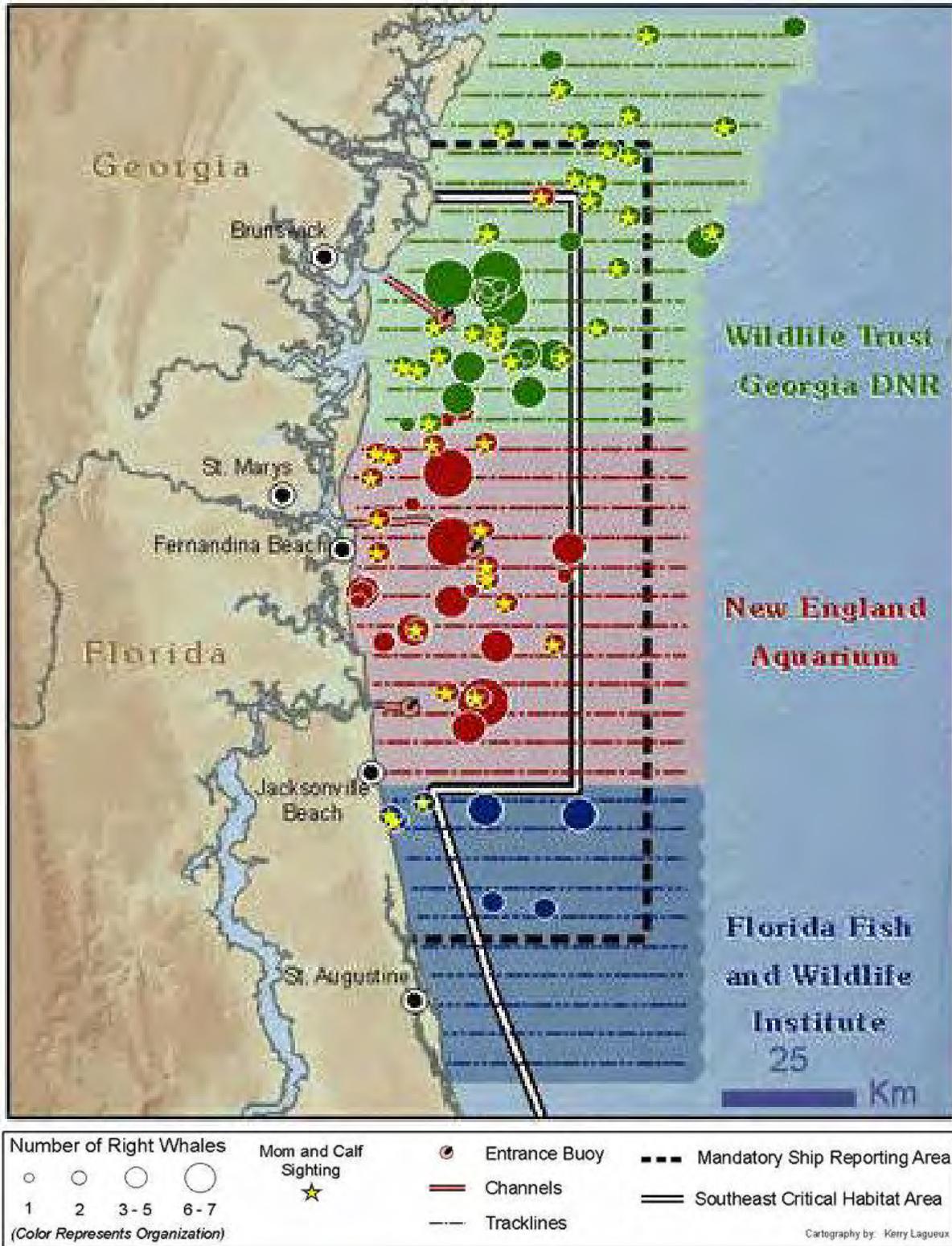


Figure 6: All Early Warning System surveys March 2007 right whale sightings.

Sighting Distances and Sea States for Right Whales

Sighting distances for right whale sightings were calculated whenever possible and the average sighting distance was 0.61 nm (SD = 0.62). The sighting distances ranged from 0.0 nm to 4.43 nm, with 99% of the sightings occurring from 0.0 nm to 2.7 nm (Figure 7). Seventy percent of the right whale sightings with a calculated sighting distance occurred in a Beaufort sea state of 3 or below, while 30% of the sightings occurred in a Beaufort sea state of 4 or above. When right whale sightings without a calculated sighting distance were included in the analysis of sighting sea state, 66% of the sightings occurred in a Beaufort sea state of 3 or below and 34% of the sightings occurred in a Beaufort sea state of 4 or above.

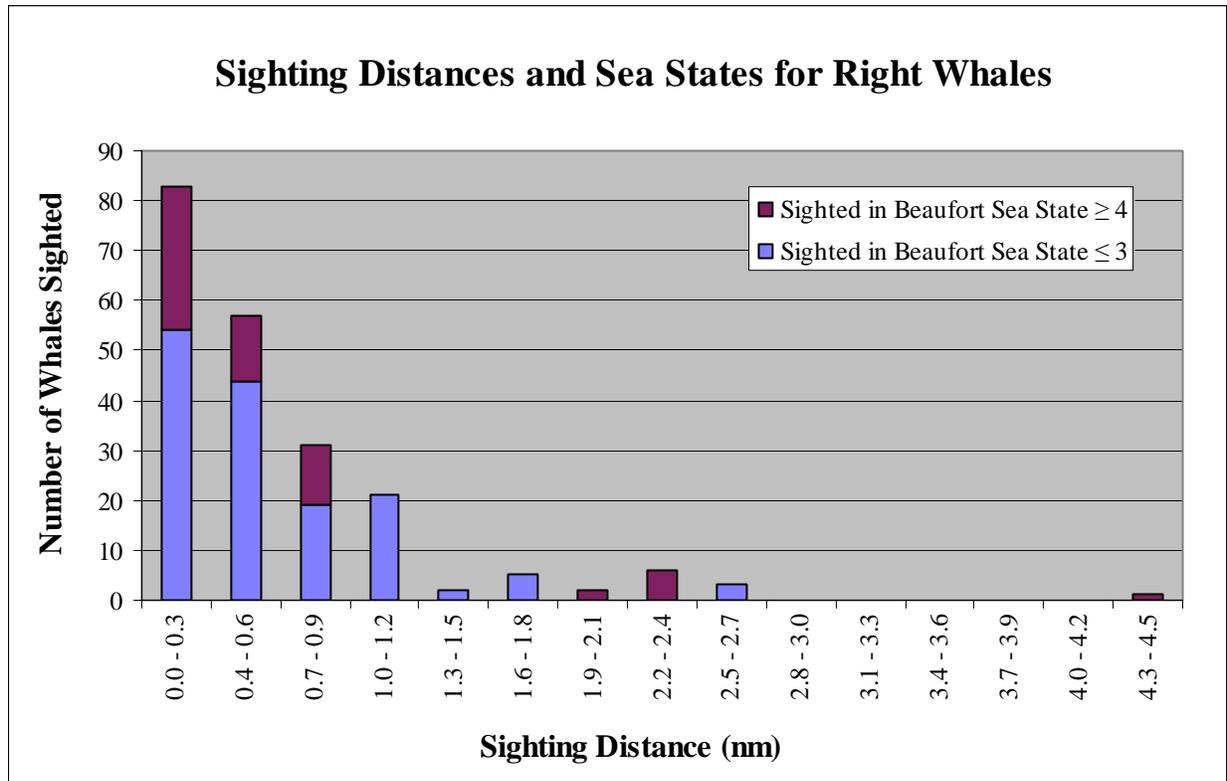


Figure 7: Right whale sighting distances and sea states for the 2006-2007 NEWS survey season.

Sighting Distances for Large Vessels

During the 2006-2007 NEWS surveys, sighting angles were recorded for all large vessels (100 feet or greater in length) whenever an exact overhead GPS location for the vessel was not obtained. These sighting angles were used to calculate distance from the trackline for any vessel without an exact GPS location. Average calculated distance from the trackline for the large vessels was 4,022.76 meters (SD = 4,143.82).

Marine Animal Sightings

Beyond right whale and vessel sightings, all sightings of other marine mammals, sea turtles, sharks, and large rays were recorded while conducting the NEWS surveys. Date, time, latitude/longitude position, species and number, aircraft heading and altitude, and environmental conditions such as overall weather trend, Beaufort sea state, glare, and visibility were also entered into the data logger program with all sightings. Table 7 summarizes the marine animal sightings for all the NEWS surveys flown during the 2006-2007 season.

Table 7: Summary of other marine animal sightings during the 2006-2007 NEWS right whale surveys.
 (See end of table for legend of marine animal abbreviations.)

Survey Date	ASDO	BASH	BODO	HHSH	HUWH	LETU	LOTU	MANA	MARA	RITU	UNDO	UNLW	UNSH	UNST	UNTU
02-Dec-06	0	0	16	0	0	2	11	0	0	0	0	0	0	0	0
05-Dec-06	0	0	14	0	0	1	28	0	0	0	23	0	0	1	17
06-Dec-06	0	0	27	0	0	2	42	0	0	0	16	0	0	0	3
07-Dec-06	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
11-Dec-06	0	0	29	0	0	1	26	0	0	0	10	0	0	0	7
12-Dec-06	0	0	2	0	0	0	11	0	0	1	23	0	0	0	1
17-Dec-06	0	0	89	0	0	10	67	0	0	0	43	0	0	0	14
18-Dec-06	0	0	159	0	0	5	28	0	1	0	72	0	0	0	8
19-Dec-06	0	0	271	0	0	4	24	0	0	0	10	0	1	30	3
23-Dec-06	0	0	39	0	0	1	22	0	0	0	28	0	1	2	5
24-Dec-06	0	0	17	0	0	1	5	0	0	0	10	0	0	0	2
28-Dec-06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-Dec-06	0	0	25	0	0	0	8	0	0	0	3	0	0	0	2
03-Jan-07	0	0	4	0	0	0	3	0	0	0	0	0	0	0	1
06-Jan-07	0	1	185	0	0	4	53	0	0	1	11	0	1	0	9
07-Jan-07	0	0	44	0	0	0	9	0	0	0	12	0	0	0	0
09-Jan-07	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
11-Jan-07	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0
13-Jan-07	0	1	76	0	0	3	18	0	0	0	22	0	0	0	6
14-Jan-07	0	0	234	0	0	7	67	0	0	2	34	0	0	0	3
15-Jan-07	0	0	102	1	0	4	36	0	0	0	53	0	1	0	4
20-Jan-07	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
21-Jan-07	0	0	42	0	0	1	0	0	0	0	0	0	0	0	0
24-Jan-07	0	0	10	0	0	0	0	0	0	0	1	0	0	0	0
25-Jan-07	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
27-Jan-07	0	1	177	0	0	2	48	0	0	0	35	0	0	0	2
30-Jan-07	0	0	97	0	0	0	3	0	0	0	50	0	0	0	0
02-Feb-07	0	0	9	0	0	0	2	0	0	0	0	0	0	0	0
04-Feb-07	0	0	58	0	0	2	22	0	0	0	25	0	0	0	2
08-Feb-07	0	1	87	0	0	0	3	0	0	0	7	0	0	0	0
09-Feb-07	0	0	87	0	1	2	13	0	0	0	8	0	0	0	1
11-Feb-07	0	2	89	0	0	2	10	0	0	0	15	0	1	0	3
12-Feb-07	0	6	140	0	1	5	43	0	0	0	22	0	0	0	5
15-Feb-07	0	0	15	0	0	0	0	0	0	0	0	0	1	0	0
17-Feb-07	0	3	58	0	0	6	8	0	0	0	10	0	0	0	0
20-Feb-07	0	0	22	0	0	0	4	0	0	0	1	0	0	0	0
22-Feb-07	0	0	8	0	0	0	1	0	0	0	30	0	0	0	0
24-Feb-07	0	0	2	0	0	0	3	0	0	0	16	0	0	0	0
26-Feb-07	0	0	60	0	0	3	40	0	0	0	70	0	0	0	1
27-Feb-07	0	0	103	0	2	2	49	0	0	1	55	0	1	25	2

Survey Date	ASDO	BASH	BODO	HSHH	HUWH	LETU	LOTU	MANA	MARA	RITU	UNDO	UNLW	UNSH	UNST	UNTU
28-Feb-07	0	0	71	0	0	1	25	0	0	0	11	0	0	0	2
03-Mar-07	0	0	1	0	0	5	8	0	0	0	14	0	0	0	1
06-Mar-07	0	0	6	0	0	0	2	0	0	0	0	0	0	0	0
07-Mar-07	0	0	119	0	0	3	74	0	0	0	99	0	0	3	5
08-Mar-07	0	0	120	0	0	5	61	0	0	0	46	0	0	0	2
12-Mar-07	25	0	173	0	1	8	176	0	0	0	119	0	2	0	4
13-Mar-07	0	0	69	0	3	0	66	0	0	0	102	0	0	9	3
19-Mar-07	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
20-Mar-07	0	0	154	0	0	8	77	0	0	5	61	0	1	0	7
21-Mar-07	0	0	27	0	0	2	32	0	0	0	13	0	0	0	3
23-Mar-07	0	0	49	0	0	1	27	0	0	0	14	0	0	0	0
24-Mar-07	0	0	22	0	0	0	43	0	0	0	26	0	0	5	8
25-Mar-07	0	0	47	0	0	2	47	0	0	0	34	0	0	0	0
27-Mar-07	0	0	66	0	1	4	185	0	0	2	42	0	1	86	8
28-Mar-07	0	0	31	0	0	0	38	0	0	1	44	0	0	8	7
Totals	25	15	3362	1	9	110	1571	0	1	13	1340	0	11	169	152

Table 7 Legend: ASDO=Atlantic spotted dolphin; BASH = basking shark; BODO=bottlenose dolphin; HSHH=hammerhead shark; HUWH=humpback whale; LETU=leatherback turtle; LOTU=loggerhead turtle; MANA=manatee; MARA=manta ray; RITU=ridley turtle; UNDO=unidentified dolphin; UNLW=unidentified large whale; UNSH = unidentified shark; UNST=unidentified Stenella, UNTU=unidentified turtle

Humpback Whale Sightings

The Wildlife Trust survey team observed a total of nine humpback whales during eight sighting events while flying the 2006-2007 NEWS surveys (Tables 7 and 8). Seven adults/juveniles and one mother/calf pair were documented during these sightings. The calf sighted on March 13, 2007 was estimated to be half the body length of the mother, so it is possible that this whale was a yearling and not a 2007 calf. Not all of the sightings were photographed, but a comparison of the whales' body markings in the images obtained on February 9 and 27, 2007 and March 13, 2007 found that the humpback whale from sighting event 3 on February 27 may be the same whale as the humpback from sighting event 6 on March 13.

Table 8: Humpback whale sightings during the 2006-2007 NEWS aerial survey season.

Sighting Event	Month	Day	Year	Time (Local)	Survey Name	Latitude	Longitude	Number of Whales Sighted	Heading	Comments
1	02	09	2007	1438	NEWS20070209	31.52530	-80.84773	1	SW	Observed swimming through schools of fish, possibly feeding
2	02	12	2007	1552	NEWS20070212	31.43011	-80.84554	1	S	Swimming steadily to the south
3	02	27	2007	1144	NEWS20070227	31.08260	-80.85000	1	S	Swimming steadily to the south
4	02	27	2007	1353	NEWS20070227	31.23425	-81.18127	1	ESE	Swimming steadily above and below the surface
5	03	12	2007	1116	NEWS20070312	30.99218	-81.19668	1	N	Swimming subsurface
6	03	13	2007	1128	NEWS20070313	31.15372	-81.12758	1	N/A	Breaching and head-slapping
7	03	13	2007	1304	NEWS20070313	31.34217	-81.10005	2 (Mother and calf)	S	Mother peduncle slapped and calf breached twice; calf was possibly a yearling
8	03	27	2007	1016	NEWS20070327	31.44525	-80.72009	1	N/A	Juvenile found floating dead

The humpback whale sighted on March 27, 2007 by the Wildlife Trust team was found floating dead about 27 miles east of Sapelo Island, GA (Table 8). The whale appeared to be a juvenile due to its' small size and was floating left side up with the right side of its' body submerged. The whale's jaw was hanging open with portions of the lower jaw missing. The tips of the whale's pectoral fins were gone, and skin and superficial blubber were also missing from the whale's tail stock, flukes and ventral side. There did not appear to be any initial indications of the cause of death. Four large sharks were sighted swimming below the floating whale, but were not observed directly feeding on the carcass. However, photo analysis later found evidence of multiple shark bites on the lower jaw, tail stock and ventral side of the whale. The NEWS survey team documented the whale sighting and contacted GA DNR with the sighting information. Due to the whale's distance from shore, no on-water response was launched.

The nine humpback whales observed during the 2006-2007 season represent the first humpback whales sighted during NEWS surveys since the 2002-2003 season. Two humpback whales were documented during the 2002-2003 NEWS surveys and no humpback whales were sighted during the intervening three aerial survey seasons. The cause of this increase in the number of humpback whale sightings close to the Georgia coastline is not known at this time. The sightings could be a result of some change in the humpback whales' environmental conditions, population size or simply an anomaly in their movement patterns. In order to help determine the cause of the whales' migration shift, it will be important to note whether the humpback whale sightings in the NEWS survey area continue to increase in the coming years or return to their previously low levels.

Whale/Vessel Interactions

The Wildlife Trust survey team observed two whale/vessel interactions ("close calls") during the 2006-2007 season. Immediately following the observed events, the required whale/vessel interaction forms were completed (Appendix 1) and forwarded to the proper authorities within GA DNR and NOAA Fisheries.

The first incident occurred on January 27, 2007 and involved EGNO 1705 and her 2007 calf. The survey team sighted EGNO 1705 and her calf milling to the northeast of the Brunswick channel sea buoy. Shortly after the mother and calf were sighted, an estimated 80-foot white luxury cruising yacht was observed about three miles directly to the north of the whales. The vessel was heading south at about 15 knots and appeared to be transiting offshore. The survey plane attempted to hail the yacht and the captain of the vessel responded to the hail. The survey plane pilots informed the captain that there were right whales directly ahead of his yacht and gave the captain the location of the mother/calf pair. After receiving this information, the yacht slowed to about 10 knots and changed its' heading to the southeast. About seven minutes after the vessel was originally sighted, the large yacht was about two miles directly to the east of EGNO 1705 and her calf. Almost immediately after the large yacht was observed leaving the area, an estimated 15-foot recreational vessel was sighted traveling at high speed (20-25 knots) two miles to the northeast of the mother/calf pair. The vessel was heading southwest and traveling directly towards the Brunswick channel. As the vessel approached the whales, the survey plane attempted to contact the boat multiple times. The vessel never responded to the hail. The recreational vessel did not change direction or speed and was observed passing about a half mile to the north of the whales. This was the closest observed distance between the vessel and the whales. The entire event involving both the large yacht and recreational vessel took place in an 11 minute period and the general behavior and direction of the whales did not appear to change during that time. EGNO 1705 and her calf did not appear to react to the activity or close proximity of the two vessels.

The second whale/vessel interaction took place on March 8, 2007 off of Jekyll Island, GA and involved six whales, including EGNO 1719 and the 2005 Calf of 1140. During this incident, the survey team sighted the six whales within about 200 meters of each other. The whales were initially in three distinct sub-groups consisting of a SAG of three whales, a SAG of two whales and one whale that was solitary

and logging at the surface. At the same time that the whales were sighted, two 20-25 foot Federal Law Enforcement vessels were observed within about 100 meters of the whales. The first vessel was positioned between the two SAGs and the solitary logging whale. The second vessel was about 100 meters to the east of the two SAGs. Both of the vessels were stationary with their engines shut down or in idle. After about five minutes, one of the whales in the SAG of three whales split off on its' own. The sub-groups of whales then consisted of two SAGs of two whales and two solitary whales. The four sub-groups formed a circle about 200 meters in diameter with the first Federal Law Enforcement vessel in the middle with its' engines shut down. The second vessel was observed at this time heading slowly to the northeast about 300 meters away from the whales. Previous to the Wildlife Trust survey team's sighting of the six whales, one of the Federal Law Enforcement vessels had reported the whale sighting to the Brunswick Coast Guard. The information passed on to the Brunswick Coast Guard was that one of the whales was motionless and possibly dead. After receiving the whale sighting information, the Brunswick Coast Guard passed the sighting information on to Leigh Youngner at GA DNR. Ms. Youngner immediately contacted the Wildlife Trust survey plane with the sighting information. The survey plane was already circling the whales when this call was received. Ms. Youngner informed the survey team that the vessels in close proximity to the whales were Federal Law Enforcement Training Center (FLETC) vessels out on a training exercise. While the Wildlife Trust survey team was circling the whales, they did not attempt to hail the vessels. Once the survey team had finished documenting the whale sighting and determined that none of the whales in the sighting were dead or injured, the survey team contacted Ms. Youngner at GA DNR in an attempt to ascertain whether the observed vessels had authorization to be within 500 yards of the right whales. Ms. Youngner stated that she would attempt to contact the vessels and make sure they were aware of the 500 yard approach regulation for right whales. Ms. Youngner was unable to hail the vessels. The survey team then attempted to hail the Federal Law Enforcement vessels. The vessels replied to the hail and were informed of the 500 yard approach regulation. It is not known what the vessels or the whales did after that communication since the survey plane was no longer in visual range of the sighting. However, during the nine minutes that the Wildlife Trust survey team was observing the whales and the vessels, the whales did not appear to react to the presence of the two vessels in the area nor to the second vessel's slow departure to the northeast.

Conclusions

The right whale calving ground is extremely important to the reproducing population of the North Atlantic right whale, but is also vital to military and commercial shipping interests. The EWS system attempts to provide protection for right whales from vessel collisions within this region. During the 2006-2007 survey season, the considerable increase in the number of right whales observed in the NEWS survey area, along with the substantial number of those whales observed in close proximity to the Brunswick channel and the death of a two year old right whale from ship strike, all point toward the continued need for the EWS system. Additionally, the number of right whales observed outside of the designated critical habitat and the Mandatory Ship Reporting (MSR) Zone indicate the need for expansion of the current boundaries of the right whale critical habitat.

The 2006-2007 season represents another year in which the number of juvenile right whale sightings in the NEWS survey area remains high in conjunction with the relatively high number of calves born each right whale calving season since 2001. During the 2000-2001 SEUS season, the highest number of recorded right whale births was documented at 31 calves (Heather Pettis, NEAq, written communication). Since that time, the number of right whale calves born each season has ranged from 16 to 29, with the 2006-2007 season standing at 20 calves since April 2007. These large numbers of juveniles and mother/calf pairs being documented in the SEUS highlight the continued need to pursue appropriate shipping management measures to reduce the risk of whales being injured or killed by vessels. The implementation of speed restrictions and the use of recommended shipping lanes may help to reduce the risks of ship strike from large vessels. However, the number of interactions between vessels of all sizes

and right whales during recent years accentuates the need for greater public education focusing on the presence of right whales in the SEUS and the value of individual responsibility and appropriate behavior near right whales even when smaller recreational vessels are involved.

Until better methods of right whale detection and protection are developed, the EWS surveys represent the most effective method available to help protect right whales from vessel collisions in the SEUS. However, the logistical and increasing financial limitations of these aerial survey efforts require that areas of aerial survey coverage within the EWS be prioritized, with the areas of greatest probability of vessel strike (i.e. shipping channels and lanes) given the highest priority. If we are to reach a potential biological removal level of zero for North Atlantic right whales, as calculated by NOAA Fisheries in the North Atlantic Right Whale Recovery Plan (2005), decreasing resources need to be even more focused on the most imminent threats to right whale survival, ship strike and entanglement. Additionally, the efforts to reduce these threats must include the investigation of new technology and stronger management actions that will have the highest likelihood of reducing mortality and achieving recovery of the species.

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Whale/Ship Interaction (Close Call) Report Form

Date Unique Report #

Observer's Last Name(s) Contact

Survey Agency or Organization:

Survey Area

Are there photos? Location/name of photo files

Is there video? Location/name of video files

Whale Information (Initial)

Time of initial whale sighting (local, 24 hour) Total number of whales Number of calves

Whale IDs

Whale's initial activity (select the one that best fits; use description for additional activities)

Select:

Description of whale activity

Heading of Whale/Whale group

Whale's initial latitude Whale's initial longitude (NAD 83 datum assumed)

Whale Information (Post Interaction)

Time whale was observed at the last location (local, 24 hour)

Whale's last latitude Whale's last longitude (NAD 83 datum assumed)

Did the whale change course? Did the whale's activity change?

New heading of Whale/Whale group

Description of activity/direction change:

Additional Information

FWC Whale/Ship Interaction (Close Call) Report Form

Date Unique Report #

Vessel Information

Is this a close approach (500 yard rule?) No Homeport State Reg. #

Vessel of (one sheet for each vessel) Time vessel was spotted (24 hour)

Vessel Length (feet) Vessel Name

Vessel Code Vessel Type:

Vessel Description

Vessel Speed (knots) Vessel Speed (Qualitative):

Method of determining speed Vessel Heading

Inbound/Outbound: Destination Port

Origin Port

Description of vessel's initial location relative to whale(s)

Vessel's initial latitude Vessel's initial longitude (NAD 83 datum assumed)

Closest distance between whale and vessel Units:

Was communication attempted? (Did you try to hail them?):

Was communication achieved? (Did they respond?):

Did the vessel's heading change?: New Heading

Did the vessel's speed change?: New Speed (knots)

New Vessel Speed Qualitative:

Description of vessel's last location relative to whale(s)

Notes on the communication effort

Time of vessel's last recorded location (local, 24 hour)

Vessel's last latitude Vessel's last longitude (NAD 83 datum assumed)

Additional whale information specific to this vessel

FWC Whale/Ship Interaction (Close Call) Report Form

Date Unique Report #

Vessel Information

Is this a close approach (500 yard rule?) No Homeport State Reg. #

Vessel of (one sheet for each vessel) Time vessel was spotted (24 hour)

Vessel Length (feet) Vessel Name

Vessel Code Vessel Type:

Vessel Description

Vessel Speed (knots) Vessel Speed (Qualitative):

Method of determining speed Vessel Heading

Inbound/Outbound: Destination Port

Origin Port

Description of vessel's initial location relative to whale(s)

Vessel's initial latitude Vessel's initial longitude (NAD 83 datum assumed)

Closest distance between whale and vessel Units:

Was communication attempted? (Did you try to hail them?):

Was communication achieved? (Did they respond?):

Did the vessel's heading change?: New Heading

Did the vessel's speed change?: New Speed (knots)

New Vessel Speed Qualitative:

Description of vessel's last location relative to whale(s)

Notes on the communication effort

Time of vessel's last recorded location (local, 24 hour)

Vessel's last latitude Vessel's last longitude (NAD 83 datum assumed)

Additional whale information specific to this vessel



January 27, 2007 Whale/Ship Interaction Vessel 2

Whale/Ship Interaction (Close Call) Report Form

Date Unique Report #

Observer's Last Name(s)	<input type="text" value="Naessig, Johnson, Longley, Finn"/>	Contact	<input type="text" value="Patricia Naessig 507-581-1147"/>
Survey Agency or Organization:	<input type="text" value="WLT"/>		
Survey Area	<input type="text" value="Nothern EWS"/>		
Are there photos?	<input type="checkbox" value="Yes"/>	Location/name of photo files	<input type="text" value="2007-03-08-WT-GA BACKUP (see also attached images)"/>
Is there video?	<input type="checkbox" value="No"/>	Location/name of video files	<input type="text" value="N/A"/>

Whale Information (Initial)

Time of initial whale sighting (local, 24 hour)	<input type="text" value="1139"/>	Total number of whales	<input type="text" value="6"/>	Number of calves	<input type="text" value="0"/>
Whale IDs	<input type="text" value="2005 Calf of 1140 and 5 Unknown Whales"/>				
Whale's initial activity (select the one that best fits; use description for additional activities)					
Select:	<input type="text" value="SAG"/>				
Description of whale activity	<input type="text" value="Six whales were sighted within about 200 meters of each other. The whales were initially in three distinct sub-groups consisting of a SAG of three whales, a SAG of two whales and one whale that was solitary and logging at the surface."/>				
Heading of Whale/Whale group	<input type="text" value="None"/>				
Whale's initial latitude	<input type="text" value="31'06.838 N"/>	Whale's initial longitude	<input type="text" value="081'14.818 W"/>	(NAD 83 datum assumed)	

Whale Information (Post Interaction)

Time whale was observed at the last location (local, 24 hour)	<input type="text" value="1148"/>				
Whale's last latitude	<input type="text" value="31'06.850 N"/>	Whale's last longitude	<input type="text" value="081'14.722 W"/>	(NAD 83 datum assumed)	
Did the whale change course?	<input type="checkbox" value="No"/>	Did the whale's activity change?	<input type="checkbox" value="No"/>		
New heading of Whale/Whale group	<input type="text" value="N/A"/>				
Description of activity/direction change:					
<input type="text" value="After about five minutes, one of the whales in the SAG of three whales split off on its' own. The sub-groups then consisted of two SAGs of two whales and two solitary whales about 150 meters from the SAGs. The four sub-groups formed a circle about 200 meters in diameter with a Federal Law Enforcement vessel in the middle. The whales did not appear to react to the presence of the 2 vessels in the area during the time the Wildlife Trust survey team was observing the whales."/>					

Additional Information

Previous to the Wildlife Trust survey team's sighting of the six whales, a Federal Law Enforcement vessel had reported the sighting to the Brunswick Coast Guard. The information passed on to the Brunswick Coast Guard was that one of the whales was motionless and possibly dead. The Coast Guard contacted FACS FJAX with the information and the page went out over the EWS pager system as follows: "08MAR07,1125(L),3107N 08114W,UNK/ADULT,UNK/CALF,NONE,USCG425,REMARKS:4 to 6 whales circling a possible dead caucus." The survey team found none of the whales in the sighting to be dead or possibly injured. It is presumed that the "possible dead whale" that the Federal Law Enforcement vessel was referring to was the solitary logging whale in the sighting.

After receiving the whale sighting information, the Brunswick Coast Guard passed the sighting information on to Leigh Youngner at GDNR. After receiving the information, Ms. Youngner immediately contacted the Wildlife Trust survey plane, NOAA46 Twin Otter, with the sighting. The survey plane was already circling the whales when the call was received from Ms. Youngner. During the call, Ms. Youngner informed the NOAA46 pilots, Nick Toth and Jason Mansour, that the vessels in close proximity to the whales were FLETC vessels out on a training exercise.

FWC Whale/Ship Interaction (Close Call) Report Form

Date Unique Report #

Vessel Information

Is this a close approach (500 yard rule?) Yes Homeport State Reg. #

Vessel of (one sheet for each vessel) Time vessel was spotted (24 hour)

Vessel Length (feet) Vessel Name

Vessel Code Vessel Type:

Vessel Description

Vessel Speed (knots) Vessel Speed (Qualitative):

Method of determining speed Vessel Heading

Inbound/Outbound: Destination Port

Origin Port

Description of vessel's initial location relative to whale(s)

The vessel was initially sighted about 100 meters to the northwest of the two SAGs of whales and about 100 meters to the southeast of the solitary logging whale. The vessel appeared to be stationary with its engines shut down.

Vessel's initial latitude Vessel's initial longitude (NAD 83 datum assumed)

Closest distance between whale and vessel Units:

Was communication attempted? (Did you try to hail them?):

Was communication achieved? (Did they respond?):

Did the vessel's heading change?: New Heading

Did the vessel's speed change?: New Speed (knots)

New Vessel Speed Qualitative:

Description of vessel's last location relative to whale(s)

The vessel was last observed in the middle of a 200-meter diameter circle formed by the four sub-groups of whales (two SAGs and two solitary whales.) The vessel still appeared to be stationary with its engines shut down.

Notes on the communication effort

While the Wildlife Trust survey team was circling the whales, they did not attempt to hail the vessels. Once the survey team had finished documenting the whale sighting, the NOAA46 Twin Otter pilots, Nick Toth and Jason Mansour, contacted Ms. Youngner at GDNR in an attempt to ascertain whether the observed vessels had authorization to be within 500 yards of the right whales. Ms. Youngner stated that she would attempt to contact the vessels and make sure they were aware of the 500 yard approach regulation. Ms. Youngner was unable to hail the vessels. The NOAA46 pilots then attempted to hail the vessels on FM/VHF referring to them as Federal Law Enforcement vessels. The vessels replied on FM/VHF referring to themselves as Federal Law Enforcement and not specifically as FLETC vessels. (Continued in "Additional" box below)

Time of vessel's last recorded location (local, 24 hour)

Vessel's last latitude Vessel's last longitude (NAD 83 datum assumed)

Additional whale information specific to this vessel

(Continued from "Notes on the communication effort" above) Once achieving contact with the vessels, the pilots informed the responding vessels of the 500 yard approach regulation for right whales. The vessels replied that they copied the transmission. It is not known what the vessels did after that communication since the survey plane was no longer in visual range of the vessels.

FWC Whale/Ship Interaction (Close Call) Report Form

Date Unique Report #

Vessel Information

Is this a close approach (500 yard rule?) Yes Homeport State Reg. #

Vessel of (one sheet for each vessel) Time vessel was spotted (24 hour)

Vessel Length (feet) Vessel Name

Vessel Code Vessel Type:

Vessel Description

Vessel Speed (knots) Vessel Speed (Qualitative):

Method of determining speed Vessel Heading

Inbound/Outbound: Destination Port

Origin Port

Description of vessel's initial location relative to whale(s)

The vessel was initially sighted about 100 meters to the east of the two SAGs of whales. The vessel appeared to be stationary with its engines in idle.

Vessel's initial latitude Vessel's initial longitude (NAD 83 datum assumed)

Closest distance between whale and vessel Units:

Was communication attempted? (Did you try to hail them?):

Was communication achieved? (Did they respond?):

Did the vessel's heading change?: New Heading

Did the vessel's speed change?: New Speed (knots)

New Vessel Speed Qualitative:

Description of vessel's last location relative to whale(s)

The vessel was last seen heading slowly to the northeast about 300 meters away from the whales. The vessel's last recorded location listed below was taken right as the vessel was leaving the area, not when the vessel was 300 meters away.

Notes on the communication effort

After the survey team had finished documenting the whale sighting and spoken to GDNR, the NOAA46 pilots attempted to hail the vessels in close proximity to the whales on FM/VHF referring to them as Federal Law Enforcement vessels. The vessels replied on FM/VHF referring to themselves as Federal Law Enforcement and not specifically as FLETC vessels. Once achieving contact with the vessels, the pilots informed the responding vessels of the 500 yard approach regulation for right whales. The vessels replied that they copied the transmission. It is not known what the vessels did after that communication since the survey plane was no longer in visual range of the vessels. It is assumed that this vessel was one of the responding vessels.

Time of vessel's last recorded location (local, 24 hour)

Vessel's last latitude Vessel's last longitude (NAD 83 datum assumed)

Additional whale information specific to this vessel

The whales did not appear to have a reaction to the vessel's slow departure from the area to the northeast.



March 8, 2007 Whale/Ship Interaction Federal Law Enforcement Vessel 1
and One of the SAGs of Whales

Appendix 2. NEWS right whale sightings from 01 December 2006 through 28 March 2007.

Whale Number	Month	Day	Year	Time (Local)	Survey Name	Latitude	Longitude	RIWH Letter	EGNO	Time of Report (Local)	NRW Number	Comments	Sighting Distance (nm)
1	12	11	2006	1439	NEWS20061211	31.07740	81.20150	A	2601	1502	NRW07006		0.40
2	12	11	2006	1536	NEWS20061211	30.98433	81.29425	B	3101	1603	NRW07007		0.05
3	12	11	2006	1536	NEWS20061211	30.98433	81.29425	C	2605	1603	NRW07007		0.05
4	12	11	2006	1536	NEWS20061211	30.98433	81.29425	D	2611	1603	NRW07007		0.05
5	12	17	2006	1455	NEWS20061217	30.88213	-81.23430	A	2611	1521	NRW07022		0.07
6	12	17	2006	1455	NEWS20061217	30.88213	-81.23430	B	3101	1521	NRW07022		0.07
7	12	18	2006	1149	NEWS20061218	31.32542	-81.15450	A	2004 Calf of 1705	1205	NRW07024		0.47
8	12	18	2006	1149	NEWS20061218	31.32542	-81.15450	B	CT01SEUS06	1205	NRW07024		0.47
9	12	18	2006	1149	NEWS20061218	31.32542	-81.15450	C	3508	1205	NRW07024		0.47
10	12	19	2006	1500	NEWS20061219	30.85662	-81.17790	A	2005 Calf of 1241	1520	NRW07033		1.64
11	12	19	2006	1500	NEWS20061219	30.85662	-81.17790	B	3260	1520	NRW07033		1.64
12	12	19	2006	1534	NEWS20061219	31.30633	-81.14868	C	3508	1548	NRW07034		N/A
13	12	19	2006	1534	NEWS20061219	31.30633	-81.14868	D	CT01SEUS06	1548	NRW07034		N/A
14	12	23	2006	1310	NEWS20061223	31.14923	-81.24667	A	1817	1351	NRW07037	w/ Yearling	0.98
15	12	23	2006	1310	NEWS20061223	31.14923	-81.24667	B	2006 Calf of 1817	1351	NRW07037	Yearling	0.98
16	12	23	2006	1400	NEWS20061223	31.03237	-81.16767	C	2145	1422	NRW07038	w/ Calf	0.05
17	12	23	2006	1400	NEWS20061223	31.03237	-81.16767	D	2007 Calf of 2145	1422	NRW07038	Calf	0.05
18	12	24	2006	1311	NEWS20061224	30.99243	-81.21793	A	1611	1337	NRW07041	w/ Yearling	0.48
19	12	24	2006	1311	NEWS20061224	30.99243	-81.21793	B	2006 Calf of 1611	1337	NRW07041	Yearling	0.48
20	12	30	2006	1020	NEWS20061230	31.03342	-81.05248	A	3508	1035	NRW07049	Dead	0.02
21	01	03	2007	0959	NEWS20070103	30.92002	-81.20242	A	1705	1027	NRW07055		0.79
22	01	03	2007	0959	NEWS20070103	30.92002	-81.20242	B	2611	1027	NRW07055		0.79
23	01	06	2007	0933	NEWS20070106	30.93543	-81.04400	A	2605	0956	NRW07067		0.08
24	01	09	2007	1018	NEWS20070109	31.22825	-81.12483	A	2645	1044	NRW07085	w/ Calf	0.33
25	01	09	2007	1018	NEWS20070109	31.22825	-81.12483	B	2007 Calf of 2645	1044	NRW07085	Calf	0.33
26	01	13	2007	1027	NEWS20070113	31.32567	-81.12382	A	2605	1045	NRW07106		0.44
27	01	13	2007	1027	NEWS20070113	31.32567	-81.12382	B	2611	1045	NRW07106	w/ Calf	0.44
28	01	13	2007	1027	NEWS20070113	31.32567	-81.12382	C	2007 Calf of 2611	1045	NRW07106	Calf	0.44
29	01	14	2007	1001	NEWS20070114	31.44302	-81.03897	A	2611	1025	NRW07111	w/ Calf	0.59
30	01	14	2007	1001	NEWS20070114	31.44302	-81.03897	B	2007 Calf of 2611	1025	NRW07111	Calf	0.59
31	01	14	2007	1237	NEWS20070114	31.07368	-81.19817	C	2642	1250	NRW07114	w/ Calf	0.61
32	01	14	2007	1237	NEWS20070114	31.07368	-81.19817	D	2007 Calf of 2642	1250	NRW07114	Calf	0.61
33	01	15	2007	1232	NEWS20070115	31.17173	-81.18792	A	2145	1246	NRW07121	w/ Calf	0.74
34	01	15	2007	1232	NEWS20070115	31.17173	-81.18792	B	2007 Calf of 2145	1246	NRW07121	Calf	0.74
35	01	15	2007	1258	NEWS20070115	31.13043	-81.19932	C	BK01SEUS06	1319	NRW07122	Entangled	0.19
36	01	16	2007	1009	NEWS20070116	31.00992	-81.23758	A	2645	1019	NRW07131	w/ Calf	N/A
37	01	16	2007	1009	NEWS20070116	31.00992	-81.23758	B	2007 Calf of 2645	1019	NRW07131	Calf	N/A
38	01	16	2007	1029	NEWS20070116	31.01312	-81.14570	C	No Photos	1058	NRW07132	No Photos	N/A
39	01	16	2007	1120	NEWS20070116	31.13147	-81.07617	D	2145	1128	NRW07134	w/ Calf	N/A
40	01	16	2007	1120	NEWS20070116	31.13147	-81.07617	E	2007 Calf of 2145	1128	NRW07134	Calf	N/A

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41	01	16	2007	1134	NEWS20070116	31.06000	-81.09805	F	2004 Calf of 2614	1205	NRW07135		N/A
42	01	16	2007	1134	NEWS20070116	31.06000	-81.09805	G	3346	1205	NRW07135	Entangled	N/A
43	01	16	2007	1213	NEWS20070116	31.18002	-81.03665	H	BK01SEUS06	1304	NRW07136	Entangled	N/A
44	01	20	2007	1107	NEWS20070120	31.03225	-81.20980	A	2645	1128	NRW07145	w/ Calf	0.06
45	01	20	2007	1107	NEWS20070120	31.03225	-81.20980	B	2007 Calf of 2645	1128	NRW07145	Calf	0.06
46	01	21	2007	0948	NEWS20070121	31.03643	-81.29583	A	2611	1013	NRW07146	w/ Calf	0.17
47	01	21	2007	0948	NEWS20070121	31.03643	-81.29583	B	2007 Calf of 2611	1013	NRW07146	Calf	0.17
48	01	27	2007	0924	NEWS20070127	30.85282	-81.16348	A	3317	0945	NRW07167		1.74
49	01	27	2007	0924	NEWS20070127	30.85282	-81.16348	B	3333	0945	NRW07167		1.74
50	01	27	2007	0924	NEWS20070127	30.85282	-81.16348	C	3346	0945	NRW07167	Entangled	1.74
51	01	27	2007	1004	NEWS20070127	30.94405	-81.08153	D	2642	1013	NRW07169	w/ Calf	0.59
52	01	27	2007	1004	NEWS20070127	30.94405	-81.08153	E	2007 Calf of 2642	1013	NRW07169	Calf	0.59
53	01	27	2007	1141	NEWS20070127	31.17640	-81.20463	F	1810	1212	NRW07172	w/ Calf	0.42
54	01	27	2007	1141	NEWS20070127	31.17640	-81.20463	G	2007 Calf of 1810	1212	NRW07172	Calf	0.42
55	01	27	2007	1157	NEWS20070127	31.18492	-81.16088	H	2605	1212	NRW07173		0.09
56	01	27	2007	1226	NEWS20070127	31.24197	-81.10603	I	2611	1238	NRW07174	w/ Calf	0.46
57	01	27	2007	1226	NEWS20070127	31.24197	-81.10603	J	2007 Calf of 2611	1238	NRW07174	Calf	0.46
58	01	27	2007	1323	NEWS20070127	31.08767	-81.23348	K	1705	1350	NRW07176	w/ Calf	N/A
59	01	27	2007	1323	NEWS20070127	31.08767	-81.23348	L	2007 Calf of 1705	1350	NRW07176	Calf	N/A
60	01	27	2007	1608	NEWS20070127	31.23718	-81.10935	M	2746	1630	NRW07179	w/ Calf	N/A
61	01	27	2007	1608	NEWS20070127	31.23718	-81.10935	N	2007 Calf of 2746	1630	NRW07179	Calf	N/A
62	01	30	2007	0938	NEWS20070130	30.89430	-81.17313	A	3360 (BK23)	0959	NRW07184		0.64
63	01	30	2007	1020	NEWS20070130	30.92342	-81.22930	B	2746	1032	NRW07185	w/ Calf	0.64
64	01	30	2007	1020	NEWS20070130	30.92342	-81.22930	C	2007 Calf of 2746	1032	NRW07185	Calf	0.64
65	01	30	2007	1105	NEWS20070130	31.03083	-81.16488	D	1705	1123	NRW07187	w/ Calf	0.18
66	01	30	2007	1105	NEWS20070130	31.03083	-81.16488	E	2007 Calf of 1705	1123	NRW07187	Calf	0.18
67	01	30	2007	1131	NEWS20070130	31.09563	-81.21088	F	2611	1149	NRW07188	w/ Calf	0.74
68	01	30	2007	1131	NEWS20070130	31.09563	-81.21088	G	2007 Calf of 2611	1149	NRW07188	Calf	0.74
69	01	30	2007	1204	NEWS20070130	31.15858	-81.21197	H	2645	1221	NRW07190	w/ Calf	1.47
70	01	30	2007	1204	NEWS20070130	31.15858	-81.21197	I	2007 Calf of 2645	1221	NRW07190	Calf	1.47
71	02	02	2007	1330	NEWS20070202	31.02878	-81.11213	A	3346	1414	NRW202	Entangled	2.71
72	02	02	2007	1330	NEWS20070202	31.02878	-81.11213	B	SE06BK15	1414	NRW202		2.71
73	02	02	2007	1330	NEWS20070202	31.02878	-81.11213	C	CT01BOF05	1414	NRW202		2.71
74	02	02	2007	1348	NEWS20070202	30.98390	-81.14197	D	1911	1414	NRW203		N/A
75	02	02	2007	1352	NEWS20070202	30.98693	-81.13007	E	BK53	1414	NRW203		N/A
76	02	02	2007	1352	NEWS20070202	30.98693	-81.13007	F	SE06CT02/CTAK01	1414	NRW203		N/A
77	02	02	2007	1352	NEWS20070202	30.98693	-81.13007	G	SE07CT06	1414	NRW203		N/A
78	02	02	2007	1433	NEWS20070202	31.01695	-81.11320	H	SE06BK15	N/A	N/A		N/A
79	02	02	2007	1433	NEWS20070202	31.01695	-81.11320	I	CT01BOF05	N/A	N/A		N/A
80	02	04	2007	1215	NEWS20070204	31.08260	-81.13565	A	2746	1234	NRW07210	w/ Calf	0.05
81	02	04	2007	1215	NEWS20070204	31.08260	-81.13565	B	2007 Calf of 2746	1234	NRW07210	Calf	0.05
82	02	08	2007	0920	NEWS20070208	30.88018	-81.28435	A	CT01BOF05	1000	NRW07227		0.18

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83	02	08	2007	0920	NEWS20070208	30.88018	-81.28435	B	SE07CT07	1000	NRW07227		0.18
84	02	08	2007	0920	NEWS20070208	30.88018	-81.28435	C	SE07CT06	1000	NRW07227		0.18
85	02	08	2007	0954	NEWS20070208	30.89580	-81.26978	D	CT01BOF05	N/A	N/A		N/A
86	02	08	2007	0954	NEWS20070208	30.89580	-81.26978	E	SE07CT07	N/A	N/A		N/A
87	02	08	2007	0954	NEWS20070208	30.89580	-81.26978	F	SE07CT06	N/A	N/A		N/A
88	02	08	2007	1103	NEWS20070208	31.06683	-81.24135	G	1810	1131	NRW07230	w/ Calf	0.92
89	02	08	2007	1103	NEWS20070208	31.06683	-81.24135	H	2007 Calf of 1810	1131	NRW07230	Calf	0.92
90	02	08	2007	1118	NEWS20070208	31.12017	-81.20127	I	2614	1131	NRW07231	w/ Calf	1.98
91	02	08	2007	1118	NEWS20070208	31.12017	-81.20127	J	2007 Calf of 2614	1131	NRW07231	Calf	1.98
92	02	08	2007	1208	NEWS20070208	31.09713	-81.24692	K	2611	1227	NRW07233	w/ Calf	2.23
93	02	08	2007	1208	NEWS20070208	31.09713	-81.24692	L	2007 Calf of 2611	1227	NRW07233	Calf	2.23
94	02	09	2007	1140	NEWS20070209	31.18260	-81.24010	A	BK21	1209	NRW07242		0.02
95	02	09	2007	1223	NEWS20070209	31.21798	-81.00443	B	2605	1239	NRW07243		0.98
96	02	11	2007	1023	NEWS20070211	31.12725	-81.22400	A	2006 Calf of 1946	1043	NRW07258		0.34
97	02	11	2007	1259	NEWS20070211	31.30052	-80.78573	B	2605	1325	NRW07262	w/ Calf	0.98
98	02	11	2007	1259	NEWS20070211	31.30052	-80.78573	C	2007 Calf of 2605	1325	NRW07262	Calf	0.98
99	02	12	2007	1033	NEWS20070212	31.02870	-81.18413	A	1810	1045	NRW07267	w/ Calf	0.28
100	02	12	2007	1033	NEWS20070212	31.02870	-81.18413	B	2007 Calf of 1810	1045	NRW07267	W/ Calf	0.28
101	02	12	2007	1055	NEWS20070212	31.08822	-81.19747	C	SE07CT10	1115	NRW07270		0.24
102	02	12	2007	1507	NEWS20070212	31.35347	-80.99565	D	1608	1535	NRW07275		N/A
103	02	12	2007	1507	NEWS20070212	31.35347	-80.99565	E	1911	1535	NRW07275		N/A
104	02	15	2007	1003	NEWS20070215	30.98410	-81.06382	A	2746	1020	NRW07288	w/ Calf	0.02
105	02	15	2007	1003	NEWS20070215	30.98410	-81.06382	B	2007 Calf of 2746	1020	NRW07288	Calf	0.02
106	02	20	2007	0955	NEWS20070220	30.94207	-81.31670	A	2746	1004	NRW07313	w/ Calf	0.44
107	02	20	2007	0955	NEWS20070220	30.94207	-81.31670	B	2007 Calf of 2746	1004	NRW07313	Calf	0.44
108	02	22	2007	1225	NEWS20070222	30.97927	-81.18478	A	3314	1253	NRW07337	Prev. Entgled	0.23
109	02	22	2007	1234	NEWS20070222	30.99433	-81.16702	B	2004 Calf of 1321	1253	NRW07337		N/A
110	02	22	2007	1234	NEWS20070222	30.99433	-81.16702	C	CT01BOF05	1253	NRW07337		N/A
111	02	22	2007	1234	NEWS20070222	30.99433	-81.16702	D	SE07CT21	1253	NRW07337		N/A
112	02	22	2007	1234	NEWS20070222	30.99433	-81.16702	E	2427	1253	NRW07337		N/A
113	02	22	2007	1234	NEWS20070222	30.99433	-81.16702	F	2004 Calf of 2330	1253	NRW07337		N/A
114	02	22	2007	1329	NEWS20070222	31.16088	-81.25347	G	2746	1352	NRW07340	w/ Calf	N/A
115	02	22	2007	1329	NEWS20070222	31.16088	-81.25347	H	2007 Calf of 2746	1352	NRW07340	Calf	N/A
116	02	22	2007	1439	NEWS20070222	31.16143	-81.09732	I	CT15	1458	NRW07345		1.19
117	02	22	2007	1439	NEWS20070222	31.16143	-81.09732	J	SE07CT17	1458	NRW07345		1.19
118	02	22	2007	1439	NEWS20070222	31.16143	-81.09732	K	SE07BK11	1458	NRW07345		1.19
119	02	24	2007	1025	NEWS20070224	31.13172	-81.16473	A	SE07CT17	1110	NRW07354		0.21
120	02	24	2007	1025	NEWS20070224	31.13172	-81.16473	B	SE07BK11	1110	NRW07354		0.21
121	02	24	2007	1025	NEWS20070224	31.13172	-81.16473	C	SE07BK08	1110	NRW07354		0.21
122	02	24	2007	1119	NEWS20070224	31.09722	-81.30178	D	2006 Calf of 1946	1145	NRW07355		N/A
123	02	26	2007	0958	NEWS20070226	30.97715	-81.08350	A	SE07BK11	1020	NRW07366		0.35

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124	02	26	2007	0958	NEWS20070226	30.97715	-81.08350	B	1971	1020	NRW07366		0.35
125	02	26	2007	1030	NEWS20070226	31.04663	-80.89475	C	1705	1043	NRW07367	w/ Calf	0.74
126	02	26	2007	1030	NEWS20070226	31.04663	-80.89475	D	2007 Calf of 1705	1043	NRW07367	Calf	0.74
127	02	26	2007	1106	NEWS20070226	31.08863	-81.07962	E	SE07BK13	1116	NRW07368		0.34
128	02	26	2007	1106	NEWS20070226	31.08863	-81.07962	F	SE07CT25	1116	NRW07368		0.34
129	02	27	2007	0944	NEWS20070227	30.92487	-80.78558	A	1620	0953	NRW07376	w/ Calf	0.34
130	02	27	2007	0944	NEWS20070227	30.92487	-80.78558	B	2007 Calf of 1620	0953	NRW07376	Calf	0.34
131	02	27	2007	1001	NEWS20070227	30.91447	-81.06505	C	SE06CT05	1020	NRW07379		1.11
132	02	27	2007	1001	NEWS20070227	30.91447	-81.06505	D	SE07CT18	1020	NRW07379		1.11
133	02	27	2007	1001	NEWS20070227	30.91447	-81.06505	E	SE07BK11	1020	NRW07379		1.11
134	02	27	2007	1057	NEWS20070227	31.04913	-81.11723	F	SE07CT12	1123	NRW07381		0.79
135	02	27	2007	1057	NEWS20070227	31.04913	-81.11723	G	SE07BK22 (PossSE06BK02)	1123	NRW07381		0.79
136	02	27	2007	1057	NEWS20070227	31.04913	-81.11723	H	SE06CT02/CTAK01	1123	NRW07381		0.79
137	02	27	2007	1057	NEWS20070227	31.04913	-81.11723	I	SE07BK17	1123	NRW07381		0.79
138	02	27	2007	1112	NEWS20070227	31.02607	-81.21707	J	2746	1123	NRW07382	w/ Calf	0.48
139	02	27	2007	1112	NEWS20070227	31.02607	-81.21707	K	2007 Calf of 2746	1123	NRW07382	Calf	0.48
140	02	27	2007	1206	NEWS20070227	31.12583	-81.16180	L	2006 Calf of 1946	1226	NRW07384		0.50
141	02	27	2007	1431	NEWS20070227	31.34068	-80.97632	M	2605	1440	NRW07392	w/ Calf	0.39
142	02	27	2007	1431	NEWS20070227	31.34068	-80.97632	N	2007 Calf of 2605	1440	NRW07392	Calf	0.39
143	02	28	2007	1002	NEWS20070228	30.98505	-81.24107	A	SE07BK22 (PossSE06BK02)	1024	NRW07403		0.14
144	02	28	2007	1002	NEWS20070228	30.98505	-81.24107	B	SE06CT02/CTAK01	1024	NRW07403		0.14
145	02	28	2007	1011	NEWS20070228	30.97483	-81.24052	C	SE07BK19	1024	NRW07403		N/A
146	02	28	2007	1011	NEWS20070228	30.97483	-81.24052	D	SE07CT12	1024	NRW07403		N/A
147	02	28	2007	1011	NEWS20070228	30.97483	-81.24052	E	SE07BK17	1024	NRW07403		N/A
148	02	28	2007	1011	NEWS20070228	30.97483	-81.24052	F	SE07CT18	1024	NRW07403		N/A
149	02	28	2007	1011	NEWS20070228	30.97483	-81.24052	G	2005 Calf of 1140	1024	NRW07403		N/A
150	02	28	2007	1011	NEWS20070228	30.97483	-81.24052	H	SE07CT17	1024	NRW07403		N/A
151	02	28	2007	1027	NEWS20070228	30.97143	-81.05327	I	2145	1045	NRW07404	w/ Calf	0.71
152	02	28	2007	1027	NEWS20070228	30.97143	-81.05327	J	2007 Calf of 2145	1045	NRW07404	Calf	0.71
153	02	28	2007	1109	NEWS20070228	31.07053	-81.22278	K	2614	1119	NRW07406	w/ Calf	0.74
154	02	28	2007	1109	NEWS20070228	31.07053	-81.22278	L	2007 Calf of 2614	1119	NRW07406	Calf	0.74
155	02	28	2007	1119	NEWS20070228	31.08403	-81.03932	M	2746	1138	NRW07408	w/ Calf	0.06
156	02	28	2007	1119	NEWS20070228	31.08403	-81.03932	N	2007 Calf of 2746	1138	NRW07408	Calf	0.06
157	02	28	2007	1326	NEWS20070228	31.32543	-81.14140	O	No ID Photos	1338	NRW07412	No ID Photos	N/A
158	02	28	2007	1326	NEWS20070228	31.32543	-81.14140	P	1705	1338	NRW07412	w/ Calf	N/A
159	02	28	2007	1326	NEWS20070228	31.32543	-81.14140	Q	2007 Calf of 1705	1338	NRW07412	Calf	N/A
160	03	03	2007	1013	NEWS20070303	31.10325	-81.17822	A	SE07CT24	1111	NRW07418		N/A
161	03	03	2007	1017	NEWS20070303	31.09800	-81.16885	B	SE07CT06	1111	NRW07418		N/A
162	03	03	2007	1017	NEWS20070303	31.09800	-81.16885	C	SE07CT12	1111	NRW07418		N/A
163	03	03	2007	1017	NEWS20070303	31.09800	-81.16885	D	SE07BK17	1111	NRW07418		N/A
164	03	03	2007	1017	NEWS20070303	31.09800	-81.16885	E	SE07CT21	1111	NRW07418		N/A

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165	03	03	2007	1039	NEWS20070303	31.09000	-81.17560	F	SE07CT24	1111	NRW07418		N/A
166	03	03	2007	1046	NEWS20070303	31.10010	-81.16850	G	SE07CT25	1111	NRW07418		N/A
167	03	03	2007	1100	NEWS20070303	31.04247	-81.27112	H	2430	1111	NRW07419	w/ Calf	N/A
168	03	03	2007	1100	NEWS20070303	31.04247	-81.27112	I	2007 Calf of 2430	1111	NRW07419	Calf	N/A
169	03	03	2007	1114	NEWS20070303	30.87450	-81.32867	J	2006 Calf of 1946	1124	NRW07420		0.32
170	03	03	2007	1205	NEWS20070303	30.99233	-81.04000	K	SE06BK15	1225	NRW07421		0.50
171	03	03	2007	1205	NEWS20070303	30.99233	-81.04000	L	2004 Calf of 2460	1225	NRW07421		0.50
172	03	03	2007	1205	NEWS20070303	30.99233	-81.04000	M	3442	1225	NRW07421		0.50
173	03	03	2007	1205	NEWS20070303	30.99233	-81.04000	N	SE07BK11	1225	NRW07421		0.50
174	03	03	2007	1254	NEWS20070303	31.08175	-81.13850	O	SE07CT24	1315	NRW07423		0.01
175	03	03	2007	1254	NEWS20070303	31.08175	-81.13850	P	No Photos	1315	NRW07423	No Photos	0.01
176	03	03	2007	1254	NEWS20070303	31.08175	-81.13850	Q	SE07CT06	1315	NRW07423		0.01
177	03	03	2007	1254	NEWS20070303	31.08175	-81.13850	R	SE07CT25	1315	NRW07423		0.01
178	03	03	2007	1254	NEWS20070303	31.08175	-81.13850	S	2006 Calf of 1611	1315	NRW07423		0.01
179	03	03	2007	1254	NEWS20070303	31.08175	-81.13850	T	No Photos	1315	NRW07423	No Photos	0.01
180	03	03	2007	1330	NEWS20070303	31.18453	-81.00905	U	SE07BK08	1352	NRW07424		0.04
181	03	03	2007	1330	NEWS20070303	31.18453	-81.00905	V	SE07BK19	1352	NRW07424		0.04
182	03	06	2007	0945	NEWS20070306	30.97422	-81.20818	A	SE07CT27	1015	NRW07427		2.39
183	03	06	2007	0945	NEWS20070306	30.97422	-81.20818	B	No Photos	1015	NRW07427	No Photos	2.39
184	03	06	2007	0945	NEWS20070306	30.97422	-81.20818	C	1307	1015	NRW07427		2.39
185	03	06	2007	0945	NEWS20070306	30.97422	-81.20818	D	1327	1015	NRW07427		2.39
186	03	06	2007	1040	NEWS20070306	31.10838	-81.14920	E	SE07CT10	1050	NRW07428		4.43
187	03	06	2007	1155	NEWS20070306	31.29177	-80.99675	F	2605	1210	NRW07430	w/ Calf	0.61
188	03	06	2007	1155	NEWS20070306	31.29177	-80.99675	G	2007 Calf of 2605	1210	NRW07430	Calf	0.61
189	03	06	2007	1336	NEWS20070306	31.52678	-80.72193	H	No ID Photos	1405	NRW07432	No ID Photos	0.45
190	03	07	2007	0949	NEWS20070307	30.92092	-81.22765	A	SE07CT26	1011	NRW07434		0.74
191	03	07	2007	0949	NEWS20070307	30.92092	-81.22765	B	SE07CT17	1011	NRW07434		0.74
192	03	07	2007	0949	NEWS20070307	30.92092	-81.22765	C	SE07CT27	1011	NRW07434		0.74
193	03	07	2007	1014	NEWS20070307	30.97398	-81.33610	D	2611	1025	NRW07436	w/ Calf	0.56
194	03	07	2007	1014	NEWS20070307	30.97398	-81.33610	E	2007 Calf of 2611	1025	NRW07436	Calf	0.56
195	03	07	2007	1054	NEWS20070307	31.02945	-81.19703	F	2430	1115	NRW07437	w/ Calf	0.25
196	03	07	2007	1054	NEWS20070307	31.02945	-81.19703	G	2007 Calf of 2430	1115	NRW07437	Calf	0.25
197	03	07	2007	1054	NEWS20070307	31.02945	-81.19703	H	2645	1115	NRW07437	w/ Calf	0.25
198	03	07	2007	1054	NEWS20070307	31.02945	-81.19703	I	2007 Calf of 2645	1115	NRW07437	Calf	0.25
199	03	07	2007	1145	NEWS20070307	31.12820	-81.15043	J	SE07CT21	1200	NRW07438		0.32
200	03	07	2007	1145	NEWS20070307	31.12820	-81.15043	K	2005 Calf of 1140	1200	NRW07438		0.32
201	03	07	2007	1145	NEWS20070307	31.12820	-81.15043	L	SE07BK17	1200	NRW07438		0.32
202	03	07	2007	1145	NEWS20070307	31.12820	-81.15043	M	SE07BK22 (PossSE06BK02)	1200	NRW07438		0.32
203	03	07	2007	1145	NEWS20070307	31.12820	-81.15043	N	SE06BK15	1200	NRW07438		0.32
204	03	07	2007	1145	NEWS20070307	31.12820	-81.15043	O	SE07BK19	1200	NRW07438		0.32
205	03	07	2007	1352	NEWS20070307	31.44320	-81.02623	P	1705	1400	NRW07439	w/ Calf	0.58
206	03	07	2007	1352	NEWS20070307	31.44320	-81.02623	Q	2007 Calf of 1705	1400	NRW07439	Calf	0.58

Whale Number	Month	Day	Year	Time (Local)	Survey Name	Latitude	Longitude	RIVH Letter	EGNO	Time of Report (Local)	NRW Number	Comments	Sighting Distance (mm)
207	03	07	2007	1411	NEWS20070307	31.49088	-81.04722	R	SE07BK18	1419	NRW07440		N/A
208	03	07	2007	1411	NEWS20070307	31.49088	-81.04722	S	1719	1419	NRW07440		N/A
209	03	07	2007	1431	NEWS20070307	31.54767	-80.57330	T	1971	1453	NRW07441		0.82
210	03	07	2007	1431	NEWS20070307	31.54767	-80.57330	U	3442	1453	NRW07441		0.82
211	03	08	2007	0917	NEWS20070308	30.87853	-81.28138	A	2645	0946	NRW07445	w/ Calf	0.25
212	03	08	2007	0917	NEWS20070308	30.87853	-81.28138	B	2007 Calf of 2645	0946	NRW07445	Calf	0.25
213	03	08	2007	1003	NEWS20070308	30.96737	-81.30430	C	2614	1053	NRW07448	w/ Calf	0.84
214	03	08	2007	1003	NEWS20070308	30.96737	-81.30430	D	2007 Calf of 2614	1053	NRW07448	Calf	0.84
215	03	08	2007	1010	NEWS20070308	30.99132	-81.26320	E	2430	1053	NRW07449	w/ Calf	0.47
216	03	08	2007	1010	NEWS20070308	30.99132	-81.26320	F	2007 Calf of 2430	1053	NRW07449	Calf	0.47
217	03	08	2007	1018	NEWS20070308	30.99562	-81.09977	G	SE07CT27	1053	NRW07450		0.61
218	03	08	2007	1018	NEWS20070308	30.99562	-81.09977	H	SE07BK17	1053	NRW07450		0.61
219	03	08	2007	1018	NEWS20070308	30.99562	-81.09977	I	SE07CT17	1053	NRW07450		0.61
220	03	08	2007	1027	NEWS20070308	30.99465	-81.09082	J	SE07CT10	1053	NRW07450		N/A
221	03	08	2007	1139	NEWS20070308	31.11397	-81.24697	K	2005 Calf of 1140	1202	NRW07452		1.18
222	03	08	2007	1139	NEWS20070308	31.11397	-81.24697	L	SE07BK19	1202	NRW07452		1.18
223	03	08	2007	1139	NEWS20070308	31.11397	-81.24697	M	SE07CT24	1202	NRW07452		1.18
224	03	08	2007	1139	NEWS20070308	31.11397	-81.24697	N	SE07BK11	1202	NRW07452		1.18
225	03	08	2007	1139	NEWS20070308	31.11397	-81.24697	O	SE07CT21	1202	NRW07452		1.18
226	03	08	2007	1139	NEWS20070308	31.11397	-81.24697	P	1719	1202	NRW07452		1.18
227	03	08	2007	1242	NEWS20070308	31.28343	-80.95730	Q	1705	1257	NRW07454	w/ Calf	0.00
228	03	08	2007	1242	NEWS20070308	31.28343	-80.95730	R	2007 Calf of 1705	1257	NRW07454	Calf	0.00
229	03	08	2007	1304	NEWS20070308	31.32765	-80.89423	S	2605	1314	NRW07455	w/ Calf	0.37
230	03	08	2007	1304	NEWS20070308	31.32765	-80.89423	T	2007 Calf of 2605	1314	NRW07455	Calf	0.37
231	03	12	2007	1227	NEWS20070312	31.13908	-80.91545	A	2645	1245	NRW07475	w/ Calf	0.33
232	03	12	2007	1227	NEWS20070312	31.13908	-80.91545	B	2007 Calf of 2645	1245	NRW07475	Calf	0.33
233	03	12	2007	1411	NEWS20070312	31.37357	-81.13908	C	2642	1427	NRW07481	w/ Calf	0.63
234	03	12	2007	1411	NEWS20070312	31.37357	-81.13908	D	2007 Calf of 2642	1427	NRW07481	Calf	0.63
235	03	12	2007	1429	NEWS20070312	31.37947	-80.70462	E	1911	1440	NRW07482	w/ Calf	0.24
236	03	12	2007	1429	NEWS20070312	31.37947	-80.70462	F	2007 Calf of 1911	1440	NRW07482	Calf	0.24
237	03	12	2007	1541	NEWS20070312	31.53265	-80.85553	G	2430	1602	NRW07485	w/ Calf	0.04
238	03	12	2007	1541	NEWS20070312	31.53265	-80.85553	H	2007 Calf of 2430	1602	NRW07485	Calf	0.04
239	03	12	2007	1634	NEWS20070312	31.25577	-80.96917	I	2605	N/A	N/A	w/ Calf	N/A
240	03	12	2007	1634	NEWS20070312	31.25577	-80.96917	J	2007 Calf of 2605	N/A	N/A	Calf	N/A
241	03	13	2007	0943	NEWS20070312	30.93020	-81.08980	A	SE07CT27	1007	NRW07486		0.21
242	03	13	2007	0943	NEWS20070312	30.93020	-81.08980	B	3442	1007	NRW07486		0.21
243	03	13	2007	0943	NEWS20070312	30.93020	-81.08980	C	SE07BK11	1007	NRW07486		0.21
244	03	13	2007	0943	NEWS20070312	30.93020	-81.08980	D	3139	1007	NRW07486		0.21
245	03	13	2007	0943	NEWS20070312	30.93020	-81.08980	E	SE07CT17	1007	NRW07486		0.21
246	03	13	2007	1018	NEWS20070312	30.98235	-81.12345	F	3360 (BK23)	1029	NRW07488	w/ Calf	0.07
247	03	13	2007	1018	NEWS20070312	30.98235	-81.12345	G	2007 Calf of 3360 (BK23)	1029	NRW07488	Calf	0.07
248	03	13	2007	1201	NEWS20070312	31.20065	-80.72927	H	1911	1210	NRW07492	w/ Calf	N/A

Whale Number	Month	Day	Year	Time (Local)	Survey Name	Latitude	Longitude	RIWH Letter	EGNO	Time of Report (Local)	NRW Number	Comments	Sighting Distance (mm)
249	03	13	2007	1201	NEWS20070312	31.20065	-80.72927	I	2007 Calf of 1911	1210	NRW07492	Calf	N/A
250	03	13	2007	1254	NEWS20070312	31.33973	-80.93382	J	2605	1303	NRW07497	w/ Calf	0.39
251	03	13	2007	1254	NEWS20070312	31.33973	-80.93382	K	2007 Calf of 2605	1303	NRW07497	Calf / No Photos	0.39
252	03	13	2007	1328	NEWS20070312	31.37072	-80.99467	L	2746	1353	NRW07498	w/ Calf	0.80
253	03	13	2007	1328	NEWS20070312	31.37072	-80.99467	M	2007 Calf of 2746	1353	NRW07498	Calf	0.80
254	03	19	2007	1026	NEWS20070319	31.01495	-81.15598	A	1701	1040	NRW07502	w/ Calf	0.70
255	03	19	2007	1026	NEWS20070319	31.01495	-81.15598	B	2007 Calf of 1701	1040	NRW07502	Calf / No Photos	0.70
256	03	20	2007	1028	NEWS20070320	31.03750	-80.95473	A	1911	1042	NRW07507	w/ Calf	0.24
257	03	20	2007	1028	NEWS20070320	31.03750	-80.95473	B	2007 Calf of 1911	1042	NRW07507	Calf	0.24
258	03	20	2007	1219	NEWS20070320	31.39923	-80.89358	C	2605	1237	NRW07510	w/ Calf	N/A
259	03	20	2007	1219	NEWS20070320	31.39923	-80.89358	D	2007 Calf of 2605	1237	NRW07510	Calf	N/A
260	03	21	2007	1040	NEWS20070321	30.98945	-81.02463	A	1911	1100	NRW07514	w/ Calf	0.36
261	03	21	2007	1040	NEWS20070321	30.98945	-81.02463	B	2007 Calf of 1911	1100	NRW07514	Calf	0.36
262	03	23	2007	1130	NEWS20070323	31.03708	-81.15007	A	1701	1140	NRW07518	w/ Calf	0.18
263	03	23	2007	1130	NEWS20070323	31.03708	-81.15007	B	2007 Calf of 1701	1140	NRW07518	Calf	0.18
264	03	24	2007	0932	NEWS20070324	31.19878	-81.16787	A	2611	0943	NRW07519	w/ Calf	0.90
265	03	24	2007	0932	NEWS20070324	31.19878	-81.16787	B	2007 Calf of 2611	0943	NRW07519	Calf	0.90
266	03	27	2007	1148	NEWS20070327	31.22590	-80.89217	A	3360 (BK23)	1159	NRW07520	w/ Calf	0.47
267	03	27	2007	1148	NEWS20070327	31.22590	-80.89217	B	2007 Calf of 3360 (BK23)	1159	NRW07520	Calf	0.47
268	03	27	2007	1201	NEWS20070327	31.18443	-80.74775	C	1317	1222	NRW07521		0.11
269	03	27	2007	1201	NEWS20070327	31.18443	-80.74775	D	3193	1222	NRW07521		0.11
270	03	27	2007	1201	NEWS20070327	31.18443	-80.74775	E	SE07CT32	1222	NRW07521		0.11
271	03	27	2007	1201	NEWS20070327	31.18443	-80.74775	F	1712	1222	NRW07521		0.11