Aerial Surveys for Ship Strike Mitigation and Other Field Observations of North Atlantic Right Whales (*Eubalaena glacialis*) off the East Coast of Florida December 2006-March 2007

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TABLE OF CONTENTS

INTRODUCTION 3

METHODS 5

AERIAL SURVEYS 5
DATA COLLECTION 5
WHALE/SHIP INTERACTION OR "CLOSE CALL" DOCUMENTATION 8

RESULTS 9

AERIAL SURVEY 9
WHALE/SHIP INTERACTION OR "CLOSE CALL" DOCUMENTATION 9

EVENTS 10

DISENTANGLEMENT RESPONSES 10
STRANDING RESPONSES 10
OTHER 11

DISCUSSION 12

WORKS CITED 14

ACKNOWLEDGEMENTS 16

LIST OF FIGURES

FIGURE 1: FWRI AERIAL SURVEY TRACK LINES MAP 17
FIGURE 2: FWRI SEWS SURVEY TRACK LINES EFFORT MAP 18
FIGURE 3: FWRI AERIAL SURVEY RIGHT WHALE SIGHTINGS MAP 19
FIGURE 4: FWRI AERIAL SURVEY MONTHLY RIGHT WHALE SIGHTINGS MAP 20
FIGURE 5: SEUS WHALE/VESSEL INTERACTIONS MAP 21
FIGURE 6: FWRI OPORTUNISTIC LAND-BASED RIGHT WHALE SIGHTINGS MAP 22

LIST OF TABLES

TABLE 1: FWRI SURVEY WAYPOINTS AND NAUTICAL MILEAGE 23
TABLE 2: FWRI AERIAL SURVEY ACTIVITIES 24
TABLE 3: FWRI AERIAL SURVEY SIGHTINGS 28
TABLE 4: FWRI HUMPBACK WHALE SIGHTINGS 32
TABLE 5: FWRI WHALE/VESSEL INTERACTIONS 33
TABLE 6: FWRI OPORTUNISTIC LAND-BASED SIGHTINGS 35

INTRODUCTION

The North Atlantic right whale (*Eubalaena glacialis*) is among the rarest of all large whales with an estimated population of 350 individuals. Hunted to near extinction, the population has shown little or no signs of recovery since receiving international protection from commercial whaling in 1935 and federal protection under the Endangered Species Conservation Act in 1970. This lack of recovery is principally attributed to deaths from human related activities, mainly ship collisions and fishing gear entanglements (NMFS, 2005). Since the completion of the first Recovery Plan in 1991 efforts to protect right whales have increased substantially to include Regional Recovery Plan Implementation Teams and Large Whale Take Reduction Teams (TRT). NMFS, in collaboration with the Southeastern U.S. Right Whale Recovery Plan Implementation Team (SEIT) and TRT, is continually assessing current right whale regulations and developing new recommendations and management techniques (NMFS, 2005). Should human related fatalities continue at the current pace some population models predict the extinction of right whales in the relatively near future (Fujiwara and Caswell, 2001).

The southeast U.S. (SEUS) is one of only five "high use" areas identified for North Atlantic right whales (NMFS, 2005) and the coastal waters of Georgia and northeastern Florida are the only known calving grounds (Kraus et al., 1993). Calving occurs from December through March (Kraus et al., 1986) and the SEUS wintering population consists mostly of mom/calf pairs, juveniles, and a few adult males and non-calving adult females. In 1994 NMFS designated the waters from 31°15N to 30°15N from the shoreline out to 15 nm and the waters from 30°15N to 28°00N from the shoreline out to five nm as the SEUS Right Whale Critical Habitat. In addition, NMFS published the Right Whale Minimum Approach Regulation (1997), prohibiting all approaches (vessel, aircraft, or other means) within 500 yards of any right whale (NMFS, 2005).

Approximately 35% of confirmed North Atlantic right whale deaths between 1970 and 1999 were caused by ship strike (Knowlton and Kraus, 2001). Only a small number of whales in the Catalog of Identified Right Whales have scars from ship propellers; however, a large number of carcasses have ship propeller wounds (Kraus 1990). According to Kraus (1990) this indicates that currently a high proportion of collisions between whales and vessels are fatal. Pace and Silber (2005) reported the probability of serious injury or death increases rapidly with increasing vessel speed and most severe and lethal injuries caused by ship strikes occur when vessels are traveling at speeds greater than or equal to 14 knots (Laist et al., 2001, Jensen and Silber, 2003). Right whale mom/calf pairs in the SEUS are particularly susceptible to ship collisions because they spend a large amount of time near the surface and they are limited by the calf's ability to dive and maneuver through the water. There are three major entrance channels within the SEUS Critical Habitat; the Brunswick channel, the St. Mary's River channel, and the St. Johns River channel. The amount of vessel traffic in the SEUS increased between the 2005-2006 and 2006-2007 calving seasons (Jacksonville Port Authority). According to the Jacksonville Port Authority, the number of cargo vessels increased by approximately 9% and the cargo tonnage at JAXPORT increased by approximately 3% from FY 2005 to FY 2006. Compared to the changes that occurred between FY 2004 and FY 2005 when cargo vessel traffic increased approximately 3% and cargo tonnage increases approximately 9%, during FY 2006 the cargo tonnage was spread out over an increased number of vessels entering JAXPORT. A Mandatory Ship Reporting System (MSRS) was federally implemented in the SEUS in 1999. The MSRS requires all commercial vessels 300 gross tons or greater to report into a shore-based station when entering designated right whale habitat. In return, the vessels are provided with the latest

right whale sighting locations and information on how to avoid collisions with right whales (NMFS, 2005). In the SEUS the MSRS is active from November 15th to April 16th. Although NOAA has recommended large vessels decrease speed within the SEUS Critical Habitat and MSRS, the average reported speed of vessels entering the MSRS was 15.72 knots (Ward-Geiger et al., 2005). The National Marine Fisheries Service (NMFS) has recommended a seasonal speed restriction of 10 knots for all vessels 65 ft in length or greater traveling within specific locations along the U.S. East Coast including the SEUS Critical Habitat and MSRS. In addition, NMFS proposed the establishment of temporary "dynamic management areas" to protect right aggregations outside the designated management areas and seasons (Federal Register, Vol. 71 No 122 June 26, 2006).

During the 1993-1994 calving season several agencies, including the Florida Fish and Wildlife Conservation Commission (FWC), began an extensive aerial survey network known as the Early Warning System (EWS) developed to reduce or eliminate ship strikes (NMFS, 2005). The EWS quickly provided valuable right whale sighting information to the U.S. Navy, U.S. Coast Guard (USCG), U.S. Army Corp of Engineers (ACOE), harbor pilots, and port authorities. The EWS was improved with the dissemination of information to the general public through USCG Broadcast Notices to Mariners and broadcasts over NOAA Weather Radio. With the incorporation of the U.S. Navy's Fleet Area Control and Surveillance Facility Jacksonville (FACSFACJAX) as the central reporting agency for all aerial survey aircraft, right whale sighting information was processed and transmitted in near real time. Presently, aerial surveys remain the best available method to alert mariners about the presence of right whales in the SEUS Critical Habitat in order to reduce the risk of ship collisions with whales (NMFS, 2005). FWC's Fish and Wildlife Research Institute (FWRI) has been conducting right whale aerial surveys in the SEUS with varied coverage and effort since the late 1980's. The current three plane EWS survey format was implemented during the 2002-2003 calving season. The FWRI aerial survey provides coverage of the southern portion of the EWS, SEUS Critical Habitat, and MSRS. Although ship strike mitigation remains the focal objective, the EWS surveys have evolved to collect extensive photo documentation of right whales; monitor vessel activity; and provide assistance during critical right whale events (such as disentanglements and strandings). The photographic data collected in the SEUS allows researchers to assess demographics and survival estimates of right whales. In addition, FWRI in cooperation with NMFS and other state and local agencies updates and develops new brochures, training videos, and publications to educate shipping industries and the general public about right whale conservation efforts.

This aim of this report is to summarize FWRI aerial survey data and other field observations for the 2006-2007 calving season. Funding for the FWRI aerial surveys was provided by NOAA Fisheries.

METHODS

Aerial Surveys

FWRI conducted right whale aerial surveys between December 1, 2006 and March 31, 2007. The FWRI survey or Southern Early Warning System (SEWS) was designated as FWS555 on the EWS pager network and as FWRI-A for data and photo submission purposes. Surveys were flown seven days a week (weather permitting) during the time period of December 1, 2006 through March 31, 2007. The survey configuration remained the same as the previous two seasons (2004-2005/2005-2006). The FWRI survey consisted of ten east/west track lines designated as lines #25-34 within the EWS framework (Table 1). Flown from north to south (weather permitting), the track lines covered the southern portion of the EWS, SEUS Critical Habitat, and MSRS zone from Ponte Vedra Beach (30°14.0N) to Crescent Beach (29°47.0N) from approximately 0.5 nm east of the shoreline out to 080°47.0W (Figure 1).

The survey aircraft were twin engine Cessna 337 (N337CH, N1353L, N1275M) operated and maintained by Orion Aviation under provisions of FAA 14 CFR Part 135. In accordance with FAA 14 CFR Part 135 and additional NOAA requirements the aircraft were equipped with IFR certification, yoke mounted GPS unit, Emergency Locator Transmitter (ELT), 2-B:C rating fire extinguisher, primary and secondary VHF radios, marine band radio with linkage to intercom system, DC power for observer tablet PC, additional GPS with direct linkage to the tablet PC, and extended over water operations emergency equipment as listed in 14 CFR Part 135.167 including a registered 406 MHz emergency position indicator radio beacon (EPIRB) and an inflatable life raft. Aerial observers were required to wear a Nomex flight suit and an aviation style personal flotation device (PFD) equipped with a safety knife, signaling mirror, high-pitch safety whistle, strobe light, streamer, and a McMurdo Fastfind Plus 406 MHz personal EPIRB with built in GPS receiver. Surveys were flown under visual flight rules (VFR) conditions and a flight plan was filed with the FAA for each day of survey. Aircraft took off at 0900 hrs (weather dependent) and were on the ground before sunset. In addition, flights were required not to extend beyond 45 minutes reserve fuel. Environmental conditions necessary to conduct a survey included visibility greater than three nautical miles (nm), winds less than seventeen knots, sea state of Beaufort five or less, and a minimum ceiling of 1200 ft over the survey area and airport. Although surveys can be conducted in a Beaufort 4-5, Beaufort 3 or less provided more favorable sighting conditions.

Survey protocols are outlined in Scott and Gilbert (1982) for the Cetacean and Turtle Assessment Program (CeTAP 1982). The aircraft flew at a target speed of 100 kts and a height of 1000 ft. In order to take into account aircraft fluctuations a speed threshold of 200 kts and an allowable height range of 800 ft-1200 ft were set. Survey personnel included a pilot, co-pilot, and two observers. One observer sat on each side of the aircraft and visually scanned the survey area out to approximately 2 nm. Typically the observer seated in the left rear seat recorded the data and the observer seated in the right rear seat conducted photo-identification during a sighting.

Data Collection

The survey crew used a Fujitsu ST5000 tablet PC to collect electronic data while in the aircraft. The tablet PC was small enough to comfortably sit in an observer's lap without obscuring his/her field of vision or presenting a safety hazard. Survey data were recorded at 30

second time intervals in Logger 2000, a computer-based data logging program, which automatically retrieved locations, headings, and altitudes from the GPS and stored them in an Access database. The use of the tablet PC and several new drop-down options in Logger 2000 allowed for swift data entry and minimized the time spent looking away from the water. However, if the GPS or computer malfunctions, locations, headings, and altitudes were hand recorded at intervals of 5 minutes on hard copy datasheets and later entered into an Excel Spreadsheet.

Environmental data entered into the database consisted of weather, visibility, cloud cover, Beaufort sea state, and the severity of the glare on both sides of the plane. Environmental data were updated throughout the survey when conditions changed. Large whale sighting observations included the initial and final sighting locations, number of whales per sighting, number of calves per sighting, heading, behaviors, observer reliability (measure of certainty of whale identification,) and confidence (measure of certainty of number of whales observed.) Observed vessel information included type of vessel, location, heading, length, and speed. The vessel location was mainly recorded by flying directly over the vessel to obtain a GPS location. If the aircraft was unable to fly directly over a vessel the distance was estimated visually by the observers. The heading, length, and speed of the vessels were verified by the use of an onboard class B AIS (Automatic Identification System) transponder. Only vessels 300 ft or larger sighted within 2 nm of the track lines or any vessel involved in a whale/vessel interaction were recorded.

Access macros developed by FWC staff were used to scan data for errors and compliance with the guidelines set by the North Atlantic Right Whale Consortium Database (NARWD) Manager. The data were then exported to Excel format for final submission to the NARWD Manager. In addition to the electronic data collected, hard copy data sheets were compiled. Cover sheet information included the survey crew, flight hours, nautical miles flown, environmental data, and summary of the day's sightings and events. Whale sighting sheets included a drawing of the callosity patterns of whale(s) seen, initial and final sighting times and locations, behaviors, and ancillary photography information (such as images taken.)

Aerial teams in the field relayed the date, final sighting time and position, number of whales, number of calves, and heading to FACSFACJAX for broadcast on the EWS pager network. The EWS pager network facilitated the near real time transmission of right whale sighting information via an alphanumeric pager system to the U.S. Navy, USCG NAVTEX, harbor pilots, aerial survey teams, NOAA, state agencies, and volunteer networks. The FWRI aerial survey team used satellite phone or marine band radio to communicate with the ground contact in order to relay sighting information to FACSFACJAX. We found that using a ground contact to relay the information was more effective than calling from the plane for a number of reasons including time constraints, aircraft noise, and satellite phone limitations and expense. The FWRI ground contact was responsible for reporting sighting information to FACSFACJAX and following up with any reporting errors, entering FWRI sightings into the MSRS database within an hour of each sighting, maintaining a near real time knowledge of the position and maneuvers of the aircraft during survey, and acting as a liaison between ground crews and the aircraft during entanglement, stranding, or other events.

FWRI prepared and submitted weekly performance reports to NOAA Fisheries. The weekly reports consisted of two documents, a survey activities report and a right whale sightings report. The survey activities report included: survey date, survey file name, completed track lines, aircraft Hobbs time elapsed, total track line nautical miles flown, total track line nautical

miles flown in sea state ≤ 3, number of whales seen, and any other pertinent right whale related information. The right whale sightings report included: survey date, time (local), survey name, latitude (in decimal degrees), longitude (in decimal degrees), RIWH letter (from photography datasheets), NARWC Id number (as this information becomes available from the NARWC manager), agency notified (i.e., FACSFACJAX) and time, NRW number and comments (to include information such as w/ calf or calf).

Photo-identification

Individual right whales were identified by the location, shape, and topography of the callosities that occur along the rostrum (Crone and Kraus 1990). In addition, Hamilton and Martin (1999) note that callosities on the upper margins of the lower jaw (known as lip callosities), behind the blowholes, on the chin, along the mandible, and above the eye are key marks to help identify individual whales. White scars from past entanglements, vessel strikes, and other causes rarely fade over time and become unique characteristics (Hamilton and Martin 1999). Crenations along the lower lip (also called lip ridges) can be distinctive and were particularly useful in the identification of calves because the callosity patterns of calves are not fully developed until they are 7-12 months old (Hamilton and Martin 1999).

During the 2006-2007 calving season, FWRI aerial photographs were taken with a Canon EOS 20D Digital SLR camera equipped with a Canon EF 100-400mm f/4.5-5.6L IS USM lens. A Canon EOS D60 Digital SLR camera was utilized as a back up camera. Digital format cameras allowed for expeditious image review in the aircraft and also allowed FWRI to easily share image files with the New England Aquarium, NOAA Fisheries, Provincetown Center for Coastal Studies (PCCS) disentanglement team, and other collaborators throughout the calving season.

The observer on the right side of the aircraft photographed the whale(s) through the opened right rear window. Photographs were taken on the TV function with a shutter speed of 1000 (shutter speed decreased in low light). Whenever feasible, priority was given to obtain a full top view head shot of the whale(s) in order to document a full set of callosities. Once the callosities were fully recorded, photographs of the body and fluke were attempted in order to document any scars and the overall body condition of the whale. A twenty minute time limit was set to photograph small groups of whales in order to ensure adequate time to finish the survey. Larger (less common) groups of whales were allotted more time as long as it did not jeopardize the completion of the survey.

FWRI created and maintained a website that allowed aerial survey teams to view images and preliminary whale identifications during the 2005-2006 season. During the 2006-2007 season the website was further developed to enhance communication among aerial survey teams and to include near real time updates for biopsy team members. The FWRI aerial survey team reviewed all new FWRI images throughout the season and made preliminary matches to the catalog of identified right whales. At the end of the season photographs and sighting data were submitted to the New England Aquarium for final identification and inclusion in the North Atlantic Right Whale Identification Database – the central repository for archiving and maintaining images and sighting data on right whales.

Whale/Vessel Interaction or "Close Call" Documentation

Prior to the beginning of the 2005-2006 aerial survey season, FWRI staff in collaboration with all aerial survey teams and NOAA law enforcement, created a standardized whale/vessel interaction form. The enhanced forms standardized the data collection of all whale/vessel interactions among various teams and facilitated a detailed account of these incidents. During the 2006-2007 calving season this updated form was used by all aerial survey teams in the SEUS to record "close calls" and 500 yard rule violations. All whale/vessel interaction forms were forwarded to NOAA Fisheries and FWRI where they were combined into one database and mapped.

RESULTS

Aerial Survey

FWRI aerial surveys began on December 2, 2006 and the last survey was conducted on March 31, 2007. The FWRI team flew 77 surveys of varying coverage out of an available 121 days (Table 2). Fifty full SEWS surveys (281.6nm each), twenty partial SEWS surveys, and seven two plane contingency plan surveys were completed. Five of the seven two plane contingency plan surveys were also partial SEWS surveys. Thus, the FWRI team flew at least a portion of the SEWS survey 62% of the available days (Figure 2). The majority of partial surveys resulted from poor weather conditions; however, a few surveys were shortened because of aircraft mechanical issues, two plane contingency plans, and airspace conflicts with USCG training box 27C. Eleven opportunistic coastal surveys of varying distances were also flown in conjunction with the SEWS survey. Eighty-nine percent of FWRI surveys were flown during favorable sea state conditions (Beaufort sea state 3 or less).

The first whale sighting in the SEWS occurred on December 16, 2006 and the last was on March 20, 2007. The FWRI team had 82 sightings consisting of 208 whales (Table 3). Of the 82 sightings, 40 were mom/calf pairs, five were mom/yearling pairs, 10 were single adults, 12 were pairs of adults, and 15 were groups of three or more whales (Figures 3 and 4). Sighting distance from the trackline ranged from 0.02nm to 4.30nm with an average of 0.81nm. The greatest number of sightings the FWRI team had in a single day was four (five occurrences between February 13th & February 27th) and the largest number of whales sighted in a single day was 22 (February 15th.) The FWRI survey team had 10 sightings of 19 whales in December, 26 sightings of 53 whales in January, 41 sightings of 123 whales in February, and five sightings of 13 whales in March. The FWRI aerial survey team sighted 13 of the 18 females observed with calves during the 2006-2007 season (either pregnant or with a calf). Preliminary photo analysis indicates FWRI documented 63 individual right whales (excluding calves) of which 14 were unique to the FWRI survey. In addition, the FWRI survey team documented eight humpback whales (Table 4), 147 leatherback turtles, and one whale shark.

Whale/Vessel Interaction or "Close Call" Documentation

During the 2006-2007 season, FWRI documented 17 whale/vessel interactions involving nine groups of whales (Table 5). One helicopter and two vessel interactions were documented from land, three vessels were documented from land and air, and one interaction was documented by vessel. The remaining interactions were documented by air. The types of vessels involved consisted of six commercial fishing, nine recreational, one USCG cutter, and one tug and barge (Figure 5). The groups of whales involved consisted of six mom/calf pairs (milling, nursing, traveling, or resting), one surface active groups (SAG), one pair belly to belly, and a single adult traveling. Whales were observed diving as the vessel approached during two interactions involving a recreational vessel and a helicopter. One case involved a mom/calf pair (vessel) and the second was a single adult (helicopter). Both of the interactions occurred at a distance of 25m or less.

EVENTS

Disentanglement Responses

Intermatch Code: BK01SEUS06

On January 15, 2007 the FWRI aerial survey team was alerted to the presence of entangled right whale, BK01SEUS06, offshore Brunswick, GA by the NEA aerial survey team. The NEA survey team advised they would be responding to the location of the entangled whale to relieve the WT-GADNR survey team. Due to diminishing daylight the NEA survey team requested back up from the FWRI survey team in order to finish surveying the St. Johns River entrance. The FWRI survey team responded and was able to complete all four river entrance survey lines. GADNR first responders were able to remove some trailing line from the whale and attach a telemetry buoy on January 15, 2007. The following day FWRI staff joined with GADNR and NOAA Fisheries staff to further document and assess the entanglement by vessel. Several attempts to cut the gear free were unsuccessful. Further documentation was obtained on January 24, 2007 in Onslow Bay, NC. At this time additional trailing gear and the telemetry buoy were removed and the status of this entanglement was changed to "monitor". On April 26, 2007 BK01SEUS06 was sighted near the Great South Channel and appeared to be gear free (confirmation on identity from NEA is still pending.)

Eg# 3346 "Kingfisher"

Since his birth in 2003, Eg# 3346 "Kingfisher" has been sighted each winter in the SEUS calving ground. As a yearling, Kingfisher was the target of a large scale disentanglement effort during the 2003-2004 calving season and since then has been observed with a small portion of remaining gear wrapped around his right flipper. The FWRI aerial survey team was first to document Kingfisher in the SEUS on January 4, 2007 and went on to sight him six more times throughout the 2006-2007 calving season. On February 27, 2007 FWRI staff responded by vessel to further document Kingfisher's health status and entanglement. All sighting data and photographs were forwarded to NOAA Fisheries, PCCS, and NEA. Analysis of the photographs revealed Kingfisher to be in good health and his entanglement status continues to be classified by PCCS as "monitor."

Stranding Responses

GA2006025

On December 30, 2007 the WT-GADNR survey team reported a dead male juvenile right whale floating off Jekyll Island, GA. FWRI staff helped coordinate the towing and eventual landing of the carcass on December 31, 2007 at Fort Clinch State Park in Fernandina Beach, FL. The same day FWRI staff participated in the necropsy. The whale was identified as the 2005 calf of Eg# 1408 and was assigned the catalog ID# 3508. A series of 20 propeller cuts extending from the tip of the rostrum to the urogenital aperture were observed on the right side of the carcass. Cause of death was determined to be vessel collision and FWRI staff are active in the ongoing wound analysis of the observed propeller cutes.

EgNEFL0704

On January 25, 2007 FWRI staff received a report of a dead whale floating close to shore off Ponte Vedra Beach, FL from FWC Law Enforcement dispatch. FWC dispatch had originally received the report from a crab fisherman in the area. FWRI staff responded to the location and coordinated with the NEA aerial survey team to verify the size and species of the whale. The

carcass was identified as a male right whale calf. FWRI staff beach-launched an inflatable vessel to photo document the whale and secure a tow line. A USCG vessel towed the carcass to the Mayport boat ramp where FWRI staff loaded the carcass into a manatee carcass salvage trailer and transported it to the University of Florida. On January 26, 2007 FWRI staff helped coordinate and participated in the necropsy. Preliminary results from the necropsy suggest the calf died of complications associated with birth.

Other

Opportunistic Sightings and Verifications by Land

In addition to the aerial survey sightings, FWRI staff documented 17 right whale sightings from land during the 2006-2007 calving season (Table 6). These sightings occurred opportunistically as well as in collaboration with efforts of the Marine Resource Council (MRC) to respond to sightings generated by the public. The first sighting occurred on December 27, 2006 and the sightings continued through March 20, 2007. Thirteen of the sightings were of mom/calf pairs, three were single adults, and one was a surface active group (SAG) of at least 10 whales (Figure 6). FWRI staff also observed three whale/vessel interactions from land including an aggressive close approach from a helicopter. Responding to land based sightings gave FWRI staff a valuable opportunity to interact with and offer educational information to home owners and beachgoers in Ponte Vedra Beach, FL.

FWC Coastal Reconnaissance Flight

Beginning on February 5, 2007 the MRC right whale hotline began to receive an increased number of right whale sightings from the area south of Port Canaveral. Without funding for the FWRI coastal aerial survey the only reliable way to verify these sightings is by land. Although species identification can be made from land even when the whale(s) are up to approximately 2 miles offshore, the ability to identify individual right whales by photograph decreases once the whales move just a few hundred yards offshore. In response to known vessel traffic in the area and in an effort to photograph and identify the whales present, FWRI staff in collaboration with FWC Law Enforcement planned to fly a coastal survey in a Cessna 182 on Saturday February 10, 2007. Two transect lines, one and two nautical miles offshore, were flown from St. Augustine, FL to Stuart, FL. The survey resulted in two right whale sightings (one mom/calf pair and a single adult) north of Port Canaveral and one humpback whale sighting south of Port Canaveral. Sighting conditions during the survey were not always optimal with Beaufort sea state reaching a four in some locations.

Whale Shark

On March 28, 2007 at 13:22(L) the FWRI aerial survey team photographed a 20-25ft whale shark approximately 16 miles offshore Crescent Beach, FL at position 29.78383N and 81.03911W. According to the NARWD Manager, only a handful of whale sharks have been documented during the EWS surveys and the last recorded sighting was in February 1998.

DISCUSSION and RECOMMENDATIONS

Together, the FWRI aerial survey team and land based FWRI staff documented 99 sightings consisting of 238 whales (not unique individuals). Although final analysis of the photographs is not complete, it is clear that a large number of juvenile whales were present in the SEUS this season as was the case for the past two seasons. This increase of juvenile whales is reflective of the relatively high number of calves born in the SEUS in recent years. Often, these juveniles were observed in surface active groups (SAGs) spending large amounts of time at or near the surface of the water. This is important because whales participating in SAGs may be less aware of approaching vessels. Right whale calves and juveniles accounted for 50% of the confirmed ship strike deaths between 1970 and 1999 (Knowlton and Kraus, 2001). More juvenile whales in the SEUS combined with the increased vessel traffic may lead to higher incidences of whale/vessel interactions. Measures should be taken to not only minimize the occurrence of whale/vessel interactions, but also to reduce the severity of the interactions that do occur.

A NOAA Fisheries brochure entitled "Help Prevent Entanglement," recently reprinted with assistance from FWRI, contains guidelines for recreational fishermen on how to operate vessels around marine mammals. Although this brochure is not wholly focused on right whales, it contains information on marine mammal laws, harassment, and the 500 yard no approach rule for right whales and will continue to be a good resource for recreational fishermen. The development of a right whale specific pamphlet containing general information about whales in the SEUS would provide another way to educate the general public. At a minimum these pamphlets could be handed out to interested bystanders at necropsy/stranding events and when whales are sighted nearshore generating crowds of people at the beach. During the 2006-2007 calving season FWRI staff documented 17 right whale sightings from land in the Ponte Vedra Beach, FL area. Several other reports of whales called in by the general public went undocumented because the person(s) reporting the whales waited until after the whales left to call FWC or the MRC right whale hotline. There is a need for educational material that would describe how to identify right whales, what to do and what not to do when you see a right whale from the beach, and how to properly report sightings. The distribution of this information to homeowners and renters in the Ponte Vedra Beach, FL area would increase land based sighting reports as well as possibly decrease kayaker and surfer interactions with whales in the area. Responding to these land based sightings is also a good way to educate beachgoers in person and generate local support for right whale conservation.

The partnerships created by participants of the EWS network enable the near real time transmission of right whale sighting information from aerial survey aircraft directly to the vessels traversing through the SEUS Critical Habitat and MSRS zone. Though aerial surveys are an efficient tool for ship strike mitigation while underway, they are limited by weather conditions and available daylight and therefore cannot provide information 24/7. In order to improve ship strike mitigation in the absence of aerial survey effort, vessels must be willing to adhere to recommended NOAA Fisheries guidelines by reducing speed, posting lookouts, and avoiding locations where right whales have been reported. During the 2006-2007 calving season the FWRI aerial survey team installed a class B Automatic Identification System (AIS) transponder in the survey aircraft. The transponder in conjunction with Titan Voyager AIS software allowed FWRI to more accurately record large vessel activity in the SEWS. Because the AIS transponder relies on line-of-sight communication via VHF antennae, testing the equipment prior to flight was problematic. Without any vessels in range of a land based antennae it was difficult to

configure and understand the software. Despite these limitations the software's vessel real time viewer operated flawlessly on our tablet PC while in flight. Before the upcoming 2007-2008 season we will strive to gain a more in depth knowledge of the software in order to expand our capabilities.

For the past four calving seasons new safety requirements implemented by NOAA Fisheries have been functioning well by providing aerial observers and pilots with reliable equipment and essential safety training programs. During the 2006-2007 season FWRI and Orion Aviation added a flight following system to the FWRI survey plane. The flight following system allowed the FWRI ground contact to monitor the survey plane's location and altitude in near real time. This simple new safety feature worked exceptionally well and we plan to continue using flight following in the upcoming 2007-2008 season. Safety technology and training for the EWS surveys should continually be assessed by the aerial observers and NOAA Fisheries and updated with the most current information available.

An FWRI image of a right whale mom/calf pair appeared on the cover of the April 2007 issue of the Navy's *All Hands* magazine. The magazine article highlighted FACSFACJAX and the exceptional partnership between all the members of the EWS network. FWRI continues to be a growing contributor to right whale conservation efforts in Florida and the entire SEUS. The FWRI aerial surveys have documented the abundance and distribution of right whales in the Jacksonville channel approach and all along Florida's east coast. Although a lack of funding has recently limited the range of FWRI surveys it is clear a significant number of right whales, including mom/calf pairs, utilize the nearshore Florida waters south of Crescent Beach, FL and these waters should continue to be monitored in any available capacity. FWRI has been building a diverse and strong team of disentanglement and stranding responders as well as a cache of essential disentanglement and stranding equipment. Over the past few calving seasons FWRI has had the opportunity to develop and sharpen the skills necessary to handle large scale right whale disentanglement and stranding events. In addition, FWRI staff are working with GADNR staff to establish a cooperative biopsy effort in the SEUS. Continued partnership between NOAA Fisheries and FWRI will allow the growth of programs such as these, improve protective measures for right whales in the SEUS, and assist in the continued survival of the North Atlantic right whale.

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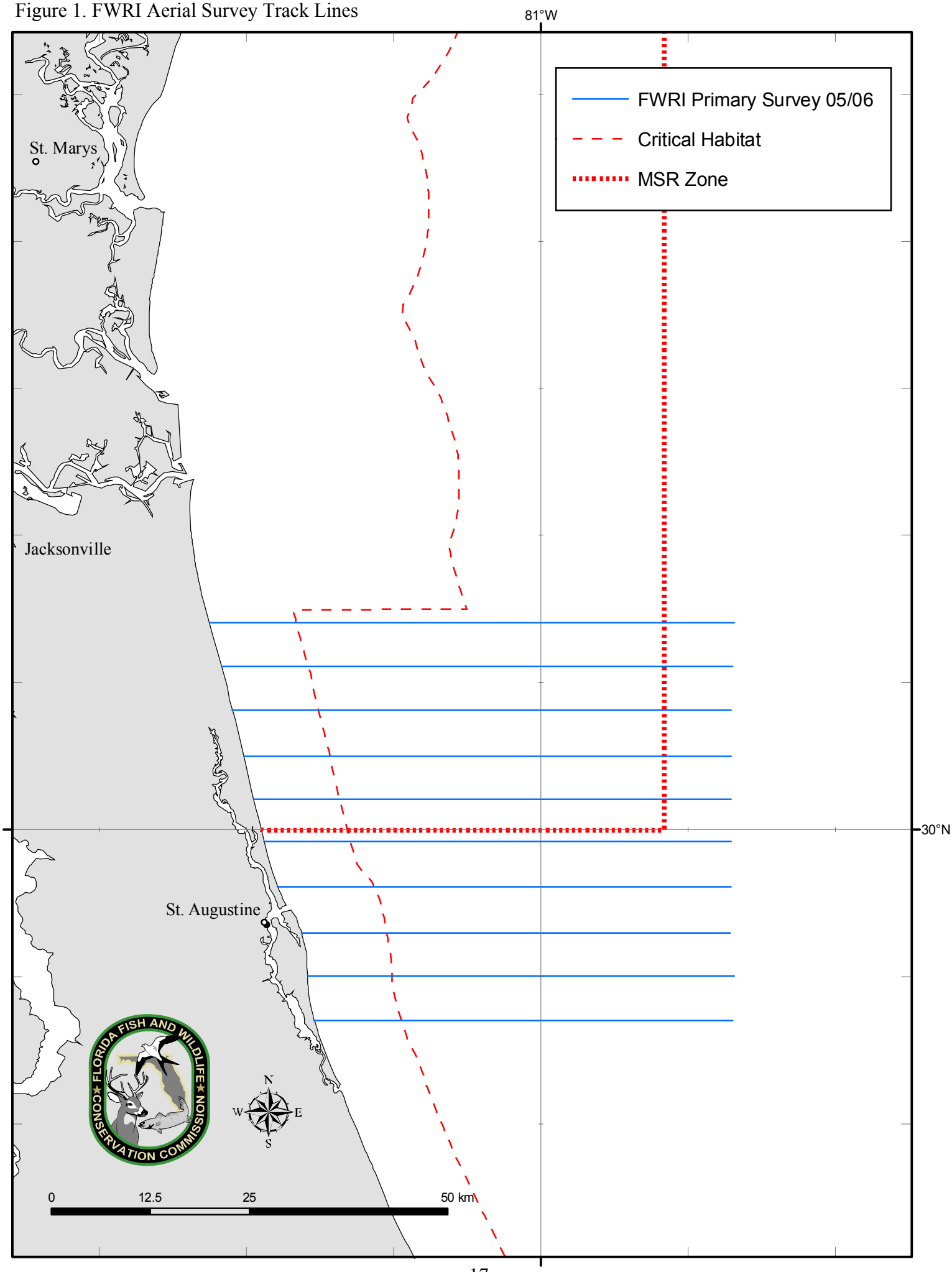
Figure 1. FWRI Aerial Survey Track Lines



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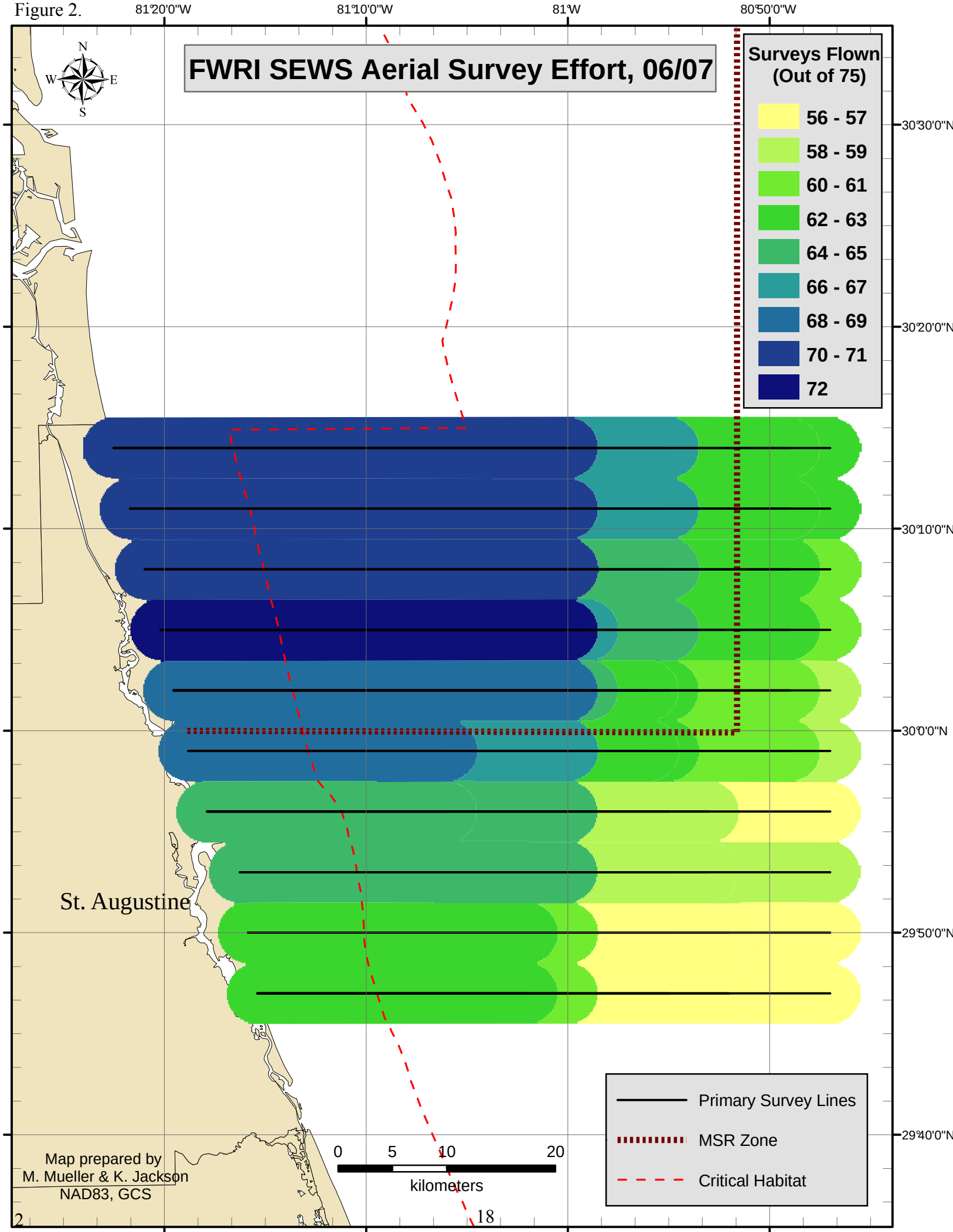
FWRI SEWS Aerial Survey Effort, 06/07
Surveys Flown (Out of 75)
56 - 57
58 - 59
60 - 61
62 - 63
64 - 65
66 - 67
68 - 69
70 - 71
72
81°20'0"W
81°10'0"W
81°W
80°50'0"W
30°30'0"N
30°20'0"N
30°10'0"N
30°0'0"N
29°50'0"N
29°40'0"N
N
S
E
W
St. Augustine
Primary Survey Lines
MSR Zone
Critical Habitat
0
5
10
20
kilometers
Map prepared by
M. Mueller & K. Jackson
NAD83, GCS

Figure 3.

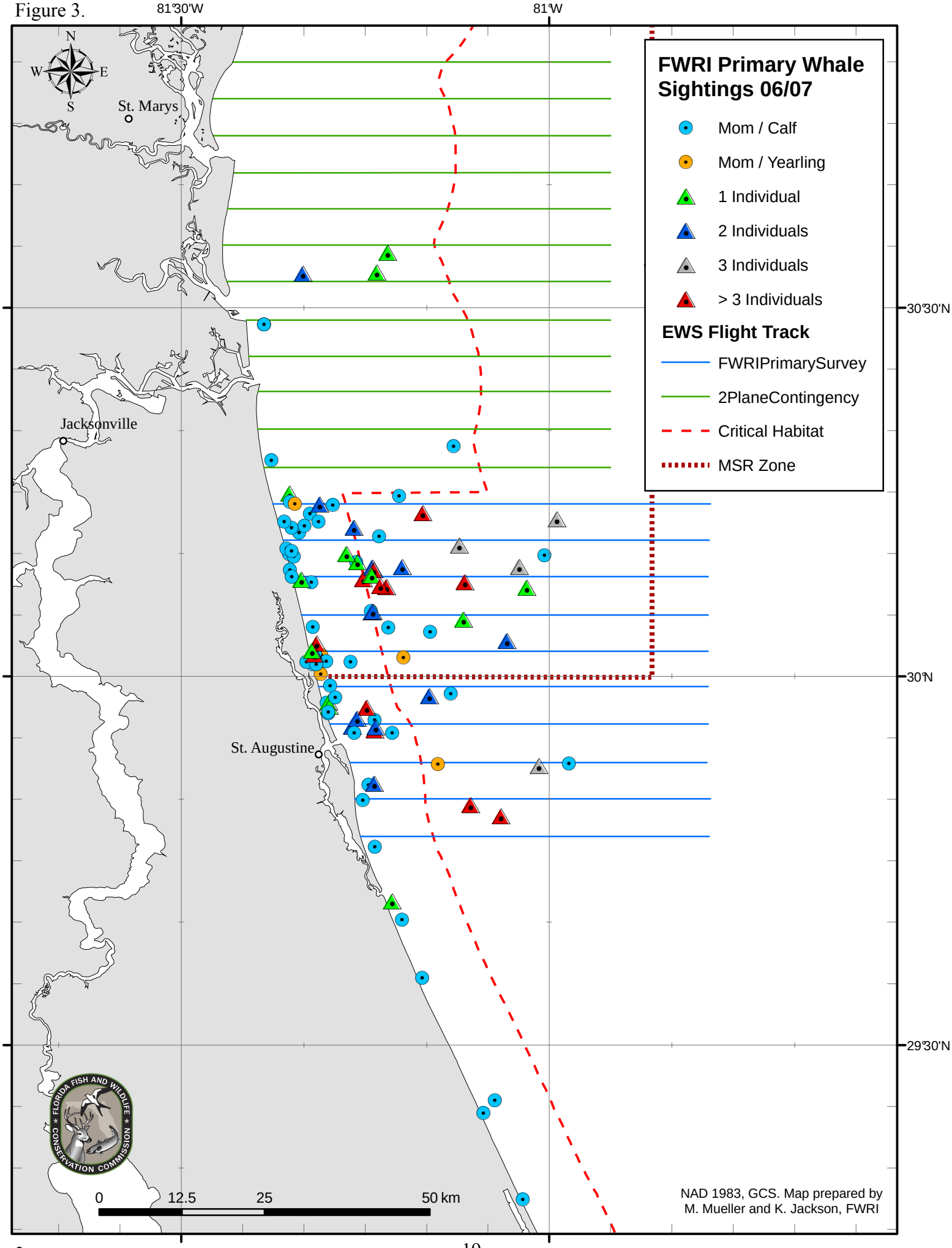
81°30'W
81°W
30°30'N
30°N
29°30'N
N
W
E
S
St. Marys
Jacksonville
St. Augustine
FWRI Primary Whale Sightings 06/07
Mom / Calf
Mom / Yearling
1 Individual
2 Individuals
3 Individuals
> 3 Individuals
EWS Flight Track
FWRIPrimarySurvey
2PlaneContingency
Critical Habitat
MSR Zone
0
12.5
25
50 km
NAD 1983, GCS. Map prepared by
M. Mueller and K. Jackson, FWRI

Figure 4.

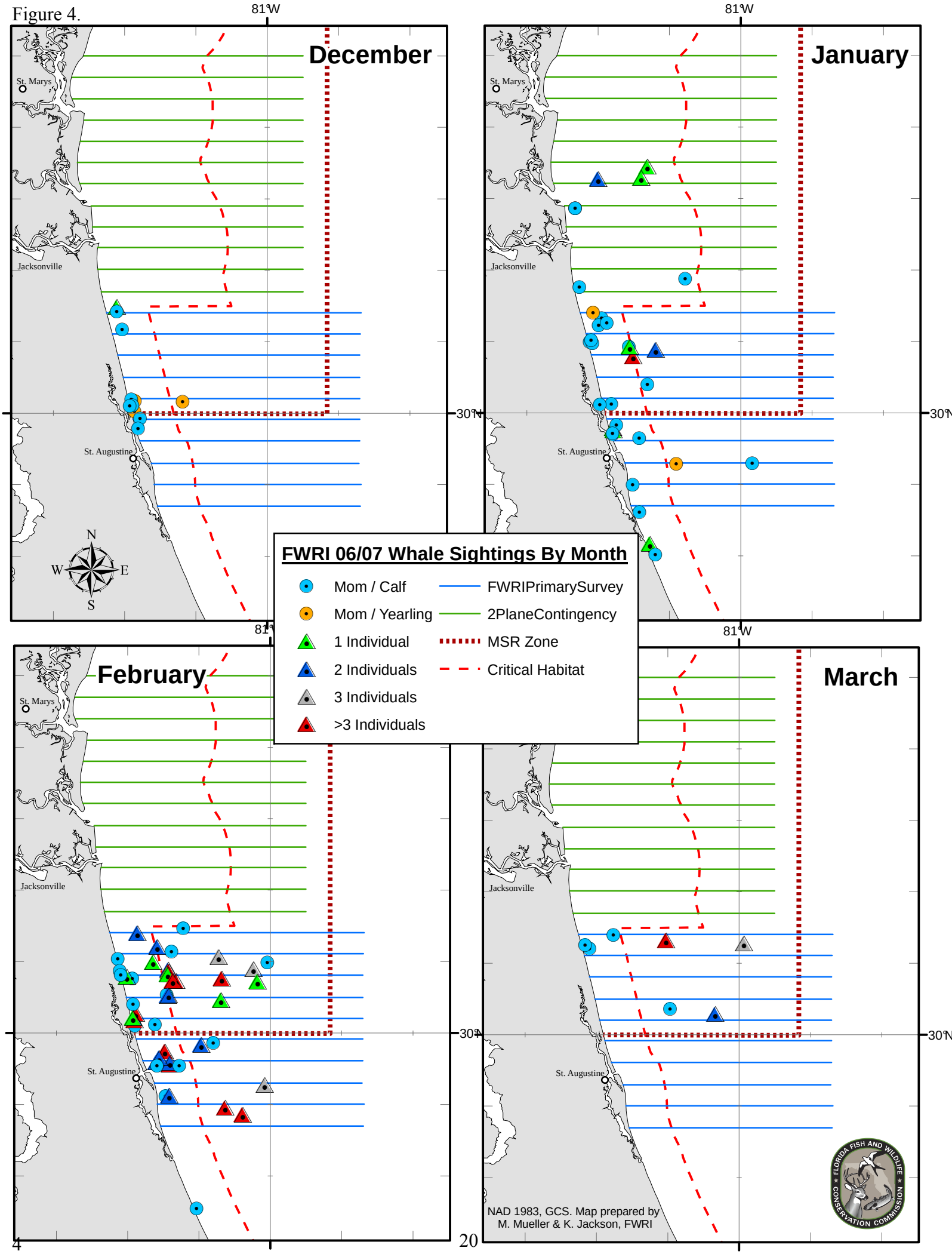
December
January
February
March
81°W
30°N
St. Marys
Jacksonville
St. Augustine
N
S
E
W
FWRI 06/07 Whale Sightings By Month
Mom / Calf
Mom / Yearling
1 Individual
2 Individuals
3 Individuals
>3 Individuals
FWRIPrimarySurvey
2PlaneContingency
MSR Zone
Critical Habitat
NAD 1983, GCS. Map prepared by
M. Mueller & K. Jackson, FWRI
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

Figure 5. SEUS Whale/Vessel Interactions

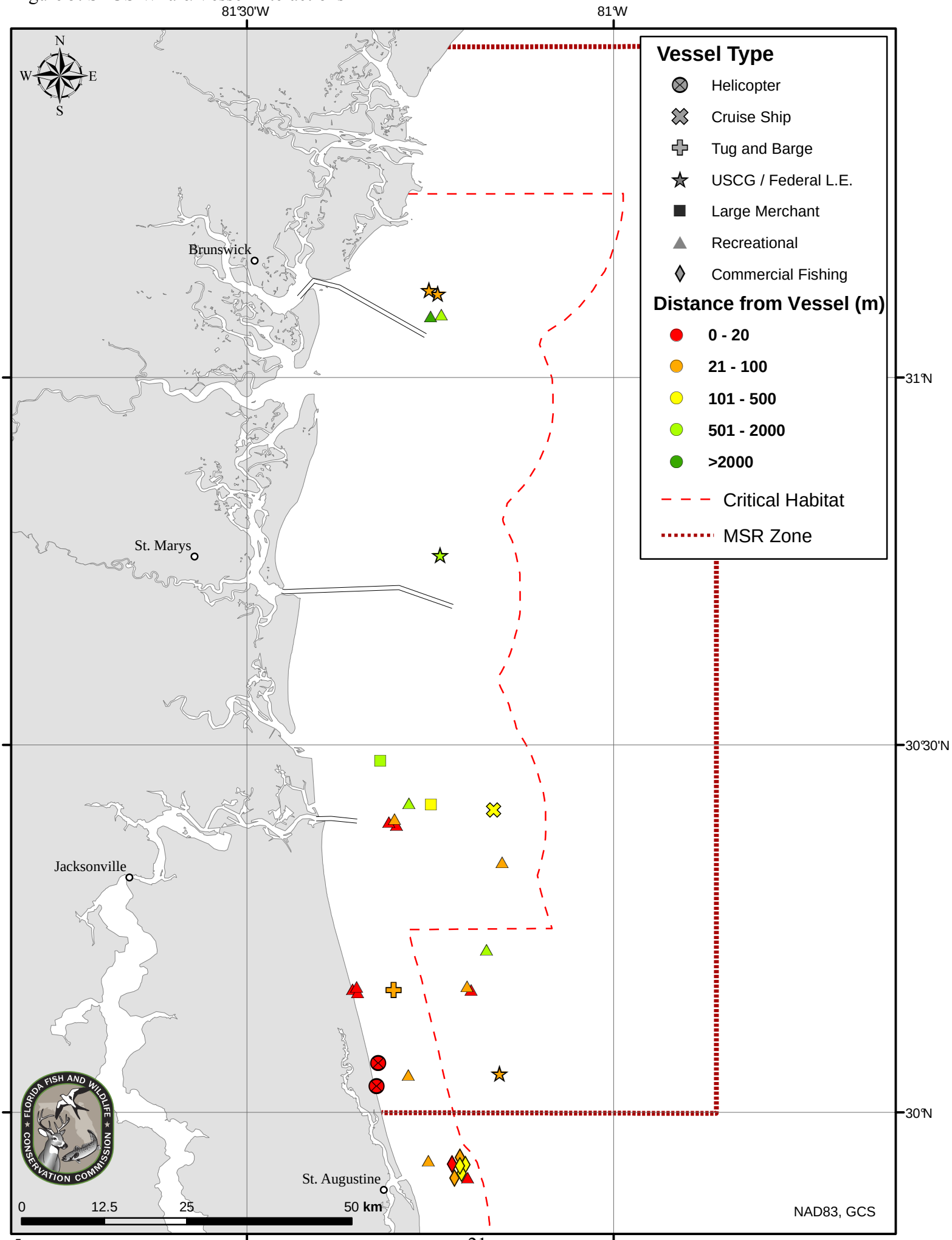

Figure 6.

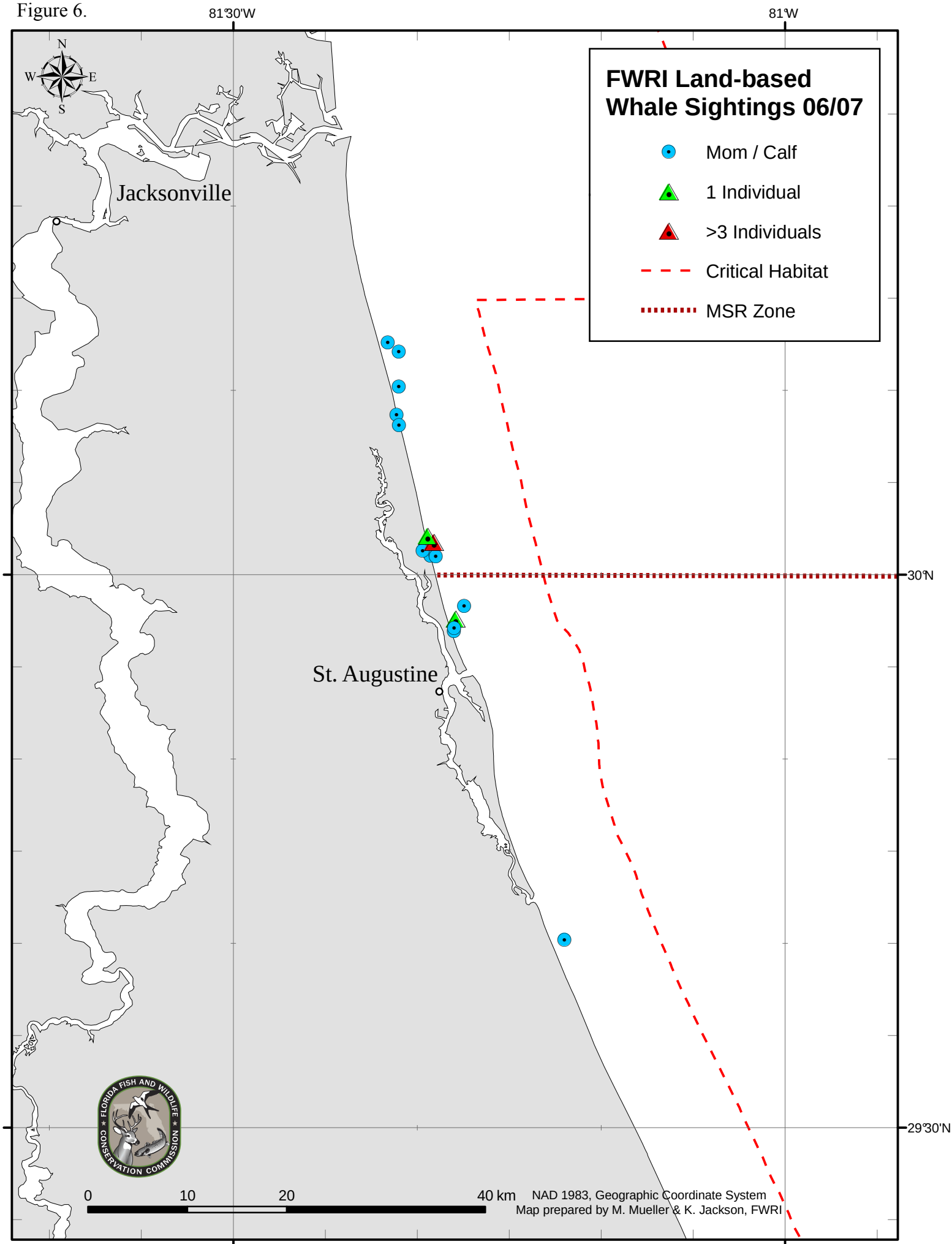
81°30'W
81°W
30°N
29°30'N
N
S
E
W
Jacksonville
St. Augustine
FWRI Land-based Whale Sightings 06/07
Mom / Calf
1 Individual
>3 Individuals
Critical Habitat
MSR Zone
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
0
10
20
40 km
NAD 1983, Geographic Coordinate System
Map prepared by M. Mueller & K. Jackson, FWRI

Table 1. FWRI Survey Waypoints and Nautical Mileage

All EWS Waypoints

EWS Line	Latitude	Longitude (Eastern Point)
1	31°26.0	-080°38.0
2	31°23.0	-080°38.0
3	31°20.0	-080°40.0
4	31°17.0	-080°40.0
5	31°14.0	-080°44.0
6	31°11.0	-080°44.0
7	31°08.0	-080°47.0
8	31°05.0	-080°47.0
9	31°02.0	-080°47.0
10	30°59.0	-080°47.0
11	30°56.0	-080°47.0
12	30°53.0	-080°47.0
13	30°50.0	-080°47.0
14	30°47.0	-080°47.0
15	30°44.0	-080°47.0
16	30°41.0	-080°47.0
17	30°38.0	-080°47.0
18	30°35.0	-080°47.0
19	30°32.0	-080°47.0
20	30°29.0	-080°47.0
21	30°26.0	-080°47.0
22	30°23.0	-080°47.0
23	30°20.0	-080°47.0
24	30°17.0	-080°47.0
25	30°14.0	-080°47.0
26	30°11.0	-080°47.0
27	30°08.0	-080°47.0
28	30°05.0	-080°47.0
29	30°02.0	-080°47.0
30	29°59.0	-080°47.0
31	29°56.0	-080°47.0
32	29°53.0	-080°47.0
33	29°50.0	-080°47.0
34	29°47.0	-080°47.0

FWRI Primary Survey Waypoints

EWS Line	Latitude	Longitude (Eastern Point)	Nautical Mileage
25	30°14.0	-080°47.0	30.87
26	30°11.0	-080°47.0	30.60
27	30°08.0	-080°47.0	29.97
28	30°05.0	-080°47.0	29.07
29	30°02.0	-080°47.0	28.80
30	29°59.0	-080°47.0	28.35
31	29°56.0	-080°47.0	27.00
32	29°53.0	-080°47.0	26.10
33	29°50.0	-080°47.0	25.65
34	29°47.0	-080°47.0	25.20

2 Plane Contingency Plan FWRI waypoints

EWS Line	Latitude	Longitude (Eastern Point)
13	30°50.0	-080°55.0
14	30°47.0	-080°55.0
15	30°44.0	-080°55.0
16	30°41.0	-080°55.0
17	30°38.0	-080°55.0
18	30°35.0	-080°55.0
19	30°32.0	-080°55.0
20	30°29.0	-080°55.0
21	30°26.0	-080°55.0
22	30°23.0	-080°55.0
23	30°20.0	-080°55.0
24	30°17.0	-080°55.0
25	30°14.0	-080°55.0
26	30°11.0	-080°55.0
27	30°08.0	-080°55.0
28	30°05.0	-080°55.0
29	30°02.0	-080°55.0
30	29°59.0	-080°55.0

1 Plane Contingency Plan Waypoints

EWS Line	Latitude	Longitude (Eastern Point)
5	31°14.0	-081°00.0
6	31°11.0	-081°00.0
7	31°08.0	-081°00.0
8	31°05.0	-081°00.0
9	31°02.0	-081°00.0
10	30°59.0	-081°00.0
11	30°56.0	-081°00.0
12	30°53.0	-081°00.0
13	30°50.0	-081°00.0
14	30°47.0	-081°00.0
15	30°44.0	-081°00.0
16	30°41.0	-081°00.0
17	30°38.0	-081°00.0
18	30°35.0	-081°00.0
19	30°32.0	-081°00.0
20	30°29.0	-081°00.0
21	30°26.0	-081°00.0
22	30°23.0	-081°00.0
23	30°20.0	-081°00.0
24	30°17.0	-081°00.0
25	30°14.0	-081°00.0

Total Nautical Mileage for FWRI Primary Survey: 281.6

Table 2: FWRI Aerial Survey Activities

Date	Survey File Name	Full SEWS	None	Partial SEWS	2 Plane Cont.	EWS Lines (25-34)	Number of Sightings	Number of Whales	M/C Pair	Hobbs	Nautical Miles Flown	Nautical miles flown sea state < 3	Whale/ Vessel Interaction	Humpback Number	Comments
1-Dec-06			X												No Fly- High wind
2-Dec-06	fwri20061202			X		25-32	0	0	0	3.5	210.0	210.0			Lines 31-32 cut at 81°00W and lines 33-34 cut due to inshore low ceiling approaching
3-Dec-06			X												Standby due to fog/low ceiling
4-Dec-06			X												No Fly- High wind
5-Dec-06	fwri20061205	X				25-34	0	0	0	4.0	281.6	281.6			All 10 lines completed N to S
6-Dec-06	fwri20061206	X				25-34	0	0	0	3.9	281.6	281.6			All 10 lines completed N to S
7-Dec-06	fwri20061207	X				25-34	0	0	0	3.7	281.6	212.7			All 10 lines completed N to S
8-Dec-06			X												No Fly- High wind
9-Dec-06			X												No Fly- High wind
10-Dec-06			X												No Fly- High wind
11-Dec-06	fwri20061211	X				25-34	0	0	0	3.8	281.6	248.0			All 10 lines completed N to S
12-Dec-06			X												No Fly - Plane maintenance, alternator coupling had to be replaced
13-Dec-06			X												No Fly - Fog and low ceiling
14-Dec-06			X												No Fly - Fog and low ceiling
15-Dec-06			X												No Fly - Fog and low ceiling
16-Dec-06	fwri20061216			X	X	17-28	1	2	1	6.5	280.8	280.8		2	2-plane contingency, completed 12 of 14 lines, 2 HUWH sightings
17-Dec-06	fwri20061217	X				25-34	1	2	0	6.2	473.8	473.8			All 10 lines completed N to S, plus coastal to Canaveral
18-Dec-06	fwri20061218	X				25-34	0	0	0	4.0	281.6	281.6			All 10 lines completed N to S
19-Dec-06	fwri20061219	X				25-34	2	4	0	5.2	281.6	209.5			All 10 lines completed N to S, used AIS for first time
20-Dec-06			X												No Fly- High wind
21-Dec-06			X												No Fly- High wind and rain
22-Dec-06			X												No Fly- High wind and rain
23-Dec-06	fwri20061223	X				25-34	1	1	0	4.3	281.6	281.6			All 10 lines completed N to S, standby due to rain/low ceiling
24-Dec-06	fwri20061224	X				25-34	1	2	1	4.2	281.6	281.6			All 10 lines completed N to S
25-Dec-06			X												No Fly - High wind and rain
26-Dec-06			X												No Fly - High offshore wind
27-Dec-06	fwri20061227			X		25-32	2	4	2	3.2	230.8	230.8			Standby due to high winds. 8 lines completed N to S. Unable to complete lines 33-34 due to diminishing daylight.
28-Dec-06	fwri20061228	X				25-34	2	4	2	4.7	281.6	60.4			All 10 lines completed N to S
29-Dec-06	fwri20061229	X				25-34	0	0	0	3.6	281.6	281.6			All 10 lines completed N to S
30-Dec-06			X												No Fly- High wind
31-Dec-06			X												No Fly- Fog, high wind
1-Jan-07			X												No Fly- High wind and rain
2-Jan-07			X												No Fly- High wind
3-Jan-07	fwri20070103			X			0	0	0	0.4	0.0	0.0			Take off at 0840 then landed shortly after at 0900 due to rain and approaching thunderstorms.
4-Jan-07	fwri20070104			X		25-32	2	6	0	3.8	230.8	230.8			Stand by due to fog. 8 lines completed N to S. Unable to complete lines 33-34 due to diminishing daylight.
5-Jan-07	fwri20070105	X				25-34	2	4	2	5.0	281.6	247.5			All 10 lines completed N to S, then south to Ormond to verify sighting.
6-Jan-07	fwri20070106			X		25-34	0	0	0	6.0	394.8	394.8			Lines 27-34 cut short due to fog offshore, Primary NM = 202.59. Coastal flight down to Port Canaveral.
7-Jan-07	fwri20070107			X		25-34	1	2	1	4.1	265.5	265.5			Standby until 1130 due to low ceiling. Lines 25-30 cut short due to offshore fog bank.
8-Jan-07			X												No Fly- High wind and low clouds
9-Jan-07	fwri20070109			X	X	13-25	2	5	2	6.3	286.5	55.9			2-plane contingency, out to 81°00W. Had to land in Fernandina to repair mechanical issue (Volt meter).

Table 2: FWRI Aerial Survey Activities

Date	Survey File Name	Full SEWS	None	Partial SEWS	2 Plane Cont.	EWS Lines (25-34)	Number of Sightings	Number of Whales	M/C Pair	Hobbs	Nautical Miles Flown	Nautical miles flown sea state < 3	Whale/ Vessel Interaction	Humpback Number	Comments
10-Jan-07	fwri20070110				X	13-16, 21-24	2	4	2	3.7	176.0	0.0			2-plane contingency, flew S to N. Covered Mayport and St. Mary's channel lines, out to 81°00W. Standby due to high wind.
11-Jan-07	fwri20070111			X	X	13-28	2	3	0	6.6	425.2	425.2			2-plane contingency. Lines 13-23 flown out to 80°55W and Lines 25-28 flown out to 81°00W. Extended lunch to replace starter cable that went bad.
12-Jan-07	fwri20070112	X				25-34	3	6	2	4.6	281.6	281.6			All 10 lines completed N to S
13-Jan-07	fwri20070113	X				25-34	1	1	0	4.2	281.6	281.6			All 10 lines completed N to S, some GPS outages (GPS antennae cable cut)
14-Jan-07	fwri20070114	X				25-34	1	2	1	4.4	281.6	281.6			All 10 lines completed N to S
15-Jan-07	fwri20070115	X				21-34	2	4	2	5.9	382.4	382.4	Yes		All 10 lines completed. Passed over lines 27-28 while heading south due to rain band. After completing the survey headed north to complete lines 27-28. Landed. Then flew Jax Channel lines (24-21) because the NEA plane was assisting with the entangled whale response.
16-Jan-07	fwri20070116	X				25-34	3	6	2	5.6	281.6	281.6			All 10 lines completed N to S. After survey flew down to 29°35 to verify a sighting.
17-Jan-07			X												No Fly- High wind
18-Jan-07			X												No Fly- High wind and rain
19-Jan-07	fwri20070119	X				25-34	1	2	1	4.3	281.6	238.7			All 10 lines completed S to N. Before survey flew south to verify sighting.
20-Jan-07	fwri20070120	X				25-34	0	0	0	3.8	281.6	104.0			All 10 lines completed N to S
21-Jan-07	fwri20070121	X				25-34	0	0	0	3.6	281.6	166.6			All 10 lines completed N to S
22-Jan-07			X												No Fly - High wind and rain
23-Jan-07	fwri20070123	X				25-34	1	1	0	4.6	281.6	159.5			All 10 lines completed N to S. Standby due to low ceiling. After survey flew south to verify sighting.
24-Jan-07	fwri20070124	X				25-34	1	2	1	4.7	281.6	281.6			All 10 lines completed N to S, then south to Ormond to verify sighting
25-Jan-07			X												No Fly - High wind and rain
26-Jan-07			X												No Fly - High wind
27-Jan-07	fwri20070127	X				25-34	1	3	1	5.3	281.6	281.6	Yes		All 10 lines completed N to S
28-Jan-07			X												No Fly - High wind
29-Jan-07			X												No Fly - High wind
30-Jan-07	fwri20070130	X				25-34	1	2	1	4.6	281.6	281.6		1	All 10 lines completed N to S. 1 HUWH sighting
31-Jan-07	fwri20070131				X	17-24	0	0	0	3.1	233.5	149.6			Two plane contingency, flew 8 lines N to S. Stand by due to high winds.
1-Feb-07			X												No Fly - High wind
2-Feb-07	fwri20070202	X				25-34	0	0	0	3.5	281.6	281.6			Standby until 1000 due to low ceiling and fog. All 10 lines completed S to N.
3-Feb-07	fwri20070203			X		25-34	0	0	0	2.4	164.6	0.0			All 10 lines completed N to S. Lines were cut at 81°00W due to high sea state offshore.
4-Feb-07			X												No Fly - High wind, high sea state
5-Feb-07			X												No Fly - High wind
6-Feb-07	fwri20070206	X				25-34	1	2	1	4.4	281.6	252.9			All 10 lines completed N to S. Offtrack to verify a sighting at the end of line 32 then completed lines 33-34. Stand by due to high winds.
7-Feb-07	fwri20070207	X				25-34	1	2	1	5.0	281.6	223.2			All 10 lines completed N to S
8-Feb-07	fwri20070208	X				25-34	3	7	2	6.3	281.6	281.6			All 10 lines completed N to S
9-Feb-07	fwri20070209	X				25-34	0	0	0	4.7	281.6	281.6			All 10 lines completed N to S. After survey completed mini coastal to Flagler then back north to 30°14N, 1 mile offshore heading south and 2 miles offshore heading north. Standby due to fog/low clouds.

Table 2: FWRI Aerial Survey Activities

Date	Survey File Name	Full SEWS	None	Partial SEWS	2 Plane Cont.	EWS Lines (25-34)	Number of Sightings	Number of Whales	M/C Pair	Hobbs	Nautical Miles Flown	Nautical miles flown sea state < 3	Whale/ Vessel Interaction	Humpback Number	Comments
10-Feb-07	fwri20070210	X				25-34	1	2	0	4.5	281.6	168.5			All 10 lines completed N to S
11-Feb-07	fwri20070211	X				25-34	1	2	0	5.0	281.6	177.7			All 10 lines completed N to S. GPS not updating position for first 2 lines.
12-Feb-07	fwri20070212			X		25-34	1	2	1	4.3	268.5	263.6			Flew lines 25-32 N to S. Lines 33-34 cut short due to rain. Flew south to Palm Coast to verify sighting.
13-Feb-07	fwri20070213			X		27-34	4	12	0	3.3	196.7	196.7			Lines 25-26 cut and 27-28 cut short at 81°00W due to incoming storms. Standby due to fog.
14-Feb-07	fwri20070214			X			1	15	0	0.6	0.0	0.0			Standby and no lines completed due to high winds. Attempted to document SAG nearshore. Est 15 Whales +/- 5 whales.
15-Feb-07	fwri20070215	X				25-34	4	22	1	6.2	281.6	281.6			All 10 lines completed N to S. Lines 25-30 flown N to S. Flew south to 29°25N to verify sighting then continued N to finish lines 31-34 S to N.
16-Feb-07			X												No Fly - High wind
17-Feb-07	fwri20070217	X				25-34	2	4	1	5.9	301.8	301.8	Yes		All 10 lines completed N to S. Flew coastal south to Flagler Pier. 1.2 hours standby for pilots while observers switched out.
18-Feb-07			X												No Fly - High wind
19-Feb-07	fwri20070219			X		25-34	1	2	0	4.0	261.0	261.0		1	All 10 lines completed N to S. Lines 33-34 cut at 81° 00W due to diminishing daylight and fuel. Standby by due to high winds. 1 HUWH sighting.
20-Feb-07	fwri20070220	X				25-34	4	8	3	5.3	281.6	281.6			All 10 lines completed N to S
21-Feb-07	fwri20070221			X		25-28	3	6	1	3.8	120.5	93.8	Yes	1	4 lines N to S. Problem w/rear engine cylinder so rest of survey was cancelled. 1 HUWH sighting.
22-Feb-07	fwri20070222			X		25-34	4	14	2	5.0	234.8	234.8			All 10 lines completed N to S. Lines 25-28 were cut at the 81°00W due to time restraints. Standby until 1200 for N1275M to arrive from North Carolina while 337CH has maintenance done.
23-Feb-07			X												No Fly - High wind
24-Feb-07	fwri20070224			X		25-30	2	6	1	5.1	133.8	114.4	Yes		Lines 25-30 flown N to S. Initial take off at 0900, burning plastic smell in plane caused standby until 1300. Cut lines 25-26 at 80°55W and lines 27-30 at 81°00W due to time restraints and high sea state offshore, did not fly lines 31-34 due to diminishing daylight. Flew Coastal portion of the survey south to Matanzas Inlet, 14.89 NM.
25-Feb-07			X												No Fly - High wind
26-Feb-07	fwri20070226			X		25-26, 28-34	1	2	0	3.8	187.8	187.8			Flew lines 25-26 N to S, skipped line 27 due to low ceiling, flew 28 line eastbound and lines 28 to 34 N to S in opposite from normal east/west order. Cut lines 28-31 short due to low ceiling offshore. After survey went north to complete line 27 and verify RHIB Mom/Calf sighting, but low ceiling still obscuring visibility. Standby due to low ceiling.
27-Feb-07	fwri20070227			X		25-34	4	10	0	5.8	258.2	258.2			Standby due to low clouds. Cut lines 31-32 at 81°00W due to USCG 27C active box.
28-Feb-07	fwri20070228	X				25-34	3	5	0	6.1	281.6	266.1			All 10 lines completed N to S
1-Mar-07			X												No Fly- High wind and rain
2-Mar-07			X												No Fly- High wind and rain
3-Mar-07	fwri20070303			X		25-34	0	0	0	3.1	211.4	211.4			All 10 lines completed N to S. Cut lines 29-34 at the 81°00W due to time restraints. Standby until 1330 due to rain.

Table 2: FWRI Aerial Survey Activities

Date	Survey File Name	Full SEWS	None	Partial SEWS	2 Plane Cont.	EWS Lines (25-34)	Number of Sightings	Number of Whales	M/C Pair	Hobbs	Nautical Miles Flown	Nautical miles flown sea state < 3	Whale/ Vessel Interaction	Humpback Number	Comments
4-Mar-07	fwri20070304			X		27-28	0	0	0	1.2	51.8	0.0			Started survey on line 27 due to high wind shear in the northern portion of the survey area. Lines 27-28 flown N to S. Ended survey due to wind shear and rough seas.
5-Mar-07			X												No Fly- High wind
6-Mar-07	fwri20070306	X				25-34	1	2	0	4.8	281.6	134.6			All 10 lines completed N to S
7-Mar-07	fwri20070307	X				25-34	0	0	0	4.2	281.6	281.6			All 10 lines completed N to S
8-Mar-07	fwri20070308			X		25-34	0	0	0	4.1	245.2	245.2			All ten lines completed N to S. Lines 31-32 cut at 81°00W due to active USCG Box 27C, lines 30 & 33 adjusted slightly (N and S) to remain outside the box.
9-Mar-07			X												No Fly - Fog in the morning and high wind in the afternoon
10-Mar-07			X												No Fly - Low ceilings/T-storms in afternoon
11-Mar-07	fwri20070311	X				25-34	0	0	0	3.8	281.6	281.6			All 10 lines completed N to S. Standby due to fog
12-Mar-07	fwri20070312	X				25-34	2	6	1	5.1	281.6	281.6	Yes		Standby due to fog, All 10 lines N to S.
13-Mar-07	fwri20070313	X				25-34	1	3	0	4.7	281.6	281.6			All 10 lines completed N to S
14-Mar-07	fwri20070314	X				25-34	0	0	0	3.8	281.6	281.6			All 10 lines completed N to S
15-Mar-07	fwri20070315	X				25-34	0	0	0	3.7	281.6	281.6			27C active at 1000 so flew lines within box first. Lines 31-32 flown S to N then 33-34 N to S. Lines 25-30 flown S to N.
16-Mar-07			X												No Fly - High wind and rain
17-Mar-07			X												No Fly - High wind
18-Mar-07			X												No Fly - High wind
19-Mar-07	fwri20070319			X		25-34	0	0	0	3.8	188.0	46.9			All 10 lines completed N to S. Lines 27-34 were cut at 81°00W due to high offshore winds. Computer problem after takeoff. Unable to fix from the air so had to land. 30mins of standby to fix computer problem.
20-Mar-07	fwri20070320	X				25-34	1	2	1	4.4	281.6	281.6			Standby due to fog. All 10 lines completed N to S.
21-Mar-07	fwri20070321	X				25-34	0	0	0	4.0	281.6	225.5			All 10 lines completed N to S
22-Mar-07			X												No Fly - High wind and seas state
23-Mar-07	fwri20070323	X				25-34	0	0	0	4.3	281.6	281.6			All 10 lines completed N to S
24-Mar-07	fwri20070324	X				25-34	0	0	0	4.2	281.6	281.6		1	All 10 lines completed N to S. 1 HUWH sighting.
25-Mar-07	fwri20070325	X				25-34	0	0	0	6.2	473.8	473.8			All 10 lines completed N to S and Coastal survey to Port Canaveral.
26-Mar-07	fwri20070326	X				25-34	0	0	0	4.5	281.6	281.6		2	All 10 lines completed N to S. 2 Humpback sightings.
27-Mar-07	fwri20070327	X				25-34	0	0	0	4.0	281.6	281.6			All 10 lines completed N to S. Stand by due to fog and low ceiling.
28-Mar-07	fwri20070328	X				25-34	0	0	0	4.5	281.6	281.6			All 10 lines completed N to S. Whale Shark Sighting.
29-Mar-07	fwri20070329			X	X	15-30	0	0	0	5.6	400.4	400.4			2-plane contingency, completed lines 15-30 N to S
30-Mar-07			X												No fly- high winds
31-Mar-07	fwri20070331			X	X	15-30	0	0	0	6.6	400.4	400.4			2-plane contingency, completed lines 15-30 N to S. Standby until 0930 due to fog. Problem with plane spark plug before takeoff. Replaced plug and 2nd takeoff was at 1114.

Table 3: FWRI Aerial Survey Sightings - Identifications are PRELIMINARY

Date	Time (L)	Survey Name	Latitude (Dec Degrees)	Longitude (Dec Degrees)	RIWH Letter	NARWC ID No Or Intermatch Code	Sex/Age	Calf	Behaviors*	Agency Notified	Last Sighting Time (L)	Time (L) Notified	NRW Number	Comments
12/16/2006	1034	FWS555	30.19500	-81.33962	A	1425	F/UNK		W/CALF	FACSFACJAX	1042	1052	NRW07014	
12/16/2006	1034	FWS555	30.19500	-81.33962	B	2007CalfOf1425		X	CALF W/MOM	FACSFACJAX	1042	1052	NRW07014	
12/17/2006	1101	FWS555	30.02624	-81.19827	A	1817	F/UNK		W/YRLG, BOD CNT, BODO, HD LFT	FACSFACJAX	1115	1123	NRW07021	
12/17/2006	1101	FWS555	30.02624	-81.19827	B	2006CalfOf1817			YRLG W/MOM, BOD CNT, BODO	FACSFACJAX	1115	1123	NRW07021	
12/19/2006	0954	FWS555	30.00386	-81.31055	A	1817	F/UNK		W/YRLG, SUB TR, BODO	FACSFACJAX	1017	1025	NRW07026	
12/19/2006	0954	FWS555	30.00386	-81.31055	B	2006CalfOf1817			YRLG W/MOM, SUB TR, BODO	FACSFACJAX	1017	1025	NRW07026	
12/19/2006	1209	FWS555	30.02884	-81.30946	C	1817	F/UNK		W/YRLG, SUB TR, BODO	FACSFACJAX	1227	1233	NRW07027	
12/19/2006	1209	FWS555	30.02884	-81.30946	D	2006CalfOf1817			YRLG W/MOM, SUB TR, BODO	FACSFACJAX	1227	1233	NRW07027	
12/23/2006	1101	FWS555	30.24825	-81.35424	A	1705	F/20		SUB TR	FACSFACJAX	1108	1113	NRW07035	
12/24/2006	0912	FWS555	30.23714	-81.35212	A	1425	F/UNK		W/CALF, LOG, BOD CNT	FACSFACJAX	0922	0927	NRW07040	
12/24/2006	0912	FWS555	30.23714	-81.35212	B	2007CalfOf1425		X	CALF W/MOM, LOG, BOD CNT, ROLL	FACSFACJAX	0922	0927	NRW07040	
12/27/2006	1341	FWS555	29.98781	-81.29781	A	2430	F/13		W/CALF, NURS, BODO	FACSFACJAX	1358	1404	NRW07045	
12/27/2006	1341	FWS555	29.98781	-81.29781	B	2007CalfOf2430		X	CALF W/MOM, NURS, BODO	FACSFACJAX	1358	1404	NRW07045	
12/27/2006	1555	FWS555	29.96470	-81.30230	C	2430	F/13		W/CALF					Resight, no photos, not reported again
12/27/2006	1555	FWS555	29.96470	-81.30230	D	2007CalfOf2430		X	CALF W/MOM					Resight, no photos, not reported again
12/28/2006	0927	FWS555	30.03205	-81.31804	A	2430	F/13		W/CALF, BODO, NURS, LOG	FACSFACJAX	0947	0952	NRW07046	
12/28/2006	0927	FWS555	30.03205	-81.31804	B	2007CalfOf2430		X	CALF W/MOM, BODO, NURS, LOG	FACSFACJAX	0947	0952	NRW07046	
12/28/2006	1247	FWS555	30.01853	-81.31560	C	2430	F/13		W/CALF					Resight, no photos, not reported again
12/28/2006	1247	FWS555	30.01853	-81.31560	D	2007CalfOf2430		X	CALF W/MOM					Resight, no photos, not reported again
1/4/2007	1419	FWS555	30.13230	-81.25381	A	2004CalfOf2614			SAG, BEL/BEL, BODO	FACSFACJAX	1425	1429	NRW07058	
1/4/2007	1419	FWS555	30.13230	-81.25381	B	2005CalfOf1241			SAG, FLIP, BEL/BEL, BODO, BEL UP, WH BEL, WH CHN	FACSFACJAX	1425	1429	NRW07058	
1/4/2007	1419	FWS555	30.13230	-81.25381	C	2004CalfOf2330			SAG, BEL/BEL, BODO	FACSFACJAX	1425	1429	NRW07058	
1/4/2007	1419	FWS555	30.13230	-81.25381	D	3346	M/4		SAG, BEL/BEL, BODO, ENTGL	FACSFACJAX	1425	1429	NRW07058	Entangled Whale "Kingfisher"
1/4/2007	1449	FWS555	30.14844	-81.20108	E	2004CalfOf1705			SAG, FLIP, BEL/BEL, BODO	FACSFACJAX	1450	1453	NRW07059	
1/4/2007	1449	FWS555	30.14844	-81.20108	F	SE06BK11/18			SAG, BEL/BEL, BODO	FACSFACJAX	1450	1453	NRW07059	
1/5/2007	0952	FWS555	30.22101	-81.32520	A	1425	F/UNK		W/CALF, BODO	FACSFACJAX	1012	1019	NRW07062	
1/5/2007	0952	FWS555	30.22101	-81.32520	B	2007CalfOf1425		X	CALF W/MOM, BODO	FACSFACJAX	1012	1019	NRW07062	
1/5/2007	1342	FWS555	29.40830	-81.08930	C	2430	F/13		W/CALF	FACSFACJAX	1348	1417	NRW07064	
1/5/2007	1342	FWS555	29.40830	-81.08930	D	2007CalfOf2430		X	CALF W/MOM	FACSFACJAX	1348	1417	NRW07064	
1/7/2007	1314	FWS555	29.94077	-81.23722	A	2430	F/13		W/CALF, BOD CNT	FACSFACJAX	1328	1343	NRW0776	
1/7/2007	1314	FWS555	29.94077	-81.23722	B	2007CalfOf2430		X	CALF W/MOM, BOD CNT, FLIP	FACSFACJAX	1328	1343	NRW0776	
1/9/2007	1157	FWS555	30.57500	-81.22086	A	2614	F/11		SFC TR, SUB TR	FACSFACJAX	1214	1219	NRW0786	
1/9/2007	1422	FWS555	30.47750	-81.38744	B	2601	F/11		W/CALF	FACSFACJAX	1447	1452	NRW0787	
1/9/2007	1422	FWS555	30.47750	-81.38744	C	2007CalfOf2601		X	CALF W/MOM	FACSFACJAX	1447	1452	NRW0787	
1/9/2007	1422	FWS555	30.47750	-81.38744	D	2430	F/13		W/CALF	FACSFACJAX	1447	1452	NRW0787	
1/9/2007	1422	FWS555	30.47750	-81.38744	E	2007CalfOf2430		X	CALF W/MOM	FACSFACJAX	1447	1452	NRW0787	
1/10/2007	1243	FWS555	29.83276	-81.25314	A	1425	F/UNK		W/CALF, SFC TR, SUB TR	FACSFACJAX	1300	1304	NRW0789	
1/10/2007	1243	FWS555	29.83276	-81.25314	B	2007CalfOf1425		X	CALF W/MOM, SFC TR, SUB TR	FACSFACJAX	1300	1304	NRW0789	
1/10/2007	1544	FWS555	30.29341	-81.37742	C	2430	F/13		W/CALF, BODO, SFC TR, SUB TR	FACSFACJAX	1546	1550	NRW0790	
1/10/2007	1544	FWS555	30.29341	-81.37742	D	2007CalfOf2430		X	CALF W/MOM, BODO, SFC TR, SUB TR	FACSFACJAX	1546	1550	NRW0790	
1/11/2007	1152	FWS555	30.54646	-81.33607	A	3346	M/4		SAG, BEL/BEL, FLIP, ENTGL, HD LFT	FACSFACJAX	1159	1203	NRW0791	Entangled Whale "Kingfisher"
1/11/2007	1152	FWS555	30.54646	-81.33607	B	2004CalfOf2614			SAG, BEL/BEL, FLIP	FACSFACJAX	1159	1203	NRW0791	
1/11/2007	1222	FWS555	30.54808	-81.23560	C	2746	F/10		SUB TR	FACSFACJAX	1226	1233	NRW0792	
1/12/2007	0926	FWS555	30.02092	-81.30264	A	1425	F/UNK		W/CALF	FACSFACJAX	0936	0943	NRW0793	
1/12/2007	0926	FWS555	30.02092	-81.30264	B	2007CalfOf1425		X	CALF W/MOM	FACSFACJAX	0936	0943	NRW0793	
1/12/2007	1028	FWS555	30.20458	-81.33260	C	2601	F/11		W/CALF	FACSFACJAX	1035	1038	NRW0794	
1/12/2007	1028	FWS555	30.20458	-81.33260	D	2007CalfOf2601		X	CALF W/MOM	FACSFACJAX	1035	1038	NRW0794	

Table 3: FWRI Aerial Survey Sightings - Identifications are PRELIMINARY

1/12/2007	1313	FWS555	30.23406	-81.34546	E	1817	F/UNK		W/YRLG, BOD CNT, BODO	FACSFACJAX	1324	1342	NRW0798	Also reported by USCG
1/12/2007	1313	FWS555	30.23406	-81.34546	F	2006CalfOf1817			YRLG W/MOM, BOD CNT, BODO	FACSFACJAX	1324	1342	NRW0798	
1/13/2007	0947	FWS555	29.96489	-81.30114	A	2005CalfOf1140				FACSFACJAX	1005	1010	NRW07105	
1/14/2007	1225	FWS555	29.88210	-80.97337	A	1710	F/UNK		W/CALF, SUB TR	FACSFACJAX	1250	1303	NRW07114	
1/14/2007	1225	FWS555	29.88210	-80.97337	B	2007CalfOf1710		X	CALF W/MOM, SUB TR	FACSFACJAX	1250	1303	NRW07114	
1/15/2007	1522	FWS555	30.16632	-81.35338	A	1710	F/UNK		W/CALF, BODO	FACSFACJAX	1530	1534	NRW07125	Whale/Vessel Interaction
1/15/2007	1522	FWS555	30.16632	-81.35338	B	2007CalfOf1710		X	CALF/MOM, BODO	FACSFACJAX	1530	1534	NRW07125	Whale/Vessel Interaction
1/15/2007	1622	FWS555	30.31240	-81.13008	C	1425	F/UNK		W/CALF	FACSFACJAX	1627	1629	NRW07126	
1/15/2007	1622	FWS555	30.31240	-81.13008	D	2007CalfOf1425		X	CALF W/MOM	FACSFACJAX	1627	1629	NRW07126	
1/16/2007	0919	FWS555	30.16284	-81.34686	A	2430	F/13		W/CALF, NURS, BOD CNT	FACSFACJAX	0927	0931	NRW07129	
1/16/2007	0919	FWS555	30.16284	-81.34686	B	2007CalfOf2430		X	CALF W/MOM, NURS, BOD CNT	FACSFACJAX	0927	0931	NRW07129	
1/16/2007	0940	FWS555	30.21004	-81.31335	C	2601	F/11		W/CALF, FLIP, BOD CNT	FACSFACJAX	0954	0957	NRW07130	
1/16/2007	0940	FWS555	30.21004	-81.31335	D	2007CalfOf2601		X	CALF W/MOM, FLIP, BOD CNT	FACSFACJAX	0954	0957	NRW07130	
1/16/2007	1335	FWS555	29.88147	-81.15133	E	1817	F/UNK		W/YRLG, BOD CNT	FACSFACJAX	1343	1348	NRW07137	
1/16/2007	1335	FWS555	29.88147	-81.15133	F	2006CalfOf1817			YRLG W/MOM, BOD CNT	FACSFACJAX	1343	1348	NRW07137	
1/19/2007	0926	FWS555	29.76897	-81.23698	A	2601	F/11		W/CALF, BOD CNT	FACSFACJAX	0932	0940	NRW07142	
1/19/2007	0926	FWS555	29.76897	-81.23698	B	2007CalfOf2601		X	CALF W/MOM, BOD CNT	FACSFACJAX	0932	0940	NRW07142	
1/23/2007	1416	FWS555	29.69529	-81.21497	A	2006CalfOf2660			LOG, BEL UP, WH BEL	FACSFACJAX	1440	1457	NRW07155	
1/24/2007	1244	FWS555	29.29112	-81.03573	A	2601	F/11		W/CALF, BOD CNT	FACSFACJAX	1300	1307	NRW07158	
1/24/2007	1244	FWS555	29.29112	-81.03573	B	2007CalfOf2601		X	CALF W/MOM, BOD CNT	FACSFACJAX	1300	1307	NRW07158	
1/27/2007	1050	FWS555	30.15508	-81.26204	A	2430	F/13		W/CALF, SUB TR, BOD CNT, BODO	FACSFACJAX	1126	1135	NRW07170	Whale/Vessel Interaction
1/27/2007	1050	FWS555	30.15508	-81.26204	B	2007CalfOf2430		X	CALF W/MOM, SUB TR, BOD CNT, BODO, ROLL	FACSFACJAX	1126	1135	NRW07170	Whale/Vessel Interaction
1/27/2007	1050	FWS555	30.15508	-81.26204	C	2006CalfOf2660			RAND SUB TR, MOPN, ROLL, BOD CNT, BODO, WH CHN, WH BEL	FACSFACJAX	1126	1135	NRW07170	
1/30/2007	1100	FWS555	30.06623	-81.21858	A	2430	F/13		W/CALF, NURS, BODO	FACSFACJAX	1112	1118	NRW07186	
1/30/2007	1100	FWS555	30.06623	-81.21858	B	2007CalfOf2430		X	CALF W/MOM, NURS, BODO	FACSFACJAX	1112	1118	NRW07186	
2/6/2007	1600	FWS555	30.01969	-81.27005	A	1620	F/UNK		W/CALF, BODO	FACSFACJAX	1627	1631	NRW07220	
2/6/2007	1600	FWS555	30.01969	-81.27005	B	2007CalfOf1620		X	CALF W/MOM, BODO	FACSFACJAX	1627	1631	NRW07220	
2/7/2007	1024	FWS555	30.08904	-81.24213	A	2145	F/16		W/CALF, NURS, BOD CNT, BODO, HD LFT	FACSFACJAX	1059	1102	NRW07221	
2/7/2007	1024	FWS555	30.08904	-81.24213	B	2007CalfOf2145		X	CALF W/MOM, MALE, NURS, BOD CNT, BODO	FACSFACJAX	1059	1102	NRW07221	
2/8/2007	0958	FWS555	30.17809	-81.12361	A	3150	M/6		SAG, SPY, BEL/BEL, WH CHN, WH BEL	FACSFACJAX	1037	1044	NRW07228	
2/8/2007	0958	FWS555	30.17809	-81.12361	B	SE06BK15			SAG, BEL/BEL	FACSFACJAX	1037	1044	NRW07228	
2/8/2007	0958	FWS555	30.17809	-81.12361	C	SE07CT08			SAG	FACSFACJAX	1037	1044	NRW07228	
2/8/2007	1134	FWS555	30.16453	-81.00669	D	2145	F/16		W/CALF, BOD CNT	FACSFACJAX	1139	1144	NRW07232	
2/8/2007	1134	FWS555	30.16453	-81.00669	E	2007CalfOf2145		X	CALF W/MOM, BOD CNT	FACSFACJAX	1139	1144	NRW07232	
2/8/2007	1442	FWS555	29.85334	-81.24564	F	1620	F/UNK		W/CALF, NURS, BOD CNT, BODO	FACSFACJAX	1449	1456	NRW07239	
2/8/2007	1442	FWS555	29.85334	-81.24564	G	2007CalfOf1620		X	CALF W/MOM, NURS, BOD CNT, BODO	FACSFACJAX	1449	1456	NRW07239	
2/10/2007	1236	FWS555	29.85504	-81.23879	A	SE06CT02			SAG, BEL/BEL, BODO, FLIP	FACSFACJAX	1257	1302	NRW07253	
2/10/2007	1236	FWS555	29.85504	-81.23879	B	BK53			SAG, BEL/BEL, BODO, FLIP	FACSFACJAX	1257	1302	NRW07253	
2/11/2007	0952	FWS555	30.20200	-81.26667	A	BK53			SUB TR	FACSFACJAX	1020	1022	NRW07257	
2/11/2007	0952	FWS555	30.20200	-81.26667	B	SE06CT02			SUB TR	FACSFACJAX	1020	1022	NRW07257	
2/12/2007	1232	FWS555	29.59132	-81.17262	A	2430	F/13		W/CALF, BODO	FACSFACJAX	1236	1241	NRW07272	
2/12/2007	1232	FWS555	29.59132	-81.17262	B	2007CalfOf2430		X	CALF W/MOM, BODO	FACSFACJAX	1236	1241	NRW07272	
2/13/2007	1050	FWS555	29.93238	-81.26897	A	SE07CT11			BOD CNT	FACSFACJAX	1100	1112	NRW07277	
2/13/2007	1050	FWS555	29.93238	-81.26897	B	SE07CT07			BOD CNT, CHN BRCH	FACSFACJAX	1100	1112	NRW07277	
2/13/2007	1304	FWS555	30.14791	-81.24150	C	2004CalfOf2330			SAG, BEL/BEL, FLIP	FACSFACJAX	1311	1356	NRW07278	
2/13/2007	1304	FWS555	30.14791	-81.24150	D	3150	M/6		SAG, BEL/BEL	FACSFACJAX	1311	1356	NRW07278	
2/13/2007	1313	FWS555	30.14443	-81.23951	E	SE07CT12			SAG, BEL/BEL, BODO, WH BEL	FACSFACJAX	1331	1356	NRW07278	
2/13/2007	1313	FWS555	30.14443	-81.23951	F	2910	UNK/UNK		SAG, BODO	FACSFACJAX	1331	1356	NRW07278	
2/13/2007	1313	FWS555	30.14443	-81.23951	G	2005CalfOf1140			SAG, BEL/BEL, BODO, UW EXH	FACSFACJAX	1331	1356	NRW07278	
2/13/2007	1313	FWS555	30.14443	-81.23951	H	3340	UNK/5		SAG, BODO	FACSFACJAX	1331	1356	NRW07278	
2/13/2007	1313	FWS555	30.14443	-81.23951	I	SE07BK08			SAG, BODO	FACSFACJAX	1331	1356	NRW07278	

Table 3: FWRI Aerial Survey Sightings - Identifications are PRELIMINARY

2/13/2007	1313	FWS555	30.14443	-81.23951	J	SE07CT09			SAG, BODO	FACSFACJAX	1331	1356	NRW07278	
2/13/2007	1313	FWS555	30.14443	-81.23951	K	3333	M/4		SAG, BODO	FACSFACJAX	1331	1356	NRW07278	
2/13/2007	1334	FWS555	30.13698	-81.24245	L	SE07CT06				FACSFACJAX	1336	1356	NRW07278	
2/14/2007	0919	FWS555	30.04508	-81.31709	A	CT15			SAG, BODO, W/UNPH EG(S)	FACSFACJAX	0935	0949	NRW07284	Total 15 +/-5 whales in SAG
2/14/2007	0919	FWS555	30.04508	-81.31709	B				SAG, BODO, W/UNPH EG(S)	FACSFACJAX	0935	0949	NRW07284	Total 15 +/-5 whales in SAG
2/14/2007	0919	FWS555	30.04508	-81.31709	C				SAG, BODO, W/UNPH EG(S)	FACSFACJAX	0935	0949	NRW07284	Total 15 +/-5 whales in SAG
2/14/2007	0919	FWS555	30.04508	-81.31709	D	2004CalfOf2460			SAG, BODO, W/UNPH EG(S)	FACSFACJAX	0935	0949	NRW07284	Total 15 +/-5 whales in SAG
2/15/2007	1104	FWS555	29.95791	-81.24919	A	SE06BK15			SAG, FLIP	FACSFACJAX	1127	1137	NRW07292	
2/15/2007	1104	FWS555	29.95791	-81.24919	B	CT01BOF05			SAG, BEL/BEL	FACSFACJAX	1127	1137	NRW07292	
2/15/2007	1104	FWS555	29.95791	-81.24919	C	3346	M/4		SAG, ENTGL, BEL/BEL	FACSFACJAX	1127	1137	NRW07292	Entangled Whale "Kingfisher"
2/15/2007	1104	FWS555	29.95791	-81.24919	D	2004CalfOf2460			SAG, FLIP, WH CHN, WH BEL, BEL/BEL	FACSFACJAX	1127	1137	NRW07292	
2/15/2007	1104	FWS555	29.95791	-81.24919	E	SE07CT12			SAG, BEL/BEL, WH CHN, WH BEL	FACSFACJAX	1127	1137	NRW07292	
2/15/2007	1104	FWS555	29.95791	-81.24919	1	SE07CT06			SAG,	FACSFACJAX	1127	1137	NRW07292	
2/15/2007	1229	FWS555	29.42516	-81.07392	F	BK23	F/UNK		W/CALF, NURS, BOD CNT	FACSFACJAX	1242	1251	NRW07294	
2/15/2007	1229	FWS555	29.42516	-81.07392	G	2007CalfOfBK23		X	CALF W/MOM, NURS, BOD CNT	FACSFACJAX	1242	1251	NRW07294	
2/15/2007	1301	FWS555	29.82597	-81.10823	H	3333	M/4		SAG	FACSFACJAX	1352	1402	NRW07297	
2/15/2007	1301	FWS555	29.82597	-81.10823	I	3150	M/6		SAG, BEL/BEL, MOPN, WH CHN, WH BEL, CHN BRCH, BUBLS	FACSFACJAX	1352	1402	NRW07297	
2/15/2007	1301	FWS555	29.82597	-81.10823	J	2004CalfOf2330			SAG, BEL/BEL	FACSFACJAX	1352	1402	NRW07297	
2/15/2007	1301	FWS555	29.82597	-81.10823	K	SE07CT09			SAG, BEL/BEL, BRCH	FACSFACJAX	1352	1402	NRW07297	
2/15/2007	1301	FWS555	29.82597	-81.10823	L	2910	UNK/UNK		SAG, BEL/BEL	FACSFACJAX	1352	1402	NRW07297	
2/15/2007	1301	FWS555	29.82597	-81.10823	M	SE07BK08			SAG, BEL/BEL	FACSFACJAX	1352	1402	NRW07297	
2/15/2007	1301	FWS555	29.82597	-81.10823	N	SE06CT02			SAG, BEL/BEL	FACSFACJAX	1352	1402	NRW07297	
2/15/2007	1452	FWS555	29.92715	-81.23801	O	SE07CT06			SAG		1511			Resight, not reported again
2/15/2007	1452	FWS555	29.92715	-81.23801	P	CT01BOF05			SAG, FLIP		1511			
2/15/2007	1452	FWS555	29.92715	-81.23801	Q	SE07CT12			SAG, WH CHN, WH BEL		1511			
2/15/2007	1452	FWS555	29.92715	-81.23801	R	SE06BK15			SAG, HD LFT		1511			
2/15/2007	1452	FWS555	29.92715	-81.23801	S	2004CalfOf2460			SAG, WH CHN, WH BEL		1511			
2/15/2007	1452	FWS555	29.92715	-81.23801	T	3346	M/4		SAG, ENTGL		1511			Entangled Whale "Kingfisher"
2/15/2007	1452	FWS555	29.92715	-81.23801	U	2005CalfOf1140			SAG,		1511			
2/17/2007	0926	FWS555	29.93112	-81.23705	A	SE07CT14			BEL/BEL, BODO	FACSFACJAX	0941	0946	NRW07301	Whale/Vessel Interaction
2/17/2007	0926	FWS555	29.93112	-81.23705	B	SE07CT15			BEL/BEL, BODO	FACSFACJAX	0941	0946	NRW07301	Whale/Vessel Interaction
2/17/2007	1000	FWS555	30.17331	-81.35707	C	1620	F/UNK		W/CALF, BODO, SUB TR	FACSFACJAX	1018	1029	NRW07303	
2/17/2007	1000	FWS555	30.17331	-81.35707	D	2007CalfOf1620		X	CALF W/MOM, BODO, SUB TR	FACSFACJAX	1018	1029	NRW07303	
2/19/2007	1540	FWS555	29.97380	-81.16420	A	1608	F/21		LOG, BOD CNT	FACSFACJAX	1548	1555	NRW07311	
2/19/2007	1540	FWS555	29.97380	-81.16420	B	3351	F/4		LOG, BOD CNT	FACSFACJAX	1548	1555	NRW07311	
2/20/2007	0858	FWS555	29.94294	-81.26234	A	3351	F/4		LOG	FACSFACJAX	0912	0916	NRW07312	
2/20/2007	0858	FWS555	29.94294	-81.26234	B	2005CalfOf1140			LOG	FACSFACJAX	0912	0916	NRW07312	
2/20/2007	1008	FWS555	30.19028	-81.23106	C	2642	F/11		W/CALF	FACSFACJAX	1022	1027	NRW07315	
2/20/2007	1008	FWS555	30.19028	-81.23106	D	2007CalfOf2642		X	CALF W/MOM	FACSFACJAX	1022	1027	NRW07315	
2/20/2007	1034	FWS555	30.12787	-81.32330	E	2145	F/16		W/CALF, BOD CNT	FACSFACJAX	1044	1051	NRW07319	
2/20/2007	1034	FWS555	30.12787	-81.32330	F	2007CalfOf2145		X	CALF W/MOM, BOD CNT	FACSFACJAX	1044	1051	NRW07319	
2/20/2007	1159	FWS555	29.97723	-81.13389	G	2430	F/13		W/CALF, NURS	FACSFACJAX	1208	1212	NRW07323	
2/20/2007	1159	FWS555	29.97723	-81.13389	H	2007CalfOf2430		X	CALF W/MOM, NURS	FACSFACJAX	1208	1212	NRW07323	
2/21/2007	0935	FWS555	30.14920	-81.04211	A	SE07BK12			SAG, FLIP, BEL/BEL, CHN BRCH	FACSFACJAX	0956	1025	NRW07328	
2/21/2007	0935	FWS555	30.14920	-81.04211	B	SE07CT18			SAG, FLIP, BEL/BEL, HD LFT	FACSFACJAX	0956	1025	NRW07328	
2/21/2007	0935	FWS555	30.14920	-81.04211	C	2740	M/10		SAG, FLIP, BEL/BEL	FACSFACJAX	0956	1025	NRW07328	
2/21/2007	1003	FWS555	30.12099	-81.03199	D	SE07BK13				FACSFACJAX	1018	1025	NRW07329	
2/21/2007	1130	FWS555	30.06731	-81.32102	E	2430	F/13		W/CALF, BODO, FLIP, POST	FACSFACJAX	1207	1224	NRW07331	Whale/Helo/Vessel Interaction
2/21/2007	1130	FWS555	30.06731	-81.32102	F	2007CalfOf2430		X	CALF W/MOM, BODO, FLIP	FACSFACJAX	1207	1224	NRW07331	Whale/Helo/Vessel Interaction
2/22/2007	1243	FWS555	29.92332	-81.26500	A	2430	F/13		W/CALF	FACSFACJAX	1252	1300	NRW07338	
2/22/2007	1243	FWS555	29.92332	-81.26500	B	2007CalfOf2430		X	CALF W/MOM	FACSFACJAX	1252	1300	NRW07338	
2/22/2007	1305	FWS555	29.81058	-81.06699	C	3442	UNK/3		SAG, BEL/BEL, WH CHN, WH BEL	FACSFACJAX	1326	1331	NRW07339	
2/22/2007	1305	FWS555	29.81058	-81.06699	D	SE07BK13			SAG BEL/BEL, UW EXH, WH CHN	FACSFACJAX	1326	1331	NRW07339	
2/22/2007	1305	FWS555	29.81058	-81.06699	E	2740	M/10		SAG	FACSFACJAX	1326	1331	NRW07339	
2/22/2007	1305	FWS555	29.81058	-81.06699	F	SE07CT19			SAG, WH CHN	FACSFACJAX	1326	1331	NRW07339	

Table 3: FWRI Aerial Survey Sightings - Identifications are PRELIMINARY

2/22/2007	1305	FWS555	29.81058	-81.06699	G	1971	M/18		SAG	FACSFACJAX	1326	1331	NRW07339	
2/22/2007	1305	FWS555	29.81058	-81.06699	H	SE06CT02			SAG	FACSFACJAX	1326	1331	NRW07339	
2/22/2007	1305	FWS555	29.81058	-81.06699	I	SE07CT18			SAG, BEL/BEL	FACSFACJAX	1326	1331	NRW07339	
2/22/2007	1404	FWS555	29.87909	-81.01570	J	SE06BK15				FACSFACJAX	1428	1432	NRW07344	
2/22/2007	1404	FWS555	29.87909	-81.01570	K	SE07CT06				FACSFACJAX	1428	1432	NRW07344	
2/22/2007	1404	FWS555	29.87909	-81.01570	L	3346	M/4		ENTGL	FACSFACJAX	1428	1432	NRW07344	Entangled Whale "Kingfisher"
2/22/2007	1725	FWS555	30.24477	-81.20407	M	2642	F/11		W/CALF	FACSFACJAX	1730	1753	NRW07351	
2/22/2007	1725	FWS555	30.24477	-81.20407	N	2007CalfOf2642		X	CALF W/MOM	FACSFACJAX	1730	1753	NRW07351	
2/24/2007	1408	FWS555	30.12161	-81.22251	A	SE07CT06			SAG, BODO	FACSFACJAX	1433	1442	NRW07359	
2/24/2007	1408	FWS555	30.12161	-81.22251	B	1146?	M/UNK		SAG, BODO	FACSFACJAX	1433	1442	NRW07359	
2/24/2007	1408	FWS555	30.12161	-81.22251	C	3346	M/4		SAG, BODO, ENTGL, CHN BRCH	FACSFACJAX	1433	1442	NRW07359	Entangled Whale "Kingfisher"
2/24/2007	1408	FWS555	30.12161	-81.22251	D	SE07CT18			SAG, BODO	FACSFACJAX	1433	1442	NRW07359	
2/24/2007	1408	FWS555	30.12161	-81.22251	E	SE07CT20			SAG, BODO	FACSFACJAX	1433	1442	NRW07359	
2/24/2007	1631	FWS555	29.92349	-81.21330	F	2430	F/13		W/CALF, BODO	FACSFACJAX	1723	1730	NRW07363	Whale/Vessel Interaction
2/24/2007	1631	FWS555	29.92349	-81.21330	G	2007CalfOf2430		X	CALF W/MOM, BODO, FLIP, ROLL	FACSFACJAX	1723	1730	NRW07363	Whale/Vessel Interaction
2/26/2007	1119	FWS555	30.23368	-81.31325	A	1608	F/21		SAG, FLIP, BODO	FACSFACJAX	1134	1147	NRW07369	
2/26/2007	1119	FWS555	30.23368	-81.31325	B	2004CalfOf2460			SAG, FLIP, ROLL, BODO, BEL UP, WH CHN, WH BEL	FACSFACJAX	1134	1147	NRW07369	
2/27/2007	1206	FWS555	30.16635	-81.27654	A	SE07CT10			BODO, BRCH, UW EXH	FACSFACJAX	1227	1234	NRW07385	
2/27/2007	1242	FWS555	30.12264	-81.23052	B	2004CalfOf2460			SAG, BEL/BEL, BEL UP, WH CHN, WH BEL	FACSFACJAX	1311	1319	NRW07389	
2/27/2007	1242	FWS555	30.12264	-81.23052	C	3442	UNK/3		SAG, BEL/BEL, WH CHN, WH BEL	FACSFACJAX	1311	1319	NRW07389	
2/27/2007	1242	FWS555	30.12264	-81.23052	D	1608	F/21		SAG, BEL/BEL	FACSFACJAX	1311	1319	NRW07389	
2/27/2007	1242	FWS555	30.12264	-81.23052	E	SE06BK15			SAG, BEL/BEL	FACSFACJAX	1311	1319	NRW07389	
2/27/2007	1320	FWS555	30.12828	-81.11584	F	3346	M/4		ENTGL	FACSFACJAX	1335	1337	NRW07390	Entangled Whale "Kingfisher"
2/27/2007	1320	FWS555	30.12828	-81.11584	G	2004CalfOf1321				FACSFACJAX	1335	1337	NRW07390	
2/27/2007	1320	FWS555	30.12828	-81.11584	H	2427	M/13			FACSFACJAX	1335	1337	NRW07390	Previously Entangled Whale
2/27/2007	1320	FWS555	30.12828	-81.11584	I	CT01BOF05				FACSFACJAX	1335	1337	NRW07390	
2/27/2007	1402	FWS555	30.07766	-81.11794	J	3314	UNK/4			FACSFACJAX	1411	1417	NRW07391	Previously Entangled Whale "Yellowfin"
2/28/2007	1101	FWS555	30.13144	-81.33798	A	SE07CT22			SUB TR	FACSFACJAX	1124	1131	NRW07407	
2/28/2007	1216	FWS555	30.08741	-81.24245	B	1608	F/21		BOD CNT	FACSFACJAX	1250	1254	NRW07411	
2/28/2007	1216	FWS555	30.08741	-81.24245	C	SE06BK15			BOD CNT	FACSFACJAX	1250	1254	NRW07411	
2/28/2007	1244	FWS555	30.08870	-81.24071	D	3442	UNK/3		SAG, BEL/BEL, FLIP, BEL UP, WH CHN, WH BEL	FACSFACJAX	1244	1254	NRW07411	First/Last Pass Same
2/28/2007	1244	FWS555	30.08870	-81.24071	E	2004CalfOf2460			SAG, BEL/BEL, FLIP, HD LFT, WH CHN, WH BEL	FACSFACJAX	1244	1254	NRW07411	
3/6/2007	1057	FWS555	30.04864	-81.05865	A	3139	UNK/6		SAG, BEL/BEL, FLIP	FACSFACJAX	1125	1131	NRW07429	
3/6/2007	1057	FWS555	30.04864	-81.05865	B	3232	UNK/5		SAG, BEL/BEL	FACSFACJAX	1125	1131	NRW07429	
3/12/2007	1157	FWS555	30.22176	-81.17326	A	SE07CT28			SAG, BODO, BEL/BEL	FACSFACJAX	1246	1248	NRW07477	Whale/Vessel Interaction
3/12/2007	1157	FWS555	30.22176	-81.17326	B	SE07BK20			SAG, BODO, BEL/BEL, WH BEL, WH CHN	FACSFACJAX	1246	1248	NRW07477	Whale/Vessel Interaction
3/12/2007	1157	FWS555	30.22176	-81.17326	C	1719	F/UNK		SAG, BODO, BEL/BEL	FACSFACJAX	1246	1248	NRW07477	Whale/Vessel Interaction
3/12/2007	1157	FWS555	30.22176	-81.17326	D	SE07BK22			SAG, BODO, BEL/BEL	FACSFACJAX	1246	1248	NRW07477	Whale/Vessel Interaction
3/12/2007	1356	FWS555	30.06034	-81.16169	E	1701	F/20		W/CALF, NURS, BODO	FACSFACJAX	1407	1410	NRW07480	
3/12/2007	1356	FWS555	30.06034	-81.16169	F	2007CalfOf1701		X	CALF W/MOM, NURS, BODO	FACSFACJAX	1407	1410	NRW07480	
3/13/2007	0954	FWS555	30.21338	-80.99123	A	SE07CT28			SAG, BEL/BEL	FACSFACJAX	1012	1019	NRW07487	
3/13/2007	0954	FWS555	30.21338	-80.99123	B	SE07BK20			SAG, BEL/BEL	FACSFACJAX	1012	1019	NRW07487	
3/13/2007	0954	FWS555	30.21338	-80.99123	C	1719	F/UNK		SAG, BEL/BEL	FACSFACJAX	1012	1019	NRW07487	
3/20/2007	1013	FWS555	30.23291	-81.29395	A	2611	F/11		W/CALF, NURS	FACSFACJAX	1029	1031	NRW07506	
3/20/2007	1013	FWS555	30.23291	-81.29395	B	2007CalfOf2611		X	CALF W/MOM, NURS	FACSFACJAX	1029	1031	NRW07506	

*Behavior Codes: AGG VSL = Aggressive Vessel,AVD = Avoidance,BOD CNT = Body Contact,BODO = Associated with Bottlenose Dolphins,BEL/BEL = Belly to Belly Contact,BEL UP = Belly Up,BRCH = Breach,BUBLS = Bubbles Observed,CHN BRCH = Chin Breach,ENTGL = Entangled,FLIP = Flipper Slapping,HD LFT = Head Lift,LBTL = Lobtail,LOG = Logging,MOPN = Mouth Open,NURS = Nursing,POST = Posturing,RAND SUB TR = Random Subsurface Travel,ROLL = Rolling (not in SAG),SAG = Surface Active Group,SFC TR = Surface Travel,SPY = Spyhopping,SUB TR = Subsurface Travel,UW EXH = Underwater Exhale,W/UNPH EG(S) = With Unphotographed Eg(s),WH BEL = White Belly,WH CHN = White Chin,YRLG = Yearling

Table 4: FWRI 2006-2007 Humpback Whale Sightings

Date	Time (L)	Latitude (Dec Degrees)	Longitude (Dec Degrees)	Number of Whales	Behaviors	Photos	Notes
12/16/2006	1014	30.08134	-81.33575	1	Associated with dolphin, Slow swimming <1knot	Yes	
12/16/2006	1348	30.33236	-81.37169	1	Associated with dolphin	Yes	Scarred dorsal, caudal peduncle, and leading edge of fluke
1/30/2007	0959	30.18288	-81.31241	1	Dive, flukes raised, Obvious change in direction, Defecation, Associated with dolphin	Yes	Thin, scratches on right side, brown defecation
2/10/2007	1317	27.92733	-80.46816	1		No	Coastal survey FWCLE Plane
2/19/2007	1336	30.21483	-81.36574	1	Moderate swimming, Dive, flukes not raised, Associated with dolphin	No	No photos due to delayed take off and time restrictions
2/21/2007	1047	30.03833	-81.28674	1	Breach, Dive, flukes not raised	Yes	
3/24/2007	0955	30.24958	-81.20107	1	Moderate swimming, Spyhopping	Yes	
3/26/2007	0959	30.10874	-81.23269	1	Swimming below surface, Breach, Logging	Yes	Scars on leading edge of fluke
3/26/2007	1044	30.08227	-81.25106	1	Slow swimming <1knot, Swimming below surface, Flippering, Breach	Yes	Ventral fluke photographed -Type 4. Scars on leading edge of fluke.

Table 5: FWRI Whale/Vessel Interactions 2006-2007

Date	Unique ID	Team	Whale EGNO	Initial Whale LAT	Initial Whale LONG	Vessel #	Close Approach	Vessel Type	Estimated Initial Vessel Speed (kts)	Closest Distance (m)	Initial Whale Behavior	Reaction to Vessel	Comm Attempted	Communication Notes	Vessel Actions
12/16/2006	1	FWRI	1425/Calf	30.17167	-81.20000	1	No	Recreational	Fast	15	Surface Resting	Head Lift, Dive	No	Interaction observed from land.	No change
						2	No	Recreational	Fast	30	Surface Resting	No	No	Interaction observed from land.	No change
1/15/2007	28	FWRI	1710/Calf	30.16633	-81.35333	1	Yes	Recreational	<1	15	Traveling	No	No	Vessel was Kayak. Spoke with kayakers on beach after interaction.	No change
						2	Yes	Recreational	<1	15	Traveling	No	No	Vessel was Kayak. Spoke with kayakers on beach after interaction.	No change
						3	Yes	Recreational	<1	15	Traveling	No	No	Vessel was Kayak. Spoke with kayakers on beach after interaction.	No change
1/27/2007	231	FWRI	2430/Calf	30.16667	-81.30017	1	Yes	Tug and Barge	8	23	Milling	No	Yes	Hailed on 16 after tug turned towards whales, answered promptly.	Tug altered course again and returned to previous heading after plane made contact. Would have cleared whales by a much larger distance had it not altered course towards whales.
2/16/2007	2	FWRI	1 Unk	30.03556	-81.32306	1	Yes	Helicopter	Fast	20	Traveling	Dive, Change Direction	Yes	Hailed in 16, negative contact. FWRI-PIC called St. Augustine tower. Tower was able to make contact with the HELO.	Departed quickly to the north.
2/17/2007	41	FWRI	2 Unks	29.93500	-81.24833	1	No	Recreational	25	61	Milling, Belly to Bellly	No	Yes	Hailed on 16, negative contact.	No change
2/21/2007	326	FWRI	2430/Calf	30.06731	-81.32102	1	Yes	Helicopter	80	15	Unkown	No	Yes	Hailed on aviation frequencies, negative contact. St. Augustine tower not in communication either.	After hovering for awhile the HELO departed to the north.
						2	Yes	Recreational	0	46	Rolling, Milling, Nursing	No	Yes	Hailed on 16, negative contact. FL RHIB approached to inform captain of 500 yard rule.	Stationary upon approach the turned and headed towards RHIB on a plane. After explaining the 500 yard rule the vessel departed to the north (heading directly past the whales), fast, and on a plane.
2/24/2007	382	FWRI	2430/Calf	29.92349	-81.21330	1	Yes	Recreational	0	15	Milling, Calf - Rolling, Fluking	No	No	Vessel departed as soon as plane arrived on scene.	Departed on a plane with no apparent visual on the whales.
						2	Yes	Commercial Fish	0	15	Milling, Calf - Rolling, Fluking	No	Yes	Hailed on 16, captain responded on behalf of himself and an outbound sister vessel.	Vessel disabled and had to be towed by another sport fishing vessel (vessel 5 of 7). After remaining with the whales for almost an hour the vessel departed slowly under tow.

Table 5: FWRI Whale/Vessel Interactions 2006-2007

Date	Unique ID	Team	Whale EGNO	Initial Whale LAT	Initial Whale LONG	Vessel #	Close Approach	Vessel Type	Estimated Initial Vessel Speed (kts)	Closest Distance (m)	Initial Whale Behavior	Reaction to Vessel	Comm Attempted	Communication Notes	Vessel Actions
						3	Yes	Commercial Fish	20	46	Milling, Calf - Rolling, Fluking	No	Yes	Hailed on 16, negative contact. General broadcast stating 500 yard rule on 16.	Vessel altered course slightly when almost abeam whales, but immediately resumed original course and did not slow down.
						4	No	Commercial Fish	20	183	Milling, Calf - Rolling, Fluking	No	Yes	Hailed on 16, negative contact. General broadcast stating 500 yard rule on 16.	Vessel stopped after plane's broadcast of whales position, idled for a few minutes, then altered course 90 degrees to the south and idled 500 yards away from whales before turning west again and resuming speed.
						5	Yes	Commercial Fish	20	91	Milling, Calf - Rolling, Fluking	No	Yes	Hailed on 16, negative contact. General broadcast stating 500 yard rule on 16. Sister vessel reported this vessel was coming to tow them.	Vessel approached slowly to tow disabled sister vessel (2 of 7). Departed slowly with sister vessel in tow.
						6	No	Commercial Fish	20	366	Milling, Calf - Rolling, Fluking	No	Yes	Hailed on 16, negative contact. General broadcast stating 500 yard rule on 16.	No change
						7	Yes	Commercial Fish	20	137	Milling, Calf - Rolling, Fluking	No	Yes	Hailed on 16, negative contact. General broadcast stating 500 yard rule on 16.	Vessel was heading out of inlet towards whales on a plane then stopped short of the whales, idled, then turned back towards the inlet under 1/2 speed and stopped again approx 2 miles east of whales. Plane had to depart due to diminishing daylight.
3/12/2007	66	FWRI	4 Unks	30.22176	-81.17326	1	No	Recreational	26	1609	SAG	No	Yes	Hailed on 16, answered promptly. Advised had 2 lookouts on post.	Vessel altered course around whales position.
3/12/2007	304	FWRI	1701/Calf	30.05325	-81.15599	2	No	USCG Cutter	20	61	Nursing	No	No	Vessel clearly had whales in sight and was maintaining distance.	Vessel verified whales, turned and headed away from whales slowly, then reported whales to FACSFACJAX

Table 6: FWRI Opportunistic Land-Based Sightings - Identifications are PRELIMINARY

Date	Time (L)	Survey Name	Latitude (Dec Degrees)	Longitude (Dec Degrees)	RIWH Letter	NARWC ID No Or Intermatch Code	Sex/Age	Calf	Behaviors*	Agency Notified	Last Sighting Time (L)	Time (L) Notified	NRW Number	Comments
12/27/2006	0900	FWC999	30.01716	-81.3215	A	2430	F/13		W/CALF, FLIP, BODO	FACSFACJAX	1100	0940	NRW07044	
12/27/2006	0900	FWC999	30.01716	-81.3215	B	2007CalfOf2430		X	CALF W/MOM, FLIP, BODO	FACSFACJAX	1100	0940	NRW07044	
12/29/2006	0845	FWC999	29.600	81.170	A	2430	F/13		W/CALF, FLIP	FACSFACJAX	0910			Reported by MRC
12/29/2006	0845	FWC999	29.600	81.170	B	2007CalfOf2430		X	CALF W/MOM, FLIP	FACSFACJAX	0911			Reported by MRC
1/3/2007	1421	FWC999	29.670	-81.200	A	2430	F/13		W/CALF	FACSFACJAX	1429			Reported by MRC
1/3/2007	1421	FWC999	29.670	-81.200	B	2007CalfOf2430		X	CALF W/MOM	FACSFACJAX	1429			Reported by MRC
1/12/2007	1415	FWC999	29.950	-81.300	A	1710	F/UNK		W/CALF, BODO	FACSFACJAX	1415	1500	NRW07100	
1/12/2007	1415	FWC999	29.950	-81.300	B	2007CalfOf1710		X	CALF W/MOM, BODO	FACSFACJAX	1415	1500	NRW07100	
1/13/2007	0933	FWC999	29.960	-81.300	A	2005CalfOf1140			FLIP, POST	FACSFACJAX	1144			Reported by FWS555
1/15/2007	1508	FWC999	30.170	-81.350	A	1710	F/UNK		W/CALF, BODO	FACSFACJAX	1548			Whale/Vessel Interaction, Reported by FWS555
1/15/2007	1508	FWC999	30.170	-81.350	B	2007CalfOf1710		X	CALF W/MOM, BODO	FACSFACJAX	1548			Whale/Vessel Interaction
1/21/2007	1500	FWC999	29.97166	-81.29083	A	2601	F/11		W/CALF, BOD CNT, BODO	FACSFACJAX	1710	1714	NRW07150	
1/21/2007	1500	FWC999	29.97166	-81.29083	B	2007CalfOf2601		X	CALF W/MOM, BOD CNT, BODO	FACSFACJAX	1710	1714	NRW07150	
1/27/2007	1728	FWC999	30.020	-81.330	A	2430	F/13		W/CALF, FLIP	FACSFACJAX	1739			Reported by FWS555
1/27/2007	1728	FWC999	30.020	-81.330	B	2007CalfOf2430		X	CALF W/MOM, FLIP	FACSFACJAX	1739			Reported by FWS555
1/31/2007	0853	FWC999	29.95183	-81.300	A				W/CALF	FACSFACJAX	1015	0900	NRW07195	ID not made; far offshore
1/31/2007	0853	FWC999	29.95183	-81.300	B				CALF W/MOM	FACSFACJAX	1015	0900	NRW07195	
2/13/2007	1705	FWC999	30.01667	-81.31667	A	2430	F/13		W/CALF, BOD CNT, BODO, SFC TR	FACSFACJAX	1805	1713	NRW07281	
2/13/2007	1705	FWC999	30.01667	-81.31667	B	2007CalfOf2430		X	CALF W/MOM, BODO, BOD CNT, SFC TR, FLIP	FACSFACJAX	1805	1713	NRW07281	
2/14/2007	0921	FWC999	30.030	-81.320	A				LBTL, SAG, W/UNPH EG(S)	FACSFACJAX	1310			Total 15 +/-5 whales in SAG, reported by FWS555
2/14/2007	1103	FWC999	30.030	-81.320	B-?				SAG, BRCH, FLIP	FACSFACJAX	1310			Total 15 +/-5 whales in SAG, reported by FWS555
2/16/2007	1115	FWC999	30.03556	-81.32361	A				BODO, SFC TR, AVD, AGG VSL	FACSFACJAX	1215	1209	NRW07299	Whale/Helo Interaction
2/18/2007	1220	FWC999	30.1447	-81.35215	A	2430	F/13		W/CALF, FLIP, BOD CNT	FACSFACJAX	1340	1449	NRW07306	
2/18/2007	1220	FWC999	30.1447	-81.35215	B	2007CalfOf2430		X	CALF W/MOM, FLIP, BOD CNT	FACSFACJAX	1340	1449	NRW07306	
2/18/2007	1315	FWC999	30.13501	-81.34980	C	2430	F/13		W/CALF	FACSFACJAX	1422	1449	NRW07307	
2/18/2007	1315	FWC999	30.13501	-81.34980	D	2007CalfOf2430		X	CALF	FACSFACJAX	1422	1449	NRW07307	
3/7/2007	1628	FWC999	30.20167	-81.350	A	1620	F/UNK		W/CALF	FACSFACJAX	1700	1640	NRW07444	
3/7/2007	1628	FWC999	30.20167	-81.350	B	2007CalfOf1620		X	CALF W/MOM	FACSFACJAX	1700	1640	NRW07444	
3/20/2007	1632	FWC999	30.210	-81.360	A	2611	F/11		W/CALF	FACSFACJAX	1648			Reported by FWS555
3/20/2007	1632	FWC999	30.210	-81.360	B	2007CalfOf2611		X	CALF W/MOM	FACSFACJAX	1648			Reported by FWS555

*Behavior Codes: AGG VSL = Aggressive Vessel,AVD = Avoidance,BOD CNT = Body Contact,BODO = Associated with Bottlenose Dolphins,BEL/BEL = Belly to Belly Contact,BEL UP = Belly Up,BRCH = Breach,BUBLS = Bubbles Observed,CHN BRCH = Chin Breach,ENTGL = Entangled,FLIP = Flipper Slapping,HD LFT = Head Lift,LBTL = Lobtail,LOG = Logging,MOPN = Mouth Open,NURS = Nursing,POST = Posturing,RAND SUB TR = Random Subsurface Travel,ROLL = Rolling (not in SAG),SAG = Surface Active Group,SFC TR = Surface Travel,SPY = Spyhopping,SUB TR = Subsurface Travel,UW EXH = Underwater Exhale,W/UNPH EG(S) = With Unphotographed Eg(s),WH BEL = White Belly,WH CHN = White Chin,YRLG = Yearling