

## Monitoring of Protected Species in the Proposed Jacksonville USWTR

### Progress Report: Jan-Mar 2009

#### Survey activity

Aerial surveys were conducted by the UNCW team in the JAX USWTR on January 27 and 28, covering each trackline once. Aerial surveys were also conducted on February 26 and 27, covering each trackline twice. These surveys are being conducted by directing previously funded aerial survey days for Onslow Bay to the JAX USWTR. No vessel surveys were conducted in the JAX USWTR during March.

In January the aerial survey team detected bottlenose dolphins (*Tursiops truncatus*) and Atlantic spotted dolphins (*Stenella frontalis*) in the JAX USWTR, as well as an unidentified baleen whale. The survey team also had sightings of loggerhead turtles (*Caretta caretta*), hammerhead sharks (*Sphyrna* sp) and cownose rays (*Rhinoptera bonasus*). The details on these sightings are presented in Table 1.

Table 1. Sightings obtained during aerial surveys in the JAX USWTR in January 2009

Date	Time	Effort	Latitude	Longitude	Line	Species	Group Size
27-Jan-09	14:22	On	30.1737	-79.8879	4	Unid Baleen whale	1
27-Jan-09	12:41	On	29.9627	-80.6767	1	<i>Caretta caretta</i>	1
27-Jan-09	13:37	On	30.0362	-80.5101	2	<i>Caretta caretta</i>	1
27-Jan-09	14:40	On	30.1768	-80.5727	4	<i>Stenella frontalis</i>	100
27-Jan-09	12:47	On	29.9564	-80.4963	1	<i>Tursiops truncatus</i>	15
27-Jan-09	15:20	On	30.2281	-80.0084	5	<i>Tursiops truncatus</i>	25
27-Jan-09	13:34	On	30.0350	-80.3770	2	Unid. Turtle	1
27-Jan-09	15:51	On	30.3015	-80.4836	6	Unid. Turtle	1
27-Jan-09	13:09	On	29.9608	-80.0991	1	<i>Sphyrna</i> sp	1
27-Jan-09	13:41	On	30.0351	-80.6608	2	<i>Sphyrna</i> sp	1
27-Jan-09	15:05	On	30.2121	-80.5496	5	<i>Sphyrna</i> sp	1
27-Jan-09	13:05	On	29.9645	-80.2439	1	Unid. Delphinid	5
27-Jan-09	14:56	On	30.1738	-80.6480	4	<i>Rhinoptera bonasus</i>	200
27-Jan-09	12:42	On	29.9637	-80.6398	1	Unid. Turtle	1
27-Jan-09	12:43	On	29.9631	-80.6227	1	Unid. Turtle	2
27-Jan-09	12:45	On	29.9639	-80.5595	1	Unid. Turtle	1
27-Jan-09	12:53	On	29.9619	-80.4700	1	Unid. Turtle	1
27-Jan-09	13:46	On	30.0953	-80.6559	3	Unid. Turtle	1
27-Jan-09	13:50	On	30.0991	-80.5014	3	Unid. Turtle	1
27-Jan-09	15:04	On	30.2170	-80.5940	5	Unid. Turtle	1
28-Jan-09	11:25	On	30.4303	-80.5010	8	<i>Caretta caretta</i>	1
28-Jan-09	11:36	On	30.4985	-80.5878	9	<i>Caretta caretta</i>	1

In February the aerial survey team detected bottlenose dolphins, Atlantic spotted dolphins, Risso's dolphins (*Grampus griseus*), minke whales (*Balaenoptera acutorostrata*) and unidentified delphinds in the JAX USWTR, as well as loggerhead turtles, a leatherback turtle (*Dermochelys coriacea*), hammerhead sharks and ocean sunfish (*Mola mola*). One minke whale sighting included the presence of a calf. The details on these sightings are presented in Table 2.

Table 2. Sightings obtained during aerial surveys in the JAX USWTR in February 2009

Date	Time	Effort	Latitude	Longitude	Line	Species	Group Size
26-Feb-09	9:31	On	30.5676	-80.6743	10	<i>Caretta caretta</i>	1
26-Feb-09	9:34	On	30.5655	-80.5921	10	<i>Caretta caretta</i>	1
26-Feb-09	9:37	On	30.5666	-80.4877	10	<i>Caretta caretta</i>	1
26-Feb-09	9:42	On	30.5648	-80.3118	10	<i>Caretta caretta</i>	1
26-Feb-09	9:44	On	30.5666	-80.2169	10	<i>Caretta caretta</i>	1
26-Feb-09	9:59	On	30.5652	-79.8278	10	Unid. Delphind <i>Balaenoptera</i>	12
26-Feb-09	10:06	On	30.5660	-79.8307	10	<i>acutorostrata</i>	1
26-Feb-09	10:39	On	30.4987	-80.2179	9	<i>Sphyrna sp</i>	2
26-Feb-09	10:40	On	30.4985	80.2587	9	<i>Caretta caretta</i>	1
26-Feb-09	10:42	On	30.4991	-80.2967	9	<i>Manta birostris</i>	1
26-Feb-09	10:48	On	30.5006	-80.5358	9	<i>Caretta caretta</i>	1
26-Feb-09	10:50	On	30.4989	-80.5888	9	<i>Caretta caretta</i>	3
26-Feb-09	10:50	On	30.4993	-80.5766	9	<i>Caretta caretta</i>	1
26-Feb-09	10:51	On	30.4978	-80.6321	9	<i>Caretta caretta</i>	1
26-Feb-09	10:51	On	30.4982	-80.6203	9	<i>Caretta caretta</i>	1
26-Feb-09	10:52	On	30.4978	-80.6591	9	<i>Caretta caretta</i>	1
26-Feb-09	10:52	On	30.4983	-80.6786	9	<i>Caretta caretta</i>	1
26-Feb-09	10:52	On	30.4984	-80.6715	9	<i>Caretta caretta</i>	1
26-Feb-09	10:53	On	30.4898	-80.6822	9	Unid. Delphind	2
26-Feb-09	10:59	On	30.4867	-80.6832	9	<i>Mola mola</i>	1
26-Feb-09	11:10	On	30.4326	-80.5673	8	<i>Dermochelys coriacea</i>	1
26-Feb-09	11:22	On	30.4320	-80.4341	8	<i>Caretta caretta</i>	1
26-Feb-09	11:24	On	30.4331	-80.3673	8	<i>Caretta caretta</i>	1
26-Feb-09	13:45	On	30.2997	-80.4458	6	<i>Caretta caretta</i> <i>Balaenoptera</i>	1
26-Feb-09	14:13	On	30.2355	-79.9608	5	<i>acutorostrata</i>	3
26-Feb-09	14:38	On	30.2310	-80.3154	5	<i>Caretta caretta</i> <i>Balaenoptera</i>	1
26-Feb-09	15:26	On	30.1018	-80.0512	3	<i>acutorostrata</i>	1
26-Feb-09	15:52	On	30.0304	-80.5202	2	<i>Caretta caretta</i>	1
27-Feb-09	8:54	On	29.9655	-80.6060	1	<i>Caretta caretta</i>	1
27-Feb-09	8:54	On	29.9656	-80.5912	1	<i>Caretta caretta</i>	1
27-Feb-09	8:56	On	29.9605	-80.5519	1	<i>Tursiops truncatus</i>	1
27-Feb-09	9:03	On	29.9673	-80.5338	1	<i>Caretta caretta</i>	1
27-Feb-09	9:05	On	29.9663	-80.4347	1	<i>Caretta caretta</i>	1
27-Feb-09	9:06	On	29.9663	-80.4254	1	<i>Sphyrna sp</i>	1
27-Feb-09	9:06	On	29.9663	-80.4076	1	<i>Mola mola</i>	1
27-Feb-09	9:07	On	29.9665	-80.3659	1	<i>Mola mola</i>	1
27-Feb-09	9:18	On	29.9760	-80.1343	1	<i>Grampus griseus</i>	5
27-Feb-09	9:51	On	30.0307	-80.3420	2	<i>Caretta caretta</i>	1

27-Feb-09	9:52	On	30.0308	-80.3530	2	<i>Caretta caretta</i>	2
27-Feb-09	9:52	On	30.0310	-80.3762	2	<i>Caretta caretta</i>	1
27-Feb-09	9:54	On	30.0313	-80.4266	2	<i>Sphyrna sp</i>	1
27-Feb-09	9:55	On	30.0316	-80.4640	2	<i>Caretta caretta</i>	1
27-Feb-09	9:55	On	30.0315	-80.4751	2	<i>Caretta caretta</i>	1
27-Feb-09	9:56	On	30.0314	-80.5178	2	<i>Caretta caretta</i>	1
27-Feb-09	9:58	On	30.0358	-80.5530	2	<i>Tursiops truncatus</i>	3
27-Feb-09	10:02	On	30.0325	-80.6007	2	<i>Caretta caretta</i>	1
27-Feb-09	10:04	On	30.0310	-80.6604	2	<i>Caretta caretta</i>	1
27-Feb-09	10:10	On	30.1002	-80.6203	3	Unid Turtle	1
27-Feb-09	10:12	On	30.0997	-80.5712	3	<i>Sphyrna sp</i>	1
27-Feb-09	10:13	On	30.0986	-80.5576	3	<i>Caretta caretta</i>	1
27-Feb-09	10:14	On	30.0980	-80.5224	3	<i>Caretta caretta</i>	2
27-Feb-09	10:16	On	30.1025	-80.4712	3	<i>Tursiops truncatus</i>	19
27-Feb-09	10:59	On	30.1660	-80.3768	4	<i>Caretta caretta</i>	1
27-Feb-09	11:01	On	30.1690	-80.4292	4	<i>Tursiops truncatus</i>	4
27-Feb-09	11:13	On	30.1674	-80.5097	4	<i>Stenella frontalis</i>	7
27-Feb-09	11:34	On	30.2316	-80.6185	5	Unid cue	1
27-Feb-09	11:42	On	30.2336	-80.5560	5	<i>Caretta caretta</i>	1
27-Feb-09	11:44	On	30.2330	-80.4853	5	<i>Caretta caretta</i>	2
27-Feb-09	11:51	On	30.2308	-80.4404	5	Unid cue	1
27-Feb-09	11:55	On	30.2336	-80.3405	5	<i>Caretta caretta</i>	1
27-Feb-09	11:58	On	30.2333	-80.2274	5	<i>Caretta caretta</i>	1
27-Feb-09	12:28	On	30.2998	-80.3800	6	<i>Caretta caretta</i>	1
27-Feb-09	12:31	On	30.2997	-80.4804	6	<i>Sphyrna sp</i>	1
27-Feb-09	12:32	On	30.2995	-80.5211	6	<i>Caretta caretta</i>	1
27-Feb-09	12:37	On	30.2958	-80.5838	6	<i>Tursiops truncatus</i>	5
27-Feb-09	14:40	On	30.3661	-80.4891	7	<i>Tursiops truncatus</i>	1
27-Feb-09	14:44	On	30.3673	-80.3768	7	<i>Caretta caretta</i>	1
27-Feb-09	14:46	On	30.3673	-80.2938	7	<i>Caretta caretta</i>	1
27-Feb-09	14:48	On	30.3676	-80.2239	7	<i>Tursiops truncatus</i>	8
27-Feb-09	15:38	On	30.5001	-80.6011	9	<i>Caretta caretta</i>	1
27-Feb-09	16:08	On	30.5656	-80.0261	10	Unid cue	1

## HARP Deployments

Two HARPs are in the final stage of assembly at Scripps Institution of Oceanography. They will be delivered to the JAX staging location in Fernandina Beach, FL on March 25<sup>th</sup>, 2009 and the planned deployment window is between March 27 and April 1 2009. HARPs will be deployed at the locations illustrated in Figure 1.

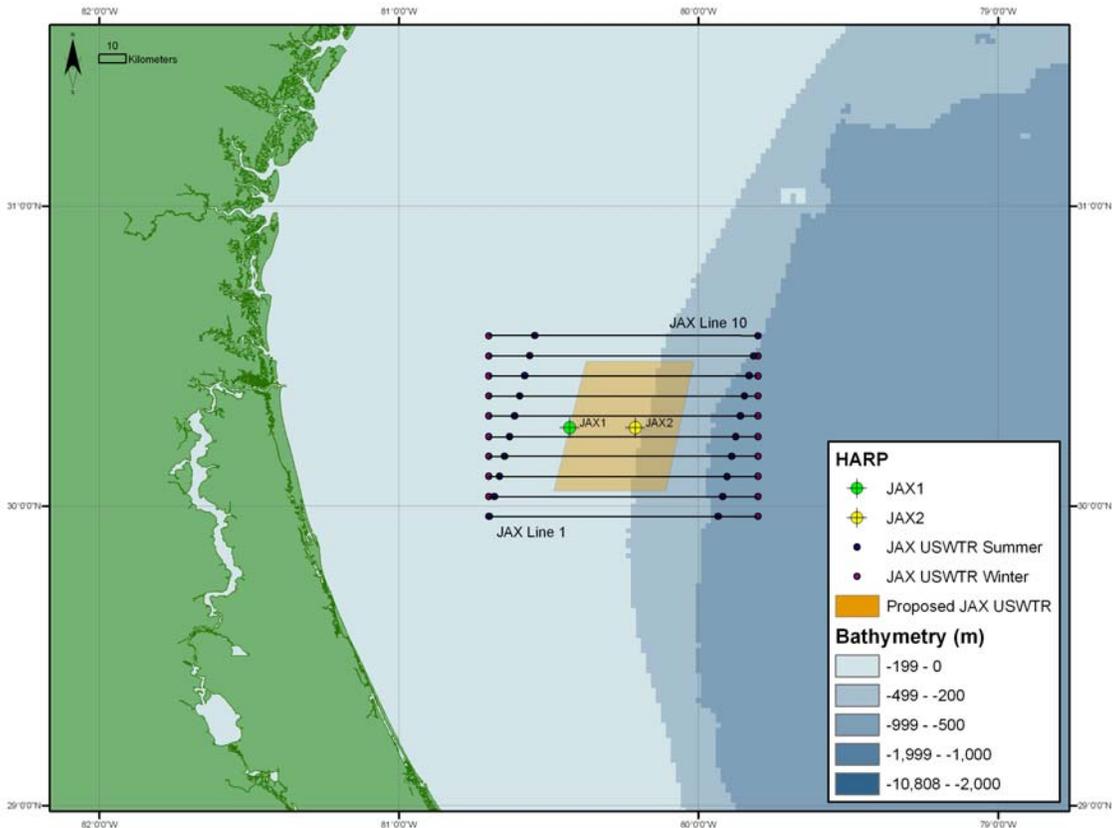


Figure 1. The location of HARP deployments in the JAX USWTR

## Planning and Hiring

A planning meeting and reconnaissance trip for the project was conducted in Fernandina Beach, FL during March 5-8. This meeting was convened and attended by Project Principle Investigators (PIs) Andrew Read (Duke), David Johnston (Duke), Ann Pabst (UNCW) and Bill McLellan (UNCW). PIs completed planning of the ongoing hiring process (separate for each institution) and rated the candidates for Duke-based observer positions. Other issues addressed during the planning meeting:

- Data Reporting
- Survey logistics and coordination between aerial and vessel-based effort
- Survey team make-up and reporting structure
- Survey Team accommodations
- Coordination with local researchers and other stakeholders.

The PIs assessed the HARP staging location and the boat to be used for HARP deployment and recovery. The PIs also assessed local boat charter companies and marinas for vessel-based surveys.

During March 9-13 PIs Read, Johnston, Pabst and McLellan conducted interviews of 3 applicants for Duke observer positions. Two candidates were offered employment, one accepted and the second declined due to a competing offer. Interviews of 3 more applicants have been completed by March 23, and we expect to offer employment to one of these candidates by March 27.

### **Travel**

Project PIs Read, Johnston, Pabst and McLellan traveled to Fernandina Beach, FL for a planning meeting and reconnaissance trip.

### **Purchasing**

Purchasing for the JAX project began on March 6, focusing primarily on equipment to be used for visual and passive acoustic observations during vessel-based surveys. Completed and ongoing purchases include:

- Computers and other hardware for logging visual and acoustic observations
- Digital camera and binoculars for visual surveys
- Analog to Digital converter for passive acoustic data acquisition
- A 4-element towed hydrophone array
- ORE deckbox and transducer for HARP deployment and recovery
- 4X1000lb HARP moorings

## Monitoring of Protected Species in the Proposed Jacksonville USWTR

Progress Report: March 24 through April 23

### Survey activity (Task 2)

The UNCW conducted aerial surveys in the proposed JAX USWTR site on March 31, covering 5 tracklines. The aerial survey team recorded six sightings of loggerhead turtles (*Caretta caretta*) during these surveys. Details on these sightings are presented in Table 1.

No vessel surveys were conducted in the JAX USWTR during March or April. We are in the final process of securing the services of a chartered vessel for these surveys. We expect to be working from a 38 ft Duffy commercial fishing boat/sport fishing vessel that has been converted to a research platform. This vessel is built for offshore work, providing excellent safety and sufficient speed for work in the JAX USWTR. We expect to begin vessel-based surveys in May 2009.

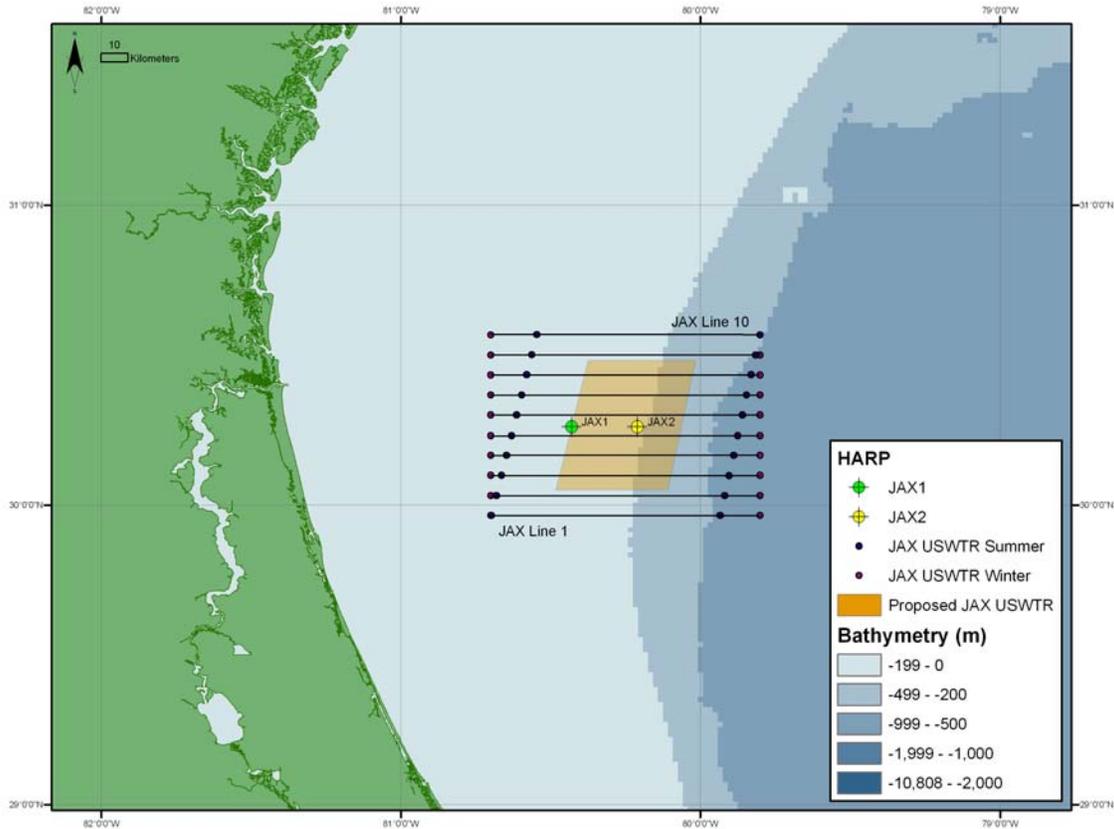
Table 1. Sightings obtained during aerial surveys in the JAX USWTR on March 31 2009

Date	Time	Effort	Latitude	Longitude	Line	Species	Group Size
31-Mar-09	15:06	On	30.235758	-80.658041	5	<i>Caretta caretta</i>	1
31-Mar-09	15:12	On	30.233255	-80.417950	5	<i>Caretta caretta</i>	1
31-Mar-09	15:47	On	30.301403	-80.437063	6	<i>Caretta caretta</i>	1
31-Mar-09	16:00	On	30.367652	-80.544145	7	<i>Caretta caretta</i>	1
31-Mar-09	16:02	On	30.364211	-80.492083	7	<i>Caretta caretta</i>	1
31-Mar-09	16:52	On	30.496036	-80.574488	9	<i>Caretta caretta</i>	1

### HARP Deployments (Task 3)

We prepared two HARPs from March 27 through 29 and deployed both in the proposed JAX USWTR site on March 30 2009. The first HARP was deployed at N30.2784 and W80.2164 in a depth of 81m. The second instrument was deployed near the inshore margin of the proposed JAX USWTR site, at N30.2582 and W80.4280 in a depth of 41m. These instruments will be recovered, refurbished and redeployed refurbishment in September 2009. The locations of these deployments are presented in figure 1.

Figure 1. The location of HARP deployments in the JAX USWTR



### Planning and Hiring (Task 1)

The project kickoff meeting was held by conference call on April 7 2009 and was attended by the Duke and UNCW research teams, as well as representatives of Parsons and the Navy. The meeting provided opportunities for a brief introduction to the USWTR project and for team members from participating organizations to meet each other. The meeting also provided an opportunity to brief Parsons and the Navy on recent developments in the project.

In early April Duke finalized hires of two biologists who will be participating in vessel and aerial surveys. We will be conducting vessel-based survey training at the Duke University Marine Laboratory during April 14 and 15. The two Duke observers will start employment on May 1, 2009.

UNCW has closed searches for the Survey Coordinator and third observer positions. UNCW Human Relations has conducted the first cut of the applicants and Pabst and McLellan have started the sorting process to produce a list for interviews. UNCW expects these two individuals to start employment on May 1, 2009.

**Travel (Task 1 & 3)**

Project PI Johnston and Post-doctoral Research Associate Melissa Soldevilla traveled to Fernandina Beach from March 27 through March 31 to prepare and deploy the HARPs.

Co-PIs Pabst & McLellan traveled to Duke Marine Lab on April 10<sup>th</sup> for a pre-training discussion meeting with PI Johnston. UNCW observers Nilsson and McAlarney and Co-PI McLellan will travel to Duke Marine Lab on April 14-15 to assist in observer classroom and on-water vessel training sessions for the two Duke observers.

**Purchasing (Task 1)**

Purchasing for the project continued in April, with the Duke team purchasing equipment to support data acquisition from the towed array. The towed array should arrive in Florida sometime in early July.

UNCW has started purchasing aerial survey equipment for the JAX surveys. Camera and lens, GPS units, binoculars, EPIRBS, and safety SWITLIK vests have all been purchased. Final decisions on laptop and desktop computers have been forwarded to UNCW purchasing and expect final approval by April 15, 2009.

## **Monitoring of Protected Species in the Proposed Jacksonville USWTR**

Progress Report: April 24 through May 23

### **Planning and Hiring (Task 1)**

In May UNCW finalized interviews and hired two biologists, one as the Coordinator/observer, who will act as the coordinator for the entire survey team, and one as an observer.

The entire survey team of 4x biologists is currently based in UNCW rental housing in Wilmington NC. We are maintaining the team in Wilmington for intensive aerial survey and data management training sessions. We are emulating the entire JAX set-up to ensure high efficiency once the team is stationed in Fernandina Beach, FL. We are monitoring weather windows in the JAX site for possible aerial survey effort.

We conducted intensive ground-based aerial-based survey training at UNCW for the entire survey team from May 20- 23.

### **Purchasing (Task 1)**

Purchasing for the project continued in May, with the UNCW team purchasing 2x computers and survey equipment for JAX.

### **Travel (Task 1 & 3)**

Co-PI McLellan traveled to St Augustine, Florida to present the USWTR JAX survey methodology and effort plans to the Southeast Implementation Team (SEIT) meeting on 12 May. The SEIT tracks recovery of endangered large whales in the southeast US. In attendance were several employees of National Marine Fisheries Service from both headquarters and the southeast region, state representatives from Florida Wildlife Commission and Georgia Department of Natural Resources, several NGOs and interested public.

### **Survey activity (Task 2)**

No aerial surveys were conducted in the JAX USWTR during May. An extended period of extremely poor weather plagued the aerial survey effort in May. No predicted window of workable weather longer than one day opened up for the entire month.

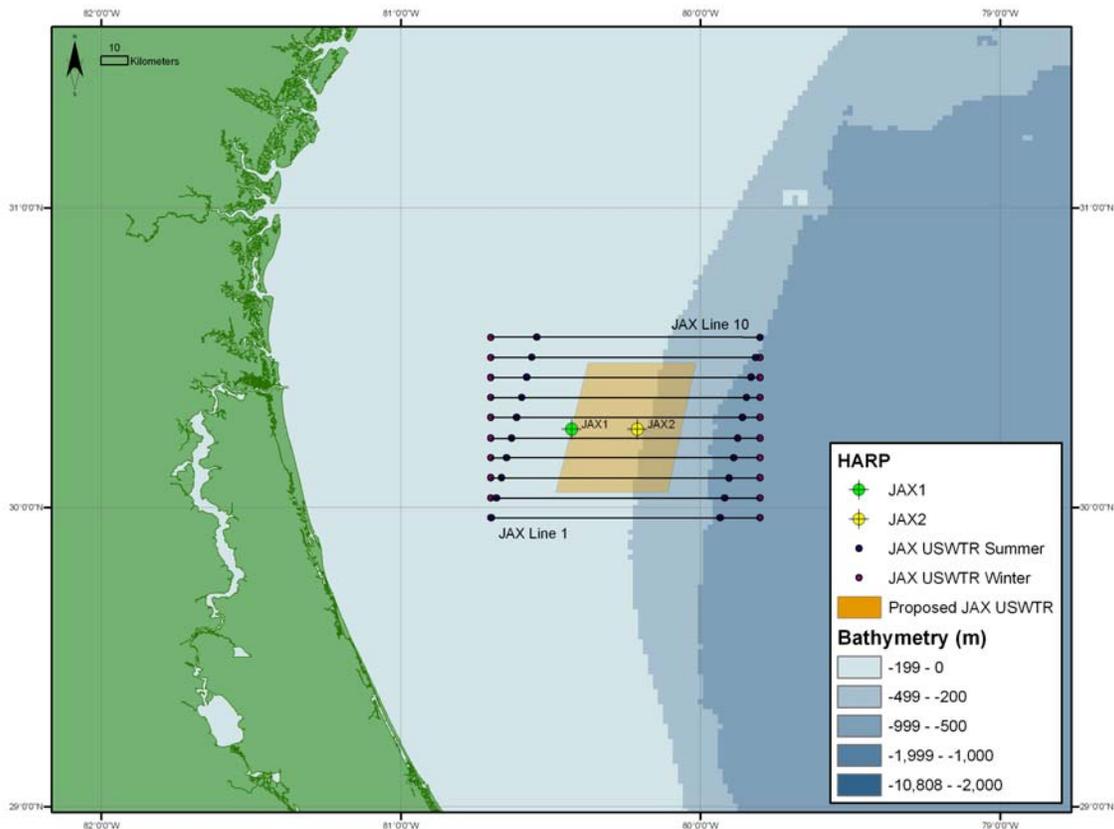
No vessel surveys were conducted in the JAX USWTR during May. We are in the final process of securing the services of a chartered vessel for these surveys. We expect to be working from a 38 ft Duffy commercial fishing boat/sport fishing vessel that has been converted to a research platform. This vessel is built for

offshore work, providing excellent safety and sufficient speed for work in the JAX USWTR. We expect to begin vessel-based surveys in June 2009.

### HARP Deployments (Task 3)

Two HARPs remain deployed in the original locations. These instruments will be recovered, refurbished and redeployed refurbishment in September 2009. The locations of these deployments are presented in Figure 1.

Figure 1. The location of HARP deployments in the JAX USWTR



No problems have been encountered in the past month or are expected in the upcoming month that will effect the completion of scheduled tasks.

## **Monitoring of Protected Species in the Proposed Jacksonville USWTR**

Progress Report: May 24 through June 23

### **Planning and Hiring (Task 1)**

We are maintaining the team in Wilmington for intensive aerial survey and data management training sessions. We are emulating the entire USWTR JAX set-up here in Wilmington to ensure all equipment is functioning before the team is stationed in Fernandina Beach, FL. The team will be stationed in Fernandina Beach on 1 July.

### **Purchasing (Task 1)**

Purchasing for the project continued in June, with the UNCW team purchasing additional survey equipment for JAX (e.g. computer, EPIRBs, flight suits, GPS units and office set up).

### **Travel (Tasks 1 & 3)**

Co-PIs McLellan and Pabst traveled to Fernandina beach, Florida to look for observer housing/ base of operations. A suitable house was located and secured in Fernandina Beach - a rental lease was drawn up starting 1 July 2009.

### **Survey activity (Task 2)**

Two full sets (20 track lines) of aerial surveys were conducted on June 9<sup>th</sup> through the 11<sup>th</sup> in excellent weather conditions (Table 1). Three cetacean species were encountered while on effort: bottlenose (*Tursiops truncatus*), Atlantic spotted (*Stenella frontalis*) and Risso's (*Grampus griseus*) dolphins as were two groups of unidentified delphinids (Table 2, Fig. 1). Numerous loggerhead sea turtles (*Caretta caretta*) and a small number of unidentified sea turtles were encountered in the survey area, primarily on the inshore ends of the track lines (Table 3, Fig.2).

No vessel surveys were conducted in the JAX USWTR during June. We are in the final process of securing the services of a chartered vessel for these surveys. We expect to be working from a 38 ft Duffy commercial fishing boat/sport fishing vessel that has been converted to a research platform. This vessel is built for offshore work, providing excellent safety and sufficient speed for work in the JAX USWTR. We expect to begin vessel-based surveys in July 2009.

Date	Line	Sea State	Kilometers flown
9-Jun-09	10	1 to 2	85.7
9-Jun-09	9	1 to 2	85.6
9-Jun-09	8	1 to 2	83.7
9-Jun-09	7	1 to 2	85.9
9-Jun-09	6	1	86.2
9-Jun-09	5	1	87.2
10-Jun-09	1	0 to 2	86.3
10-Jun-09	2	2 to 3	85.8
10-Jun-09	3	2 to 3	86.4
10-Jun-09	4	2 to 3	86.0
10-Jun-09	5	2	86.2
10-Jun-09	6	1 to 2	87.9
10-Jun-09	7	1 to 2	84.9
10-Jun-09	8	1 to 2	85.0
10-Jun-09	9	1 to 2	84.0
10-Jun-09	10	1 to 2	85.1
11-Jun-09	4	1 to 2	84.4
11-Jun-09	3*	2	70.2*
11-Jun-09	2	1 to 2	83.8
11-Jun-09	1	1 to 2	80.3

Table 1. Effort table for the Jacksonville USWTR site in June 2009. \* Line 3 on 11 June 2009 was truncated to give a wide berth to an aircraft carrier in the range.

Date	Time	On/Off Effort	Latitude	Longitude-1	Track Number	Observer	Species	Group Size
9-Jun-09	13:42	On effort	30.502732	-79.953532	9	Left	Ttr	8
9-Jun-09	14:02	On effort	30.505660	-80.452111	9	Left	Sfr	14
9-Jun-09	14:27	On effort	30.434622	-80.341820	8	Left	Sfr	6
10-Jun-09	10:55	On effort	30.161913	-80.401118	4	Left	Ttr	8
10-Jun-09	12:04	On effort	30.297996	-80.520986	6	Left	DELP	3
10-Jun-09	12:18	On effort	30.288698	-80.673378	6	Left	Ttr	18
10-Jun-09	12:25	On effort	30.302670	-80.704548	6	Left	Ttr	16
10-Jun-09	14:50	On effort	30.376196	-80.040349	7	Left	Ggr	14
10-Jun-09	15:32	On effort	30.428722	-80.554191	8	Left	Sfr	10
10-Jun-09	15:51	On effort	30.511654	-80.435801	9	Left	Sfr	7
10-Jun-09	16:07	On effort	30.493967	-80.117448	9	Left	Ggr	32
11-Jun-09	9:44	On effort	30.091657	-80.659760	3	Left	Ttr	4
11-Jun-09	10:27	On effort	30.027809	-80.045970	2	Left	DELP	3
11-Jun-09	10:53	On effort	29.967194	-79.804484	1	Left	Ttr	14
11-Jun-09	11:08	On effort	29.969022	-79.941584	1	Left	Ttr	16

Table 2. Cetacean sightings during aerial surveys in the Jacksonville USWTR site in June 2009.

Date	Time	On/Off Effort	Latitude	Longitude-1	Track Number	Observer	Species	Group Size
9-Jun-09	13:12	On effort	30.567156	-80.681325	10	Left	Cca	1
9-Jun-09	13:13	On effort	30.564338	-80.636044	10	Right	Cca	2
9-Jun-09	13:13	On effort	30.565601	-80.610332	10	Right	Cca	1
9-Jun-09	13:14	On effort	30.567262	-80.584025	10	Right	Cca	1
9-Jun-09	13:16	On effort	30.566849	-80.513951	10	Left	Cca	1
9-Jun-09	13:16	On effort	30.565785	-80.525539	10	Right	Cca	1
9-Jun-09	13:16	On effort	30.567798	-80.493986	10	Right	Cca	1
9-Jun-09	13:18	On effort	30.565513	-80.420685	10	Left	Cca	1
9-Jun-09	13:18	On effort	30.565562	-80.421626	10	Right	Cca	1
9-Jun-09	13:19	On effort	30.567071	-80.381122	10	Left	Cca	1
9-Jun-09	13:22	On effort	30.567722	-80.287245	10	Left	Cca	1
9-Jun-09	13:55	On effort	30.499843	-80.234397	9	Left	Cca	1
9-Jun-09	13:57	On effort	30.499435	-80.316440	9	Right	Cca	1
9-Jun-09	13:59	On effort	30.501223	-80.372094	9	Right	Cca	1
9-Jun-09	14:00	On effort	30.496762	-80.413666	9	Right	Cca	1
9-Jun-09	14:10	On effort	30.499667	-80.535624	9	Right	Cca	1
9-Jun-09	14:11	On effort	30.499578	-80.577725	9	Right	Cca	1
9-Jun-09	14:12	On effort	30.500239	-80.615830	9	Right	TURT	1
9-Jun-09	14:13	On effort	30.499470	-80.655752	9	Left	Cca	4
9-Jun-09	14:13	On effort	30.499403	-80.656840	9	Right	Cca	1
9-Jun-09	14:17	On effort	30.434048	-80.677442	8	Right	Cca	1
9-Jun-09	14:18	On effort	30.434062	-80.620432	8	Left	Cca	1
9-Jun-09	14:19	On effort	30.433756	-80.599135	8	Left	Cca	1
9-Jun-09	14:20	On effort	30.433391	-80.572292	8	Left	Cca	3
9-Jun-09	14:20	On effort	30.434013	-80.542311	8	Right	TURT	1
9-Jun-09	14:21	On effort	30.433951	-80.509602	8	Right	Cca	1
9-Jun-09	14:22	On effort	30.433175	-80.471567	8	Left	Cca	1
9-Jun-09	14:23	On effort	30.433501	-80.434726	8	Right	Cca	1
9-Jun-09	14:23	On effort	30.433348	-80.457472	8	Right	TURT	1
9-Jun-09	14:24	On effort	30.434314	-80.418364	8	Left	Cca	1
9-Jun-09	14:24	On effort	30.435821	-80.386605	8	Right	Cca	1
9-Jun-09	14:35	On effort	30.431885	-80.255430	8	Right	Cca	1
9-Jun-09	15:03	On effort	30.366183	-80.399778	7	Left	Cca	1
9-Jun-09	15:04	On effort	30.366912	-80.437332	7	Left	Cca	1
9-Jun-09	15:04	On effort	30.366681	-80.446110	7	Right	Cca	1
9-Jun-09	15:06	On effort	30.367461	-80.516973	7	Left	Cca	1
9-Jun-09	15:06	On effort	30.367329	-80.501678	7	Right	Cca	1
9-Jun-09	15:06	On effort	30.365548	-80.534814	7	Right	Cca	1
9-Jun-09	15:07	On effort	30.364718	-80.568133	7	Right	Cca	1
9-Jun-09	15:08	On effort	30.364513	-80.617354	7	Left	Cca	1
9-Jun-09	15:08	On effort	30.364621	-80.613793	7	Right	Cca	2
9-Jun-09	15:09	On effort	30.365256	-80.642000	7	Left	Cca	2
9-Jun-09	15:09	On effort	30.365123	-80.638784	7	Right	Cca	1
9-Jun-09	15:10	On effort	30.366887	-80.674321	7	Right	Cca	1

9-Jun-09	15:11	On effort	30.364501	-80.702961	7	Right	Cca	1
9-Jun-09	15:13	On effort	30.301129	-80.689894	6	Right	Cca	1
9-Jun-09	15:15	On effort	30.299933	-80.618592	6	Left	Cca	1
9-Jun-09	15:15	On effort	30.300391	-80.631262	6	Right	Cca	1
9-Jun-09	15:17	On effort	30.298765	-80.540695	6	Left	Cca	1
9-Jun-09	15:17	On effort	30.298774	-80.537869	6	Right	Cca	1
9-Jun-09	15:18	On effort	30.299340	-80.508963	6	Left	Cca	2
9-Jun-09	15:19	On effort	30.299651	-80.472905	6	Left	Cca	1
9-Jun-09	15:20	On effort	30.295107	-80.408161	6	Right	TURT	1
9-Jun-09	15:22	On effort	30.301660	-80.342552	6	Left	Cca	1
9-Jun-09	15:51	On effort	30.238296	-80.321698	5	Right	Cca	1
9-Jun-09	15:52	On effort	30.238956	-80.379864	5	Right	Cca	1
9-Jun-09	15:54	On effort	30.238248	-80.464537	5	Right	Cca	1
9-Jun-09	15:54	On effort	30.237318	-80.450577	5	Right	TURT	1
9-Jun-09	15:56	On effort	30.232950	-80.531585	5	Left	Cca	2
9-Jun-09	15:56	On effort	30.234956	-80.519376	5	Right	Cca	1
9-Jun-09	15:58	On effort	30.234953	-80.629916	5	Left	Cca	2
9-Jun-09	15:58	On effort	30.233555	-80.606452	5	Right	Cca	1
10-Jun-09	9:21	On effort	29.964953	-80.614129	1	Left	Cca	1
10-Jun-09	9:26	On effort	29.965327	-80.404573	1	Right	Cca	1
10-Jun-09	9:59	On effort	30.032131	-80.352507	2	Right	Cca	1
10-Jun-09	10:02	On effort	30.030888	-80.450792	2	Left	Cca	1
10-Jun-09	10:03	On effort	30.029927	-80.479060	2	Right	Cca	1
10-Jun-09	10:04	On effort	30.029335	-80.526848	2	Right	Cca	1
10-Jun-09	10:06	On effort	30.029806	-80.599411	2	Right	Cca	1
10-Jun-09	10:13	On effort	30.099087	-80.639354	3	Left	Cca	1
10-Jun-09	10:14	On effort	30.098968	-80.602294	3	Left	Cca	1
10-Jun-09	10:15	On effort	30.099808	-80.529924	3	Left	Cca	1
10-Jun-09	10:17	On effort	30.103878	-80.447898	3	Right	Cca	1
10-Jun-09	10:20	On effort	30.103098	-80.334260	3	Left	TURT	1
10-Jun-09	11:07	On effort	30.167155	-80.470628	4	Left	Cca	1
10-Jun-09	11:08	On effort	30.167166	-80.499885	4	Left	Cca	1
10-Jun-09	11:09	On effort	30.166382	-80.527662	4	Left	Cca	1
10-Jun-09	11:09	On effort	30.166121	-80.538992	4	Right	Cca	1
10-Jun-09	11:10	On effort	30.165179	-80.556454	4	Left	Cca	1
10-Jun-09	11:11	On effort	30.163960	-80.589377	4	Right	Cca	2
10-Jun-09	11:13	On effort	30.166544	-80.661509	4	Right	Cca	1
10-Jun-09	11:19	On effort	30.232778	-80.588997	5	Left	TURT	1
10-Jun-09	11:21	On effort	30.242948	-80.512343	5	Left	Cca	1
10-Jun-09	11:22	On effort	30.235576	-80.461142	5	Left	Cca	1
10-Jun-09	11:25	On effort	30.234017	-80.355132	5	Left	Cca	1
10-Jun-09	11:54	On effort	30.300452	-80.322588	6	Left	Cca	1
10-Jun-09	11:55	On effort	30.299935	-80.355562	6	Left	Cca	1
10-Jun-09	11:55	On effort	30.299488	-80.367682	6	Right	Cca	1
10-Jun-09	11:57	On effort	30.297850	-80.441585	6	Left	Cca	1
10-Jun-09	11:57	On effort	30.297258	-80.417669	6	Right	Cca	1
10-Jun-09	14:34	On effort	30.363275	-80.595480	7	Right	Cca	1
10-Jun-09	14:35	On effort	30.366263	-80.548797	7	Left	TURT	1

10-Jun-09	14:37	On effort	30.363567	-80.490323	7	Right	Cca	1
10-Jun-09	14:38	On effort	30.363986	-80.455658	7	Left	Cca	1
10-Jun-09	14:38	On effort	30.361263	-80.423257	7	Right	Cca	1
10-Jun-09	14:40	On effort	30.363603	-80.363192	7	Left	TURT	1
10-Jun-09	14:40	On effort	30.364026	-80.375654	7	Right	Cca	1
10-Jun-09	14:41	On effort	30.363423	-80.300225	7	Left	Cca	1
10-Jun-09	14:42	On effort	30.364019	-80.253230	7	Left	Cca	1
10-Jun-09	15:11	On effort	30.433236	-80.242099	8	Left	Cca	1
10-Jun-09	15:12	On effort	30.433286	-80.264880	8	Right	Cca	2
10-Jun-09	15:16	On effort	30.431321	-80.407921	8	Left	Cca	1
10-Jun-09	15:18	On effort	30.434846	-80.487527	8	Right	TURT	1
10-Jun-09	15:40	On effort	30.434702	-80.650537	8	Left	Cca	1
10-Jun-09	15:45	On effort	30.497844	-80.623834	9	Right	Cca	1
10-Jun-09	15:46	On effort	30.498133	-80.614377	9	Left	Cca	2
10-Jun-09	15:46	On effort	30.498748	-80.590676	9	Right	Cca	1
10-Jun-09	15:47	On effort	30.499923	-80.547867	9	Left	Cca	2
10-Jun-09	15:49	On effort	30.502352	-80.476434	9	Left	Cca	2
10-Jun-09	16:00	On effort	30.501760	-80.355807	9	Right	Cca	1
10-Jun-09	16:01	On effort	30.501102	-80.328871	9	Left	Cca	1
10-Jun-09	16:05	On effort	30.496205	-80.181637	9	Right	Cca	1
10-Jun-09	16:36	On effort	30.570119	-80.140188	10	Right	Cca	2
10-Jun-09	16:38	On effort	30.567353	-80.256643	10	Left	TURT	1
10-Jun-09	16:39	On effort	30.566927	-80.279606	10	Right	Cca	2
10-Jun-09	16:41	On effort	30.567950	-80.379021	10	Left	Cca	1
10-Jun-09	16:43	On effort	30.568044	-80.462992	10	Left	Cca	3
10-Jun-09	16:44	On effort	30.567580	-80.486993	10	Left	Cca	3
10-Jun-09	16:44	On effort	30.568917	-80.504767	10	Right	Cca	2
10-Jun-09	16:45	On effort	30.568166	-80.521155	10	Left	Cca	1
10-Jun-09	16:46	On effort	30.566427	-80.557029	10	Left	Cca	1
10-Jun-09	16:46	On effort	30.568128	-80.582101	10	Left	Cca	2
11-Jun-09	8:57	On effort	30.161635	-80.569707	4	Left	Cca	1
11-Jun-09	8:58	On effort	30.163361	-80.540625	4	Left	Cca	1
11-Jun-09	8:59	On effort	30.166888	-80.472289	4	Right	Cca	1
11-Jun-09	9:01	On effort	30.169294	-80.388163	4	Left	TURT	1
11-Jun-09	9:01	On effort	30.167465	-80.422048	4	Right	Cca	1
11-Jun-09	9:36	On effort	30.099660	-80.545638	3	Left	Cca	1
11-Jun-09	9:37	On effort	30.101354	-80.568452	3	Right	Cca	1
11-Jun-09	10:09	On effort	30.036402	-80.616519	2	Right	Cca	1
11-Jun-09	11:32	On effort	29.964513	-80.528974	1	Right	Cca	1
11-Jun-09	11:32	On effort	29.965117	-80.561496	1	Right	Cca	1
11-Jun-09	11:35	On effort	29.966203	-80.669853	1	Left	Cca	1
11-Jun-09	11:36	On effort	29.966056	-80.689631	1	Left	Cca	3

Table 3. Sea turtle sightings during aerial surveys in the Jacksonville USWTR site in June 2009.

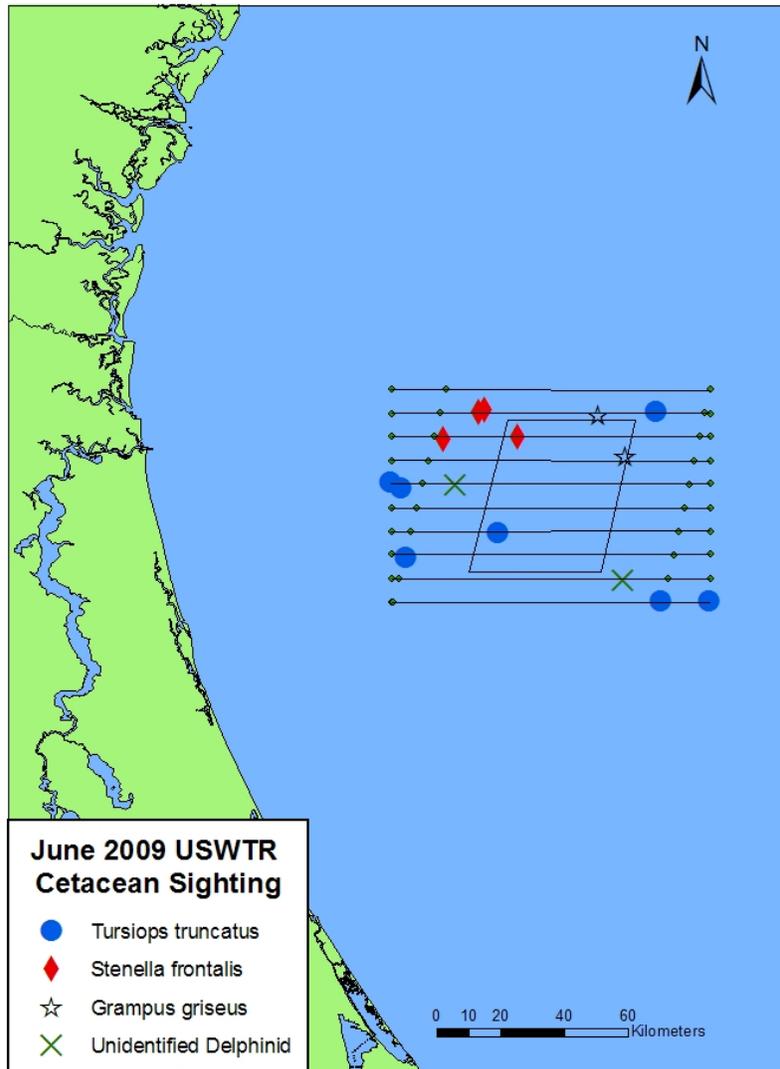


Figure 1. Cetacean sightings during aerial surveys in the Jacksonville USWTR site in June 2009.

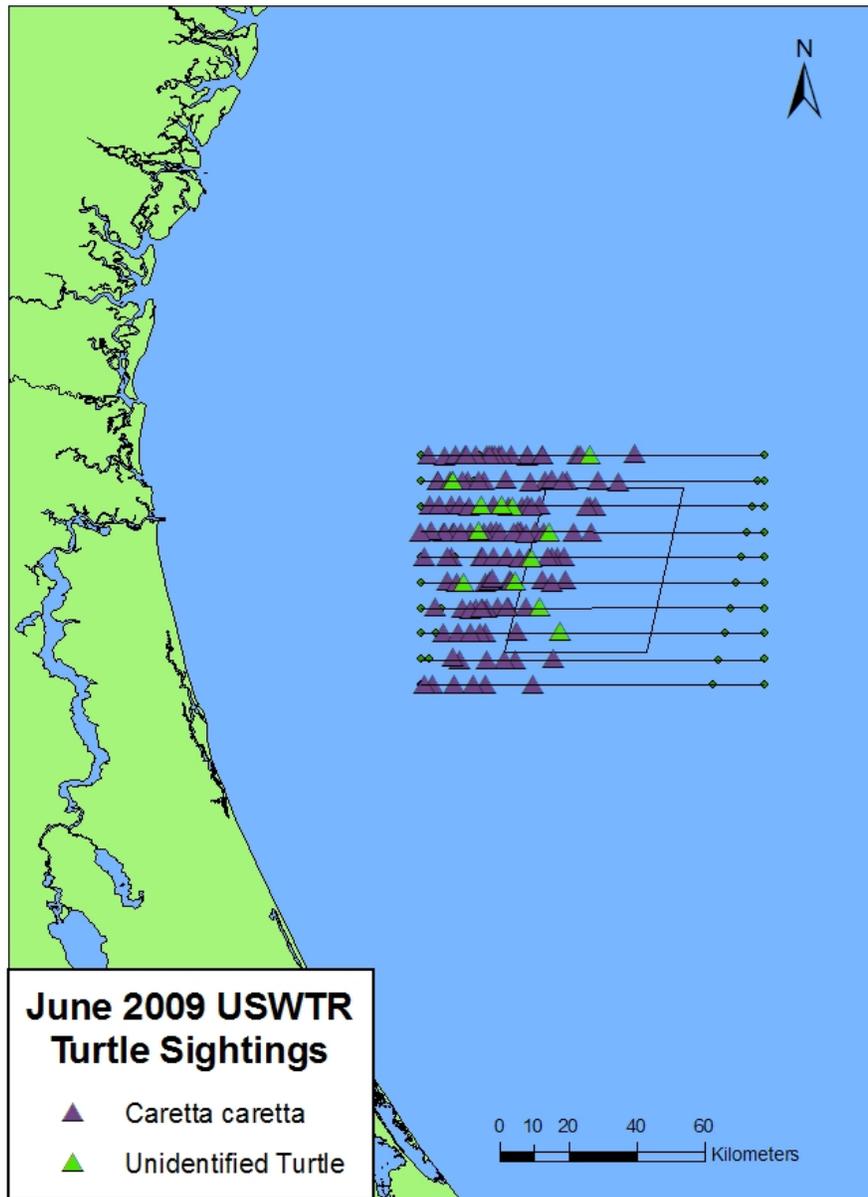


Figure 2. Sea turtle sightings during aerial surveys in the Jacksonville USWTR site in June 2009.

No problems have been encountered in the past month or are expected in the upcoming month that will effect the completion of scheduled tasks.

## **Monitoring of Protected Species in the Proposed Jacksonville USWTR**

Progress Report: June 24 through July 23, 2009

### **Survey activity (Task 2)**

#### Aerial Surveys

Two full sets (20 track lines) of aerial surveys were conducted on July 15<sup>th</sup> through the 17<sup>th</sup> in good to fair survey conditions (Table 1). Two cetacean species were encountered while on effort: six groups of bottlenose dolphins (*Tursiops truncatus*) and two groups of Atlantic spotted dolphins (*Stenella frontalis*,) along with one group of unidentified delphinids (Table 2). Numerous loggerhead sea turtles (*Caretta caretta*) and a small number of unidentified sea turtles were encountered in the survey area, primarily on the inshore ends of the track lines (Table 3). The locations of cetaceans and turtles sighted during aerial surveys are presented in Figure 1.

#### Vessel Surveys

Two track lines were completed on July 19<sup>th</sup> and July 20<sup>th</sup> 2009 on the *R/V 2 Angels* – a modified 38 ft Duffy commercial/ sport fishing vessel (Table 4). Cetacean encounters consisted of one group of bottlenose and one group of Atlantic spotted dolphins, along with two groups of unidentified delphinids and two loggerhead sea turtles (Table 5). The locations of cetaceans and turtles sighted during vessel surveys are presented in Figure 1.

#### Towed Passive Acoustics

The towed acoustic array was deployed from the *R/V 2 Angels* on the 19<sup>th</sup> and 20<sup>th</sup> of July 2009. On July 19<sup>th</sup> the array was deployed and monitored for 5.1 hours of simultaneous visual and acoustic survey. During that time a total of 2.8 hours of acoustic recordings were taken. Three visual sightings occurred during the acquisition of acoustic data; one was identified as *Tursiops truncatus*, the second as *Stenella frontalis*, and the third sighting was of unidentified delphinids. Numerous other vocalizations including echolocation clicks, buzzes and whistles were recorded. On July 20<sup>th</sup> the acoustic array was deployed and monitored for 4.7 hours of combined survey effort. During this period a total of 2.1 hours of acoustic recordings were obtained. One visual sighting of unidentified delphinids occurred while recording was in progress.

### Travel (Task 1 & 3)

The observer team relocated to Fernandina Beach, FL and the observer house/base of operations was set up on 1 July 2009. Co-PIs William McLellan and Ann Pabst traveled to Fernandina Beach from June 30 through July 3 to assist with the relocation/set-up effort. Co-PI David Johnston and post-doctoral fellow Melissa Soldevilla traveled to Fernandina Beach during July 10 through 12 to assist with initial set up of vessel-based surveys and testing of the towed acoustic array.

### Purchasing (Task 1)

The final items for the towed array system were purchased during this reporting period.

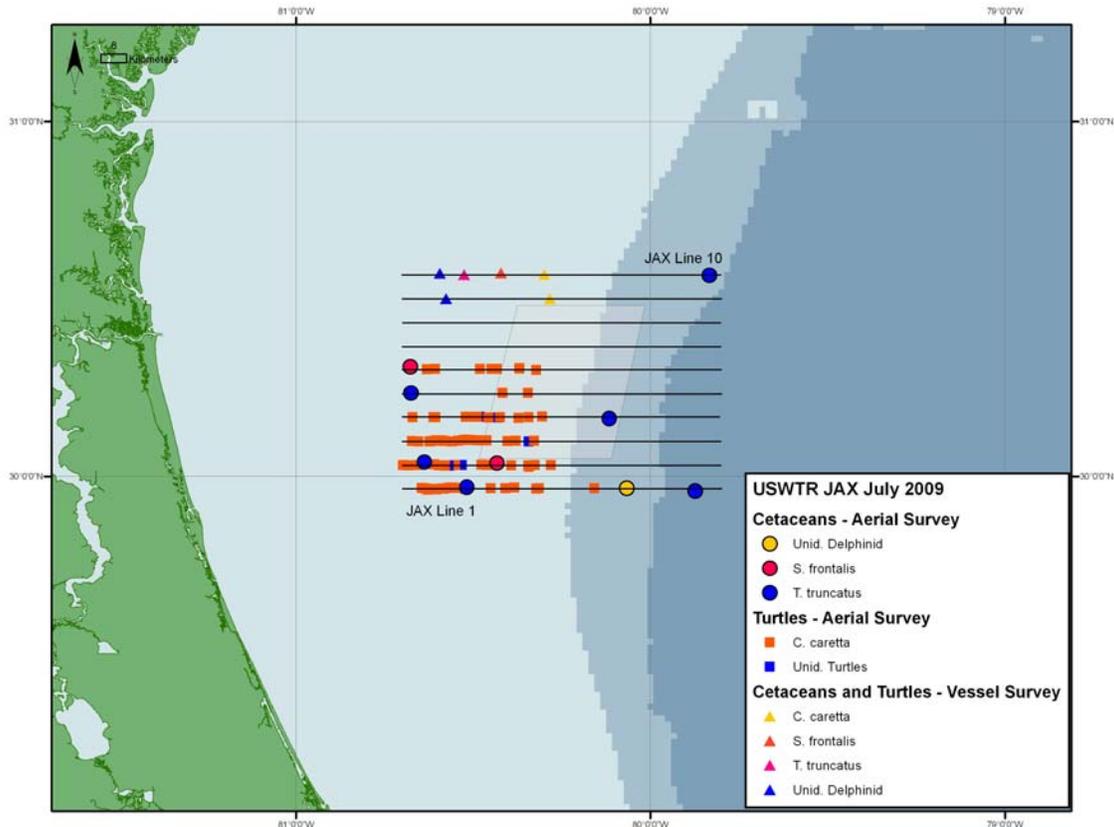


Figure 1. The locations of cetaceans and turtles sighted during aerial and vessel surveys of the JAX USWTR study region during June 24-July 23 2009.

Table 1. Aerial survey effort table for the Jacksonville, FL USWTR site in July 2009.

Date	Line	Sea State	Kilometers flown
15-Jul-09	1	1 to 2	82.5
15-Jul-09	2	1 to 2	86.8
15-Jul-09	3	1 to 3	86
15-Jul-09	4	1 to 2	85.6
15-Jul-09	5	1 to 2	81
15-Jul-09	6	1 to 2	85.7
16-Jul-09	10	3	84.6
16-Jul-09	9	3	86.5
16-Jul-09	8	3	85.5
16-Jul-09	7	3	86.4
16-Jul-09	6	2 to 3	87.3
16-Jul-09	5	2 to 3	85.9
16-Jul-09	4	2	86.4
16-Jul-09	3	2 to 3	86.5
16-Jul-09	2	2	83.3
16-Jul-09	1	1 to 2	84.6
17-Jul-09	7	3 to 4	85.9
17-Jul-09	8	3 to 4	86.7
17-Jul-09	9	3 to 4	85.4
17-Jul-09	10	3 to 4	86.2

Table 2. Cetacean sightings during aerial surveys in the Jacksonville USWTR site in June 2009.

Date	Time	On/Off Effort	Latitude	Longitude	Track Number	Observer	Species	Group Size
15-Jul-09	13:36	On Effort	29.967081	-80.067598	1	Left	DELP	1
15-Jul-09	15:10	On Effort	30.162002	-80.116169	4	Left	Ttr	4
15-Jul-09	15:35	On Effort	30.233127	-80.675794	5	Left	Ttr	5
15-Jul-09	16:54	On Effort	30.307943	-80.677572	6	Right	Sfr	15
16-Jul-09	9:29	On Effort	30.566033	-79.834290	10	Right	Ttr	12
16-Jul-09	14:35	On Effort	30.039753	-80.637413	2	Left	Ttr	6
16-Jul-09	14:54	On Effort	30.037417	-80.432347	2	Left	Sfr	12
16-Jul-09	15:29	On Effort	29.958990	-79.874340	1	Left	Ttr	10
16-Jul-09	15:58	On Effort	29.969852	-80.518172	1	Left	Ttr	13

Table 3. Sea turtle sightings during aerial surveys in the Jacksonville USWTR site in June 2009.

Date	Time	On/Off Effort	Latitude	Longitude	Track Number	Observer	Species	Group Size
15-Jul-09	13:18	On Effort	29.967452	-80.645430	1	Right	Cca	1
15-Jul-09	13:19	On Effort	29.965739	-80.630418	1	Left	Cca	1
15-Jul-09	13:19	On Effort	29.964022	-80.604555	1	Left	Cca	1
15-Jul-09	13:19	On Effort	29.966824	-80.637502	1	Right	Cca	1
15-Jul-09	13:19	On Effort	29.964478	-80.618668	1	Right	Cca	1
15-Jul-09	13:20	On Effort	29.966174	-80.584901	1	Left	TURT	2
15-Jul-09	13:20	On Effort	29.965385	-80.590268	1	Right	Cca	1
15-Jul-09	13:20	On Effort	29.967203	-80.577028	1	Right	Cca	1
15-Jul-09	13:21	On Effort	29.969148	-80.557552	1	Left	Cca	1
15-Jul-09	13:21	On Effort	29.968677	-80.565647	1	Right	Cca	1
15-Jul-09	13:22	On Effort	29.964844	-80.522382	1	Left	TURT	1
15-Jul-09	13:22	On Effort	29.964760	-80.520144	1	Right	Cca	1
15-Jul-09	13:24	On Effort	29.966340	-80.450099	1	Right	Cca	1
15-Jul-09	13:25	On Effort	29.966351	-80.409510	1	Right	Cca	1
15-Jul-09	13:27	On Effort	29.966155	-80.321982	1	Left	Cca	1
15-Jul-09	13:27	On Effort	29.966310	-80.314090	1	Right	Cca	1
15-Jul-09	13:32	On Effort	29.967109	-80.157865	1	Left	Cca	1
15-Jul-09	14:16	On Effort	30.032079	-80.280516	2	Left	Cca	1
15-Jul-09	14:17	On Effort	30.031696	-80.344534	2	Left	Cca	1
15-Jul-09	14:17	On Effort	30.032548	-80.325620	2	Right	Cca	1
15-Jul-09	14:17	On Effort	30.031763	-80.340692	2	Right	Cca	1
15-Jul-09	14:20	On Effort	30.031944	-80.452905	2	Right	Cca	1
15-Jul-09	14:21	On Effort	30.032042	-80.461970	2	Right	Cca	1
15-Jul-09	14:22	On Effort	30.032122	-80.532001	2	Right	TURT	1
15-Jul-09	14:23	On Effort	30.032878	-80.550123	2	Right	Cca	1
15-Jul-09	14:23	On Effort	30.031269	-80.559502	2	Right	Cca	1
15-Jul-09	14:23	On Effort	30.030218	-80.569081	2	Right	TURT	3
15-Jul-09	14:24	On Effort	30.030146	-80.578839	2	Left	Cca	1
15-Jul-09	14:24	On Effort	30.034083	-80.611373	2	Left	Cca	3
15-Jul-09	14:24	On Effort	30.031163	-80.588983	2	Right	Cca	1
15-Jul-09	14:24	On Effort	30.031824	-80.597445	2	Right	Cca	1
15-Jul-09	14:24	On Effort	30.033875	-80.609214	2	Right	Cca	1
15-Jul-09	14:26	On Effort	30.032807	-80.654042	2	Left	Cca	1
15-Jul-09	14:26	On Effort	30.031230	-80.682173	2	Left	Cca	1
15-Jul-09	14:26	On Effort	30.031206	-80.684923	2	Right	Cca	2
15-Jul-09	14:27	On Effort	30.031944	-80.698539	2	Right	Cca	1
15-Jul-09	14:30	On Effort	30.098847	-80.654708	3	Left	Cca	1

15-Jul-09	14:30	On Effort	30.100310	-80.673173	3	Right	Cca	2
15-Jul-09	14:31	On Effort	30.099432	-80.623825	3	Left	Cca	2
15-Jul-09	14:32	On Effort	30.100945	-80.585137	3	Left	Cca	2
15-Jul-09	14:32	On Effort	30.100186	-80.615472	3	Right	Cca	1
15-Jul-09	14:32	On Effort	30.101525	-80.604712	3	Right	Cca	1
15-Jul-09	14:32	On Effort	30.101695	-80.591899	3	Right	Cca	1
15-Jul-09	14:32	On Effort	30.100298	-80.581210	3	Right	Cca	1
15-Jul-09	14:33	On Effort	30.099352	-80.558739	3	Left	Cca	4
15-Jul-09	14:33	On Effort	30.099286	-80.560168	3	Right	Cca	4
15-Jul-09	14:34	On Effort	30.103049	-80.528851	3	Left	Cca	1
15-Jul-09	14:34	On Effort	30.101230	-80.542859	3	Right	Cca	1
15-Jul-09	14:34	On Effort	30.103523	-80.518905	3	Right	Cca	1
15-Jul-09	14:35	On Effort	30.102778	-80.503844	3	Left	Cca	2
15-Jul-09	14:35	On Effort	30.101889	-80.481675	3	Left	Cca	4
15-Jul-09	14:35	On Effort	30.101917	-80.481955	3	Right	Cca	2
15-Jul-09	14:36	On Effort	30.102441	-80.462503	3	Left	Cca	1
15-Jul-09	14:37	On Effort	30.100271	-80.403669	3	Right	Cca	1
15-Jul-09	14:38	On Effort	30.100676	-80.379872	3	Right	Cca	3
15-Jul-09	14:39	On Effort	30.099504	-80.343922	3	Left	TURT	1
15-Jul-09	14:43	On Effort	30.100729	-80.328100	3	Right	Cca	1
15-Jul-09	15:20	On Effort	30.167207	-80.305056	4	Right	Cca	2
15-Jul-09	15:21	On Effort	30.166186	-80.343439	4	Left	Cca	2
15-Jul-09	15:22	On Effort	30.163681	-80.371858	4	Left	Cca	1
15-Jul-09	15:23	On Effort	30.165170	-80.430593	4	Left	TURT	2
15-Jul-09	15:23	On Effort	30.166150	-80.423454	4	Right	Cca	1
15-Jul-09	15:24	On Effort	30.164338	-80.456457	4	Left	Cca	1
15-Jul-09	15:24	On Effort	30.166441	-80.480618	4	Left	TURT	1
15-Jul-09	15:24	On Effort	30.164390	-80.457202	4	Right	Cca	2
15-Jul-09	15:25	On Effort	30.166370	-80.498522	4	Left	Cca	3
15-Jul-09	15:25	On Effort	30.166779	-80.520930	4	Left	Cca	1
15-Jul-09	15:25	On Effort	30.166424	-80.488564	4	Right	Cca	4
15-Jul-09	15:28	On Effort	30.165512	-80.611987	4	Left	Cca	1
15-Jul-09	15:28	On Effort	30.165447	-80.606623	4	Right	Cca	1
15-Jul-09	15:29	On Effort	30.166144	-80.670977	4	Left	Cca	1
15-Jul-09	16:09	On Effort	30.233877	-80.416672	5	Right	Cca	1
15-Jul-09	16:14	On Effort	30.234243	-80.345375	5	Left	Cca	1
15-Jul-09	16:44	On Effort	30.299495	-80.321647	6	Left	Cca	1
15-Jul-09	16:45	On Effort	30.303041	-80.369487	6	Left	Cca	1
15-Jul-09	16:45	On Effort	30.303811	-80.369824	6	Right	Cca	1
15-Jul-09	16:47	On Effort	30.301687	-80.448696	6	Left	Cca	2
15-Jul-09	16:47	On Effort	30.302312	-80.432597	6	Right	Cca	1

15-Jul-09	16:48	On Effort	30.301844	-80.481189	6	Right	Cca	2
15-Jul-09	16:51	On Effort	30.302059	-80.607444	6	Right	Cca	1
15-Jul-09	16:52	On Effort	30.300593	-80.630280	6	Left	Cca	2
16-Jul-09	13:41	On Effort	30.166391	-30.166391	4	Right	Cca	2
16-Jul-09	14:18	On Effort	30.099503	-30.099503	3	Right	Cca	2
16-Jul-09	14:21	On Effort	30.100652	-30.100652	3	Right	Cca	1
16-Jul-09	14:23	On Effort	30.098352	-30.098352	3	Right	Cca	2
16-Jul-09	14:30	On Effort	30.031240	-30.031240	2	Right	Cca	1
16-Jul-09	14:50	On Effort	30.033857	-80.476733	2	Left	Cca	1
16-Jul-09	15:03	On Effort	30.031133	-80.392978	2	Left	Cca	1
16-Jul-09	15:04	On Effort	30.027036	-80.342921	3	Left	Cca	1
16-Jul-09	15:49	On Effort	29.968929	-80.383804	1	Left	Cca	1
16-Jul-09	16:09	On Effort	29.967584	-80.550035	1	Left	Cca	2
16-Jul-09	16:11	On Effort	29.962552	-80.629539	1	Left	Cca	1

Table 4. Effort table for vessel surveys in the Jacksonville USWTR site during July 2009.

Date	Line	Sea State	Kilometers Surveyed
19-Jul-09	10	1 to 3	82.8
20-Jul-09	9	1 to 3	82.8

Table 5. Cetacean and sea turtle sightings during vessel surveys in the Jacksonville USWTR site during July 2009.

Date	Line	On/Off effort	Time	Latitude	Longitude	Species	Group Size
19-Jul-09	10	On effort	14:13	30.568363	-80.299465	<i>C. caretta</i>	1
19-Jul-09	10	On effort	14:52	30.571995	-80.422180	<i>S. frontalis</i>	4
19-Jul-09	10	On effort	15:26	30.567578	-80.526065	<i>T. truncatus</i>	6
19-Jul-09	10	On effort	15:59	30.571028	-80.594118	Unid. Delphinid	3
20-Jul-09	9	On effort	11:50	30.500307	-80.576753	Unid. Delphinid	2
20-Jul-09	9	On effort	13:22	30.500282	-80.283378	<i>C. caretta</i>	1