

Cooperative Science Services, LLC Dolphinfish Research Program

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Puerto Rican PSAT Singing in Caribbean

The pop-off satellite archival tag placed on a dolphinfish off the southwest corner of Puerto Rico has contacted the Argos satellite system. Deployed on April 2, 2011, by the crew of Manuel Botello's boat *Missing Angel* based in La Parguera, the high-tech instrument was programmed to remain with the fish for 30 days. During this period it recorded time-specific water temperature, pressure and light intensity every two minutes.

The instrument made first contact with an Argos satellite on May 3, 2011, suggesting it had remained with the fish for the full 30 days. If this is the case, then it is the longest period that a dolphin has been monitored using a PSAT. At initial contact the tag was located approximately 150 miles south of Santo Domingo, Dominican Republic, which placed it roughly 250 miles southwest of its original release point. This means that the fish averaged traveling 8.3 miles to the southwest each day.

Since surfacing and initially contacting an Argos satellite, the instrument has been transmitting portions of its archived data on each pass of an Argos satellite. This electronic canary could continue to sing about the movements and environment used by the dolphin for up to 30 days, before it completes the transfer of its data.

In the meantime, the instrument serves a second duty as a passive surface ocean current meter, tracking its drift through the Caribbean Sea. Each time the unit contacts a satellite a GPS position is recorded. The tag has drifted at the mercy of the currents and winds a total of 290 miles during its 23 days of bobbing at the surface. This means

that the tag has exhibited a faster ground speed, 12.6 miles per day, than when it was attached to the dolphin. This suggests that the fish spent considerable time swimming against the prevailing currents.

I can hardly wait to begin analyzing this massive data set to see what amazing information it will reveal about the life and behavior of this dolphin in the Caribbean Sea.



Originally deployed April 2, 2011, the PSAT released itself from the fish and made first contact on May 3 roughly 250 miles from its release site. In the next 23 days it drifted an additional 290 miles covering more ground than when attached to the dolphin.

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New Information Keeps Coming In

Four recent recaptures have provided new insight into the life and movements of U.S. East Coast dolphin. Each of the recoveries has provided fresh information on aspects of their behavior.

The first recovery is one that I personally never thought would happen. When you are dealing with a fish that seldom lives past 12 months, has a long term history of only a 2.7 percent recovery rate, and is preferred by anglers for eating, you do not expect to have a fish recaptured twice. Well, Capt. Bouncer Smith of Miami, Florida, who runs the charter boat *Bouncer's Dusky* proved me wrong.

On March 12, 2011, Capt. Bouncer was doing some live baiting using kites when his client hauled in a nice 28-inch bull dolphin which the client did not want, so Bouncer tagged and released it, all without removing the other fishing lines from the water. Within minutes of throwing the tagged dolphin into the water, another line went down with another nice dolphin. When the fish was brought to the boat, Capt. Bouncer saw that he had finally captured a tagged dolphin. So he removed the tag, placed a new tag in the fish and released it. Afterwards, he examined the tag and realized it was the tag he had used in the previous fish, meaning this recovered fish had a liberty period measured in minutes and a distance traveled measured in feet.

Three days later Mitchell Scherfer of Hollywood, Florida, was enjoying a day of fishing off Ft. Lauderdale, Florida, aboard the charter boat *Happy Day Today* when he caught Capt. Bouncer's ravenous little bull dolphin. During its liberty, this fish had traveled only 16.7 miles to the north, meaning it had eased along the south Florida coast covering 5.6 miles per day.

This fish clearly demonstrates that the tagging process does not traumatize the fish enough to disrupt the fish's normal behavior, i.e. feeding. This fish bit three baited hooks, so it also raises the question: does the feeding instinct in some fish over-ride their learned behavior to avoid hooks?

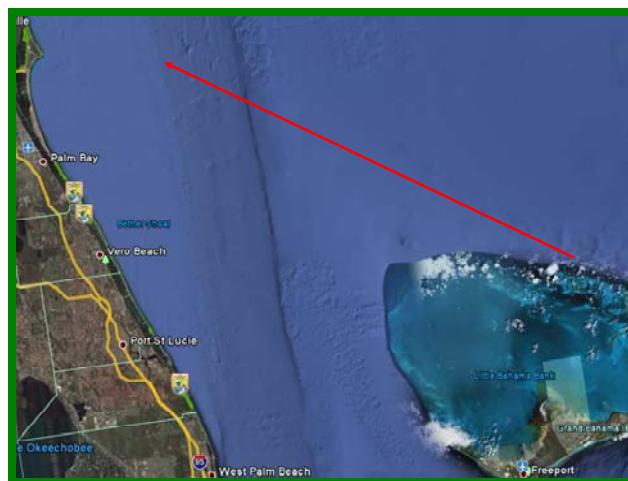
The second tag recovery deals with the connection between U.S. dolphin and those in the Eastern Bahamas. Many people are still having trouble accepting that dolphin move from the Atlantic Ocean off the eastern Bahamas crossing to the western side of the Gulf Stream off the U.S. East Coast. Thanks to the efforts of Capt. Bob Frevert of Jupiter, Florida, and the crew aboard the *Timber*, a clear, concise example of this behavior is now on record. On April 23, 2011 the *Timber* was fishing off Walker's Cay on the northeastern coast of the Bahamas when Jim Odell caught a small dolphin, estimated at 32 inches in fork length, which they tagged.

This fish was recovered on May 7, 2011 by Darren Pullias of Merritt Island, Florida, during a fishing trip

Dolphin Tagging Progress by Zones, May 31, 2011.

Zone	Area	Southern Limit	Northern Limit	Number Tagged
1	Bahamas	22° N	28° N	21
2	FL Straits	23° N	25° N	81
3	South Florida	25° N	27° N	92
4	Central Florida	27° N	30° N	31
5	North FL & GA	30° N	32° N	12
6	Southern SC	32° N	33° N	65
7	N. SC - S. NC	33° N	35° N	1
8	Northern NC	35° N	36.5° N	0
9	Virginia	36.5° N	38° N	0
10	N. Mid-Atlantic	38° N		0
11	Gulf of Mexico			1
12	W Central Atlantic			20
13	Caribbean Sea			22
	Total			346

aboard the *Tunavision* off Cape Canaveral, Florida. The fish was caught in 430 feet of water roughly 34 miles off the Cape, clearly on the western side of the Gulf Stream. The fish had traveled 128 miles during the 14 days of freedom, averaging 9.1 miles per day. This recapture is an example of how short liberties and movements fill in the details of the routes used by other dolphin that were recovered great distances from their release site.



Darren Pullias's recovery off Cape Canaveral, Florida, of a dolphin tagged by the crew of the Timber off Walker's Cay, Bahamas, clearly documents that dolphin cross the Gulf Stream in their travel to the U.S. East Coast.

The third and fourth tagged dolphin recoveries shed new light on the movement of south Florida dolphin to North Carolina. Historically dolphin have been caught off North Carolina in every month of the year. However, fish tagged off Florida have never been recovered off North Carolina until mid-June.

The Dolphinfish Research Program needs your financial support. No federal funds support this important research. This program exists because of private donations.

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On May 14, 2011, Chris Gill of Wilson, North Carolina, was fishing off Cape Hatteras, North Carolina, aboard Capt. Jim Bowman's charter boat *Marlin Mania* based in Teach's Lair Marina in Hatteras when he caught a tagged dolphin. The fish had been tagged 57 days earlier on March 18, 2011, by Capt. Zehntner Gay during a trip off Islamorada, Florida, aboard his charter boat *Hooked Up*. The fish was estimated to be 18 inches in fork length at release and estimated to be 31 inches in fork length at recapture. It had traveled 795 miles from its release site during the 57 days of liberty. Traveling an average of 13.9 miles per day, this fish's rate of travel was 30 percent below the average rate for Florida fish traveling up the Eastern Seaboard.

A slightly different travel pattern was shown by a fish tagged by Tania Teke just north of Marathon, Florida, on April 24, 2011, while fishing aboard the charter boat *Colorado Magic*, which belongs to her husband, Ron. The fish was recovered on May 23, 2011 off Oregon Inlet, North Carolina, by Rodney Berry of Manteo, North Carolina, while fishing aboard the charter boat *Biopsea*. During its 29 days of liberty, the fish traveled 832 miles to the north-northeast, averaging 28.7 miles per day. This fish was tagged 37 days after the fish that was recovered off Hatteras, but because of a travel speed that was more than double, 28.7 miles per day, it was found in North Carolina just nine days later than the Hatteras fish.

Could the leisurely rate of travel of the first fish have been related to its encountering lower water temperatures that slowed its travel rate? Because the second fish was tagged more than a month later, it may have found temperatures more to its liking and was able to zip along.

Web Site Updated

Visit the Dolphinfish Research Program's Web site for the latest update on progress of the 2011 research effort. A new map can be found on the "Map of Recaptures" page that highlights the first eleven tag recoveries reported in 2011. An associated table provides the full details about their movements. The Rewards and Sponsors page has also been updated to show the wonderful people, organizations and businesses that make this research possible through their financial support.

Please visit www.dolphintagging.com and go to the Map of Recaptures and Rewards and Sponsors pages to learn what is new in 2011.

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