

Cooperative Science Services, LLC Dolphinfish Research Program

Made possible by a grant from Marine Ventures Foundation

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World of the Atlantic Dolphinfish Shrinks

Here is another one of those amazing recoveries that keeps me dedicated to this research program.

One of the most notable achievements of this study has been all of the far-flung places in the Northern Atlantic Ocean where dolphin from the U.S. East Coast have been found. Previous recovery locations include beyond the Azores Islands in the eastern Atlantic, Cuba, Antigua (West Indies), south side of Puerto Rico, and Mexico at the border with Belize. These tagged fish recaptures were the first direct link between fish in U.S. waters and those in the Caribbean Sea and other areas of the North Atlantic. This data is the first challenge to the multi-stock concept currently accepted by fisheries managers.

This tag recovery story begins off Charleston, South Carolina, on June 8, 2007. The crew of Charleston-based sport fishing vessel *Summer Girl*, owned by John Smith of Walterboro, South Carolina, and Steve Leasure of Charleston, tagged numerous dolphinfish during the day's fishing. They were competing in the Charleston Fifty-Fifty Fishing Tournament, which promotes tagging dolphin and is a financial supporter of this research program.

Now, more than eight months later, when the crew have given up on hearing about a recovery of one of their fish, it happens. An e-mail comes into research headquarters from an angler who is reporting the recovery of a tag.

Christian Sauce of New Orleans, Louisiana, reported that he recovered a tagged dolphin during a fishing trip off Venezuela. On February 26, 2008, while fishing aboard the *La Ravancho*, off Choroní, Aragua, the crew caught a 12 kilogram (26.4 pounds) dolphin with a tag.

Reading the Web site address on the tag, he reported the tag recovery the next day via the Internet. It was one of the ten fish tagged by the *Summer Girl* crew on June 8th.

This is the first documented movement of a dolphinfish from the U.S. East Coast to Venezuela. Now the question is, how did it get there? The shortest route would be for the fish to move east, cross the Gulf Stream off Charleston and then head southeast for Antigua in the West Indies. There it could turn southwest, entering the Caribbean Sea and travel straight to Venezuela. Such a trip would be a minimum of 2,060 miles. Since the fish was at liberty for 263 days, this would translate to an average speed of roughly 8 miles per day. This is not much when you remember that this study has already shown dolphin capable of traveling more than 100 miles in a day.

However, this shortest route has a flaw. It requires the fish to leave the Gulf Stream current early before it weakens in the middle of the Atlantic Ocean. Other recoveries have indicated that the fish commonly ride the Gulf Stream up to at least North Carolina with many continuing up into the Mid-Atlantic Bight. Other dolphin likely travel with the Gulf Stream out toward the middle of the Atlantic before turning south. Under the scenario where the fish went to Cape Hatteras before heading south, the distance to Venezuela would increase to roughly 2,400 miles, giving an average travel rate of 9 miles per day.

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Other dolphin from the U.S. East Coast have been recovered in distant locations in previous years during February. These fish were found in the Eastern Atlantic beyond the Azores Islands and off Antigua. Three other tagged fish have been recovered during March and April in various parts of the Caribbean Sea. These winter and spring recoveries offer a serious challenge to the currently accepted theory of multiple, separate stocks in the Western North Atlantic.

If the regularity of their recoveries continues, and the number of such recoveries increase from areas within the Caribbean region, it would suggest the existence of a single, far-flung stock of dolphinfish in the Western North Atlantic.

The immediate changes would be that we, U.S. anglers, will no longer be able to call them "our fish" and that we should be concerned and pay attention to the commercial fishing taking place in the Caribbean Sea and adjacent waters.

Bahamas Movements, Coincidences?

Anglers have tagged 511 dolphin in the Bahamas during the past six years. Approximately half of these were tagged off the east side of Andros Island (Tongue of the Ocean) with the remainder split evenly between the east and west sides of the Bahamas Bank. Out of this number 15 fish have been recovered (2.9% recovery rate) which is comparable to the overall study. Out of this number, nine were recovered before they left Bahamian waters with fish remaining at liberty for as long as 51 days. The other recovered fish offer some fertile ground for speculation.

Three of the recoveries involved fish tagged off the west side of the bank. Two fish were recovered off North Carolina and the other off New York. These fish traveled an averaged of 20.9 miles per day (mpd). Two other recoveries were from fish tagged off Andros in the Tongue of the Ocean that were recovered off Georgia and North Carolina. These fish traveled at an average rate of 12.7 miles per day. The sixth recovery was a fish tagged off the eastern side of the bank, Eleuthera, that went to Georgia, traveling at an average rate of 12.4 miles per day.

At first glance, there is nothing special. All of the fish traveled north as do the fish tagged off the Florida east coast. However, consider that the western entrance for the Providence Channel that divides the Bahamas Bank is directly east of Port Everglades, located in the central part of the Florida gauntlet, the area from Key Largo to Stuart that possibly has the heaviest recreational fishing pressure of the entire U.S. East

Coast. If the fish in the Tongue or off Eleuthera moved west through the Providence Channel then you would think one should have been recovered off Florida simply because of the amount of fishing effort expended there.

All of the fish recovered outside Bahamian waters were recovered north of the Bahamas Bank. How they got there is the question. A clue could come from the much faster speed that the fish tagged on the west side traveled, a pace 65% faster than the fish from the east side. Could this speed differential be the results of the west side fish riding the much faster, stronger Gulf Stream current than the weak, intermittent Antilles Current that moves along the eastern side of the Bahamas Islands? This would support the hypothesis that the fish on the east side of the Banks stay on the eastern side. It also would indicate that fish found in the Tongue of the Ocean move out of this pocket by traveling to the east into the Antilles Current, rather than westward toward Florida and the Gulf Stream. This eastward movement out of the Tongue is also likely influenced by the geologic topography of the area. The deep canyon that forms the Tongue enters the Bahamas Bank between the southern tip of the Abacos Islands and the northern tip of Eleuthera Island, creating a natural deep water passage to the east and the open Atlantic.

Another piece of valuable information is that both fish recovered off Sapelo Island, Georgia, one originating from the east side and one from the west side of the Bahamas Bank, were recovered more than 150 miles offshore. This is the region where the Antilles Current merges with the eastern side of the Gulf Stream. Recovery of the west side fish in this area also suggests that fish tagged on the east side of the Gulf Stream off south Florida may remain there for extended periods as they move north.

Northward movement of dolphin along the eastern side of the Bahamas to the U.S. East Coast has an important impact for the fishery north of Florida. It would represent a second origin/source of dolphin for the domestic fisheries north of Florida. Another important fact is that these fish currently are not subject to the heavy fishing pressure that exists off south Florida, meaning more and bigger fish would survive traveling this route.

All of this speculation is certainly interesting but basing it on only six recoveries are far too little data to draw any real conclusions. Every year, new information is added to the documented facts about the dolphinfish's natural life history. When studying a living animal that ranges as far as dolphinfish travel, piecing together their life history is a slow process. This is why it takes years of dedicated work to map out their movements.

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Program Brochure Available

The Dolphinfish Tagging Research Program announces the availability of a brochure that highlights the study. Outlining the goals of the study, the brochure seeks to inform fishermen of the many information gaps that exist on dolphinfish and how they can help to answer these questions.

The brochure highlights many of the study's accomplishments such as the astounding international recoveries from the eastern North Atlantic and Caribbean Sea. It also provides information on ways the cutting edge technology of pop-off satellite archival tags is being used to define the fish's habitat and expose deep diving behavior never before documented.

The brochure is available at no cost to anglers, fishing clubs, and tournaments. People interested in receiving a copy should send a self-addressed, stamped envelope to the Dolphinfish Research Program address provided at the end of this newsletter. Organizations desiring large numbers of the brochure should contact the program's headquarters by telephone or e-mail.

Your Financial Support Is Needed

The target budget for 2008 is the same as in 2007, \$56,600. This budget will provide funding to continue the existing tagging study along with expanding tagging efforts into the Gulf of Mexico and other areas.

At this writing only about 20% of these funds have been received. I hope that every avid offshore angler will consider donating to the CSS Dolphinfish Research Program to ensure this important work continues. Remember, dolphin are the only fish in the box at the end of 80% of the days for offshore trolling trips.

Donations to the Dolphin Tagging Study are fully tax-deductible, thanks to the help of the Hilton Head Reef Foundation. This 501 (c) 3 non-profit organization has agreed to receive donations in support of the Dolphinfish Research Program and then pass them on to the project

when needed. Contributions should be made out to the Hilton Head Reef Foundation (HHR Foundation/Dolphin Study) and sent to the address below.



This young dolphin was dip netted off North Palm Beach, Florida, in December 2007 by Billy Gerlach. He reported having many large schools of these juvenile dolphin come by their boat during a swordfishing trip. Could these fish be the same dolphin that U.S. anglers will catch next year, or do they support a fishery in a different country? Photo provided by Tom McMurray.

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For More Information, Contact

Don Hammond
Cooperative Science Services, LLC
961 Anchor Rd., Charleston, SC 29412-4902
Telephone – FAX (843) 795-7524
Email CSSLLC@bellsouth.net
Web site www.dolphintagging.com

