

SC Dolphin Tagging Study

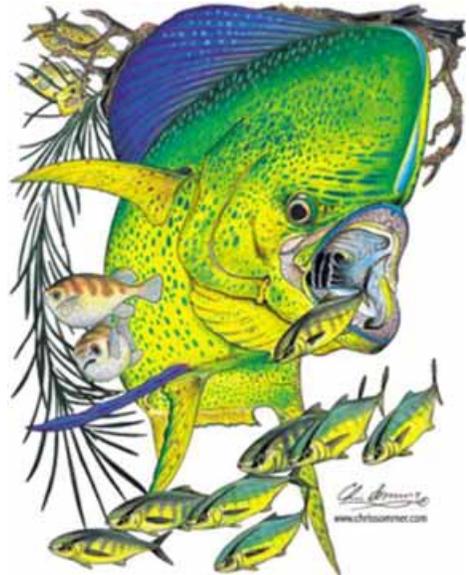
January 2006

Tag Yields First Look into Dolphin Behavior

Captain Howard Moseley's charter boat *Tag Team*, with the assistance of mate Tim Schryver, deployed the Study's first archival pop-off satellite tag in a 25 pound (est.) bull dolphin off Charleston, South Carolina on June 4th. The archival tag recorded water temperature, pressure, light level and time of day every 3 to 4 minutes for the next 10 days. At this point in time the tag floated to the surface and began downloading data via the Argos Satellite System. The tag was programmed to remain with the fish for 30 days and it is not clear why the tag surfaced early.

The tag transmitted data on 2,500 readings of depth and temperature at times that had been recorded. This is the first time science has captured hard data on the temperature and water depth used by dolphin. This is extremely valuable information needed to begin defining the critical habitat for the species.

Looking at the data, the very first thing that jumps out is the amount of time spent at 30m (98 feet) or more. Fishermen have always perceived dolphin as a surface fish but now we see that it actually spends more time at depths than the surface. This could explain those beautiful weed lines that fishermen encounter that are void of dolphin but should be holding fish.

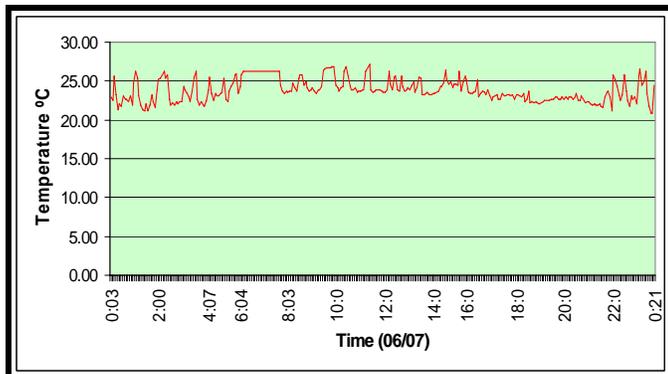
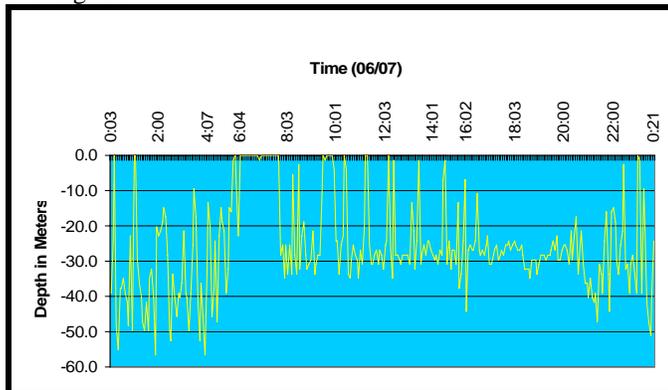


Data from the tag shows these fish to use far more of the water column than previously suspected. The fish was observed to commonly visit depths of 50m (164 feet) with the deepest dive descending to an amazing 74m (243 feet). Deep dives, below 50m, occurred just as frequently during daylight hours as at night.

Another behavior pattern exhibited by this fish related to time spent at the surface. During the 10 day track, this bull made more trips to and spent more time at the surface during daylight hours than during the night. One has to wonder if this behavior was related to feeding, predator avoidance or something else entirely.

The temperatures which this fish occupied were just as amazing, especially since it was tagged in June when the Shelf and Gulf Stream waters are considered warm. The fish spent most of it's time in waters that were 73.4 °F to 77. °F. However, during some of its dives it would enter waters of 67 °F. The highest water temperatures noted, 85° F, were during periods when the fish visited the surface.

This one fish, tracked for less than 10 days, has given us an amazing look into the life of dolphin. We now know they will dive at least as deep as 240 feet and will utilize waters that vary as much as 18° F. But this is just one fish and a large bull at that. We have no way of knowing if this one small snapshot of dolphin behavior is typical for the species. Subsequently, this information can not be used by science to describe all dolphin. Many more satellite tags need to be deployed on dolphin in different areas along the US east coast to really gain a true understanding of this amazing fish's behavior.



The top graph depicts the vertical water column movements of a bull dolphin and the water temperatures that it occupied throughout the day of June 7, 2006.

***Do you want to see this study continue?
You can help. See page 2.***

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No Federal Funds Available for Dolphin Study

Regardless of high recommendations by top fishery managers and leading fishery scientists with NOAA or the strong support by recreational fishermen, the NOAA Fisheries chose not to provide funding for the study under its MARFIN and Cooperative Research Program Grants. Funding from these programs was used primarily to fund research in the Gulf of Mexico. A positive note from this was that the project did receive high scores for technical quality and merit of research from a panel of leading fishery managers and researchers.

This leaves the highly successful study with two options. The first is to throw in the towel and walk away, but this is not what many anglers want to see happen. The alternative is that I take on this study privately with funding coming from recreational fishermen and associated industry.

I retire from SCDNR at the end of March and will have some money coming in, so I am willing to take on this study at a significant cut in pay initially. However, I cannot afford to do this gratis due to other obligations. But if sufficient funds are received by mid-March 2006 to cover the initial start-up costs of the study, then I am willing to gamble that additional funding will be received to provide for my salary.

A total of \$12,000 is needed by mid-March to cover the immediate hard startup costs of the project. I would need to generate an additional \$45,000 in sponsorships to support the project for the remainder of the year as well as provide for my time. As fisheries research studies go, this is a very low budget project. Colleges and universities commonly add an additional 40% or more to such work for "indirect costs."

The study will be conducted through Cooperative Science Services, LLC of Charleston, SC, a research and consulting business I have just formed. The new dolphin study will be operated in the same manners that it has been conducted for the last four years, except without government bureaucracy and red tape.

If you are interested in seeing this study continue, then I need your help to secure financial support. Talk to your fishing clubs, representatives of fishing industry companies or anyone interested in fisheries conservation to encourage them to support this study. The success which this study has enjoyed over the years rests squarely with you, the sports fishermen. It has been through your dedicated efforts and sacrifices that dolphin were tagged from Key West to Nantucket Island, in the Bahamas and even in the Gulf of Mexico. Now the future of this study rests with you.

SC Dolphin Tagging Study Accomplishments

1. Acquired the largest time-location data base on almost 5,000 occurrences of dolphin fish.
2. Involved over 700 anglers and 290 different boats in tagging dolphin.
3. Tracked the movements of more than 100 fish along the US eastern seaboard.

4. Documented that dolphin found in the Florida Straits will travel to the waters off the northern Mid-Atlantic Bight.
5. Recorded the first documented travel of a dolphin from the southeastern Bahamas Bank to the US east coast waters.
6. Recorded the first documented movement of east coast dolphin traveling into the eastern Atlantic Ocean and the western Caribbean Sea.
7. Recorded the first recovery of a tagged pompano dolphin in US territorial waters.
8. Documented that dolphin fish can travel as much as 90 to 130 miles in one day.
9. Acquired the first real-time water depth and temperature track for a free roaming dolphin fish.
10. Secured the first known photographic documentation of a mottled yellow-brown camouflage color pattern on Atlantic dolphin.

Additional Information Needs

1. What route(s) is used in fall and winter to return south?
2. What area(s) of the western central Atlantic serve as wintering grounds for East coast dolphin stocks?
3. How does changes in the Gulf Stream flow effect dolphin occurrence and movements.
4. How closely allied is the abundance of Sargassum and the abundance of dolphin?
5. What are the range of water depths and temperatures used by dolphin off the US East coast?
6. Is there a pattern(s) to the diurnal/nocturnal use of surface waters?
7. Does vertical movement behavior and temperature selection differ between fish in the Mid-Atlantic Bight and fish south of Cape Hatteras?

New Web Address

For more information on the project, visit <http://www.dolphintagging.com> or contact

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