

Next Generation Archival Popup Tag

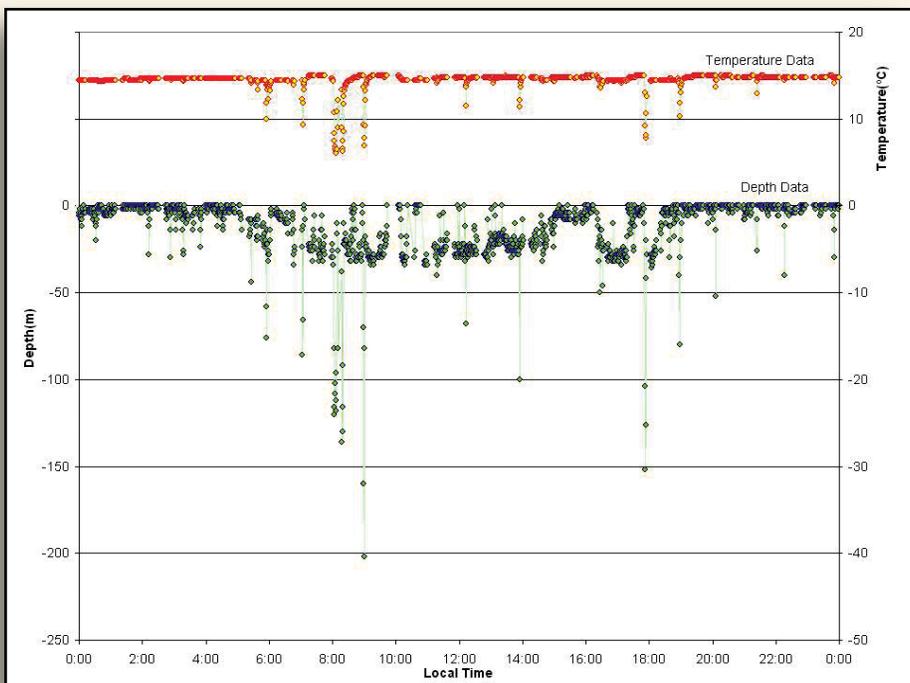
The introduction of our popup tag in 1997 revolutionized research on the travels of large pelagic fish. Since then, we have upgraded this tag's features many times though it physically remains the same as the original tag.

Over the last 2 years we have tested many new ideas on variants of this original tag. Fifteen years of miniaturizing our bird transmitters has made it possible for us to reduce the size of our electronics to around 2 grams. The challenge remained to design an effective smaller packaging. These innovations have now been put together in a smaller Archival popup tag. This new tag is roughly half the size and weight of the original tag and yet retains all of the original features plus many new ones. Full specifications will be available on our website in January. The improvements include:

- lower hydrodynamic drag
- lighter weight (40g)
- 15,000 message transmission capability
- embedded checksums with error correction capability
- 64 Mb non volatile memory
- longer battery shelf life

At the time of writing we have several of these next generation Archival popup tags deployed, both long term geolocating versions and high rate versions.

As we receive results from these tags, we will make them available on our website for your reference. So far the first three tags that have surfaced have performed as expected and transmitted impressive data sets back through Argos.



Graph shows one of many days of temperature and depth data transmitted back through Argos from this first new, smaller high rate tag deployed on a giant Bluefin tuna off Nova Scotia. In this high rate tag, measurements were recorded at a 40 second sample interval.

We expect this smaller tag to create a new revolution in fisheries research, making it possible to study smaller species and reveal their behavior and travels. The lower drag design is also an obvious advantage for studies of larger fish. It will be available in both a High Rate and long term Archival version in the spring of 2007 and will be competitively priced.

Sailfish, *continued from page 4*

Tag 55533 was deployed off South Carolina on 6/16/2005. Geolocation data suggested the sailfish stayed off the southeastern U.S. coast for approximately 85 days before making a gradual southeast movement to the Bahamas and eventually East of the Lesser Antilles until finally entering the Venezuelan Basin on approximately 1/8/2006. This is the longest recorded movement of any specimen of any species we have studied (approx. 2600 km straight-line distance). The fact that all three of these long term tags made a similar migration pattern from the Charleston Bump Complex to the Bahamas with broadly similar timing makes us suspect that this could be a major migration route for the western North Atlantic sailfish stock.

* Please note that geolocation estimates based on light levels are mathematically complex and provide a very broad estimate of a daily position for an animal that potentially moves hundreds of kilometers or more per day. Furthermore, geolocation estimates are subject to varying degrees of seasonal error (for example, during equinoxes), the error around each location is elliptical in nature (more error in latitude than in longitude), and error increases with proximity to the equator or the poles. Therefore, some daily position estimates may end up on land.



Actual size