



Are bluefin tuna fishes in the Mediterranean waiting for a sign from skies to start their migrations?

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In an effort to have a better understanding of the distribution patterns, reproduction and feeding habits during their Mediterranean stays, since summer 2008, some individuals of bluefin tuna have been tagged with pop-up satellite devices (PAT) in the NW Mediterranean. These tags are able to record the depth of the fishes as well as water temperature and light that is used to estimate their position. The number of individuals tagged from 2008 to 2010 was 4-6 per year, from which a total of 12 records lasted for more than 45 days. The first results of the records obtained show that fishes remained in a relatively confined area northern of the Balearic Islands during summer, with displacements shorter than 4-6 nautical miles per day. By the end of summer and during autumn, some of the tagged individuals, mostly the larger ones, started moving away at more than 8-10 miles per day (and occasionally 20-30). Starting dates of migrations - and restarting long displacements after some rest - appear to be in all cases related to stormy weather. For instance, in 2008, 4 individuals started on 20-25 September after a storm recorded in the whole Western Mediterranean area, and two of them resumed their travel around 30 October, coinciding with another storm. In 2009, after a short migration of one of the fishes on 12 September, coinciding with a general cooling, all of them started a longer migration on 7-9 October coinciding with another storm. Finally, two of the 3 individuals tagged in 2010 started moving on 11 September for a relatively short trip and the other one joined them when they resumed their migration on 9-10 October. Both dates were associated to stormy weather in the Western Mediterranean.

The answer to the heading question is still far from being confirmed, and the method does not allow for statistical confirmation. However, these preliminary data point to that storm events can act as a trigger for migrations. An indication of the autumn season, probably through the effect of vertical mixing caused in the upper ocean. In the next years, new information will shed more light on this curious impact of the storms.