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paths deduced from pop-up archival tags showed that fish did not interrupt their residencies in the Central North Atlantic to visit either known spawning area.

The economic and conservation implications of possible spawning of bluefin tuna in the Central Atlantic are enormous. Since 1981, Atlantic bluefin tuna have been managed by ICCAT as two exclusive biological units separated by a management line at 45° W. The biological rationale of this management division is based partly on the presumed separate and exclusive spawning grounds (in the Gulf of Mexico and the Mediterranean Sea), and very low mixing rates (<4-7 percent) across the line. An important result of the satellite tagging is the recent organization of an exploratory research cruise, scheduled for June, 2001, to locate and determine the reproductive status of giant bluefin tuna in the North Central Atlantic.

In the summer of 2000, we deployed ten pop-up archival tags on giant bluefin tuna in New England; these tags are due to report in September, 2001. This summer and fall, we



plan to release 80 giant bluefin tuna outfitted with these high tech, fishery-independent tags. Hopefully, this will yield the most extensive portrayal of their migration paths in the North Atlantic to date.

Researchers and fisheries managers alike are faced with the thorny question: are the warm waters of the Central North Atlantic home to spawning bluefin tuna? If not, then what is the role of this poorly-studied region in the bluefin tuna's life cycle? The initial longline cruise planned for bluefin research in summer 2001 will journey to these distant regions. It carries a high risk of failure, but with luck, we may soon have the answer to these critical management questions. Even then, the fact remains that Gulf of Maine bluefin comprise only a fraction of the combined Atlantic and Mediterranean population. High-tech satellite tags, remote sensing tools, extensive financial resources, and an expert, international scientific team will be needed to clarify the migration paths and spawning habits of this long-lived, highly migratory species.

A better understanding of the bluefin tuna's movements, behavior and spawning areas is vitally needed to improve international management and conservation of this valuable marine resource. ❖

Archival Pop-up tags record the water temperature and depth as well as the time of sunrise and sunset each day. These times are transmitted back to the user via Argos after the tag pops up. They are subsequently used to calculate a daily location estimate and hence reconstruct the track of the fish.

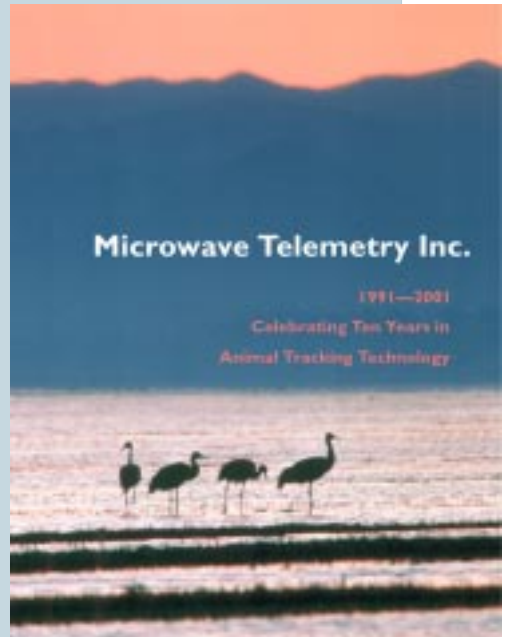
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Our Cover Photo Contest Winner!

Claire Mirande and Kate Fitzwilliams of the International Crane Foundation submitted the winning slide for our Cover Photo Contest. This beautiful image, shot by George Archibald, features Black necked Cranes in silhouette against a sunset in Caottai, China. They plan to deploy their free PTT on a Crane in Russia.

Look for your updated catalog in the fall.



Many thanks to all who visited our booth at the recent Argos International Conference in Annapolis, Maryland. We enjoyed talking to you all and appreciated the feedback.