

マグロの大回遊の謎に挑むポップアップタグ

山田 陽巳* 矢野 和成** 小菅 丈治**

Abstract

We evaluated the pop-up archival tag data obtained from an adult Pacific bluefin tuna, comparing with the ultrasonic transmitter data of the same tuna. The tag was designed to measure light intensity every two minutes for estimation of daily tag geolocation and ambient temperature every one hour. The tag was released from the fish and surfaced at a predetermined date and downloaded data recorded while on the fish via the Argos satellite system. The nine tag geolocation data showed the biases of easterly 1.10 ± 1.46 (mean \pm SD) degree and southerly 1.24 ± 3.85 degree from the positions determined by the GPS during tracking of the transmitter. The geolocation errors were mainly attributed to the vertical migration of the bluefin tuna around sunset and sunrise. The quick upward and downward behavior also affected the ambient temperature data. Despite of these disadvantages, the pop-up tags have value in use for monitoring basin-scale movement of larger fish like tuna because of their advantage that the recapture of the tags is not needed.