水研センター研報，第38号，109，平成26年
Bull. Fish. Res. Agen. No. 38, 109, 2014

Diet of young Atlantic bluefin tuna (*Thunnus thynnus*) in eastern and western Atlantic foraging grounds

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Abstract : Atlantic bluefin tuna (*Thunnus thynnus*) are highly migratory predators whose abundance, distribution, and somatic condition have changed over the past decades. Prey community composition and abundance have also varied in several foraging grounds. To better understand underlying food webs and regional energy sources, we performed stomach content and stable isotope analyses on mainly juvenile (60–150 cm curved fork length) bluefin tuna captured in foraging grounds in the western (Mid-Atlantic Bight) and eastern (Bay of Biscay) Atlantic Ocean. In the Mid-Atlantic Bight, bluefin tuna diet was mainly sand lance (*Ammodytes* spp., 29% prey weight), consistent with historic findings. In the Bay of Biscay, krill (*Meganyctiphanes norvegica*) and anchovy (*Engraulis encrasicolus*) made up 39% prey weight, with relative consumption of each reflecting annual changes in prey abundance. Consumption of anchovies apparently declined after the local collapse of this prey resource. In both regions, stable isotope analysis results showed that juvenile bluefin tuna fed at a lower trophic position than indicated by stomach content analysis. In the Mid-Atlantic Bight, stable isotope analyses suggested that 30% of the diet was prey from lower trophic levels that composed 10% of the prey weights based upon traditional stomach content analyses. Trophic position was similar to juvenile fish sampled in the NW Atlantic but lower than juveniles sampled in the Mediterranean Sea in previous studies. Our findings indicate that juvenile bluefin tuna targeted a relatively small range of prey species and regional foraging patterns remained consistent over time in the Mid-Atlantic Bight but changed in relation to local prey availability in the Bay of Biscay.

Original reference : Logan, J.M., E. Rodríguez-Marín, N. Goñi, S. Barreiro, H. Arrizabalaga, W. Golet and M. Lutcavage. 2011: Diet of young Atlantic bluefin tuna (*Thunnus thynnus*) in eastern and western Atlantic foraging grounds. Mar. Biol. **158(1)**, 73-85. Reproduced with permission from Marine Biology, Springer.

2013年9月5日受理（Received on September 5, 2013）
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