

# TAGGING DATA AND STABLE ISOTOPE ANALYSIS SUGGEST VERTICAL NICHE PARTITIONING BETWEEN PACIFIC TUNA SPECIES

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## POSTER

### *Abstract:*

Archival tags have provided insight into the horizontal and vertical movements of Pacific bluefin, yellowfin, and albacore tunas. However, little work has been done comparing the behaviors of these three species where they overlap in space and time. Furthermore, while recent studies call for better species-specific trophic level assessment, little is known about the relative trophic positions of these tuna species in the Eastern Pacific Ocean.

Geolocation estimates from archivally tagged Pacific bluefin, yellowfin, and albacore tunas were analyzed to locate regions of high spatiotemporal overlap. Individuals were found to overlap in late summer between 120° and 116° W and 28° and 34 °N. Diurnal dive patterns and time-at-depth were analyzed for these three species utilizing a common habitat. Yellowfin and Pacific bluefin were more surface associated than albacore, which spent more time at and below the thermocline, suggesting the possibility for vertical niche partitioning. Preliminary results from stable <sup>13</sup>C and <sup>15</sup>N isotope analyses of white muscle support this result, with albacore <sup>15</sup>N values ( $13.22 \pm 0.26$ ) nearly a full trophic level below yellowfin ( $15.32 \pm 0.28$ ) and Pacific bluefin ( $15.15 \pm 0.56$ ). Albacore may be foraging primarily on lower trophic level, less nutritionally rich DSL organisms such as crustaceans and larval cephalopods and teleosts. This behavior may have developed to minimize competition for food resources where these tuna species co-occur in space and time.

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