

Preliminary Abstract

Foraging ecology of juvenile loggerhead turtles: insights from isotope markers

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Abstract Bycatch is one of the key threats to juvenile marine turtles in the Mediterranean Sea. As fishing method depends on region and habitat, the susceptibility of marine turtles will likely vary according to inter- and intrapopulation variations in foraging ecology. Understanding these variations is necessary to assess bycatch susceptibility and to implement region-specific management. To determine if foraging ecology differs with region, sex, and size of juvenile loggerhead turtles (*Caretta caretta*), stable isotope analysis was performed on 171 juveniles from a range of foraging regions across the central and eastern Mediterranean Sea. Isotope ratios differed with geographical region, likely due to differences in the primary producer at the base of the food chain. Within each region the absence of sex-specific differences suggests that within an area, all similarly sized animals likely exploit similar prey items and habitats, and therefore, their susceptibility to fisheries threats will likely be similar. The isotope ratios of juveniles occupying the North East Adriatic and North Levantine basin increased with size potentially due to increased consumption of more prey items at higher trophic levels from a more neritic source. Isotope ratios of juveniles with access to both neritic and oceanic habitats did not differ with size which is consistent with them consuming prey items from both habitats interchangeably. With foraging habitats exploited differently among populations, the susceptibility to fisheries interactions will likely differ, therefore, region-specific management approaches will be needed.

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