Determination of Sea Turtle Migration Pathway by Satellite Monitoring Systems in The Eastern Mediterranean Coast of Turkey

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PROCEEDINGS OF THE THIRTY-THIRD ANNUAL SYMPOSIUM ON SEA TURTLE BIOLOGY AND CONSERVATION

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National Oceanic and Atmospheric Administration
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75 Virginia Beach Drive
Miami, Florida 33149

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whereas green turtle nesting beaches are located primarily in the Ogasawara Islands and Nansei Islands. Large juvenile loggerhead turtles are distributed along the southern part of the Pacific coast, although their distribution extends to northern parts of Japan. Foraging habitat of green turtles overlap with that of loggerhead turtles. To date, information on sea turtle distribution in Japan has been primarily based on nesting beach monitoring conducted by hundreds of independent researchers and stranding reports from researchers and citizens, and studies to systematically assess foraging habitat distribution have been limited. Since 2009, we have conducted informal interviews with fishermen to assess the state of coastal fisheries in Japan and determine the extent of sea turtle interactions. This study has also resulted in increased understanding of sea turtle distribution in the coastal waters of Japan, and we present these preliminary findings here. From 2009 to 2011, a total of 940 fishermen were interviewed at 150 ports across Japan, excluding Hokkaido, Tohoku, and Nansei Islands. Consistent with previous studies, Kyushu and Ki-i Peninsula regions were found to have relatively high sea turtle sightings and interactions compared to the Sea of Japan. Fishermen appear to interact with sea turtles more frequently in areas that directly face the Pacific and East China Sea, suggesting that loggerhead and green turtle abundance in southern Japan may be higher in areas facing the Pacific Ocean and East China Sea, whereas very few turtles enter the inland sea. The lower sea turtle density along the coast of Sea of Japan compared to the Pacific coast may be attributed to the geographical characteristics of Sea of Japan, which appears more like an inland sea surrounded by the Japanese archipelago, continental China and the Korean peninsula. We also found an interesting characteristic in turtle distribution in the Sea of Japan region, where sea turtles were found more often inside bays, such as Toyama Bay and Wakasa Bay, rather than coastal areas directly facing Sea of Japan. This is contrary to the Pacific side of Japan. Another interesting finding regarding sea turtle distribution in bays is that fishermen reported interacting with a handful of loggerhead turtles in Ise Bay throughout the year and even during the winter. Ise Bay opens to the Pacific, and previous studies along the Pacific coast near Ise Bay had shown that sea turtle interactions substantially decrease in winter. Similarly along the Pacific coast, very small number of loggerhead and green turtles are known to enter Osaka Bay and Seto Inland Sea only during the summer and exit the bay by late fall when SST declines below approximately 20 degree centigrade. These new insights to sea turtle distribution in coastal areas of Japan highlight the value of local knowledge fishermen possess, and will encourage further ecological research to validate the findings.

DETERMINATION OF SEA TURTLE MIGRATION PATHWAY BY SATELLITE MONITORING SYSTEMS IN THE EASTERN MEDITERRANEAN COAST OF TURKEY

Yakup Kaska[1], Eyup Başkale[1], Yusuf Katılmıss[1], Meryem Tekin[2], Çiğdem Fak[2], Mücahit Seçme[2], Çisem Sezgin[2], Fulvio Mafucci[3], Sandra Hochscheid[3], and Flegra Bentivegna[3]

[1] Pamukkale University, Faculty of Arts and Sciences, Department of Biology, Denizli, Turkey
[2] Pamukkale University, Sea Turtle Research Centre (DEKAMER), Denizli, Turkey
[3] Stazione Zoologica, Anthon Dohrn, Napoli, Italy

Sea turtles in the eastern Mediterranean are isolated from the Atlantic populations and information about migration patterns of males and females in this region is sparce. The understanding of migration patterns, distribution, habitat use and resource requirements is essential for determining the appropriate conservation methods for sea turtle populations. Satellite tracking has become a widely used tool for sea turtle researchers over the past decade. We attached satellite tags to nine loggerhead sea turtles between 2010-2012 to study the migration patterns of sea turtles (nesting or rehabilitated at the Rescue Center (DEKAMER)) on Dalyan beach, Turkey. We are still receiving data, but our initial results indicate that most of the male sea turtles from western Anatolia coasts did not migrate to other countries, but remained near the Turkish coast. Some females showed similar patterns, but a few females migrated to the shores of Tunisia, Libya, Egypt, and Israel. Our initial results suggest that collaborative conservation efforts are necessary for the protection of sea turtles in the Mediterranean.