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Warmer air temperatures do not negatively affect body size and emergence success of loggerhead turtle (*Caretta caretta*) hatchlings at Yakushima Island, Japan, the largest rookery in the North Pacific

Hideo Hatase, Shun Watanabe

Faculty of Agriculture, Kindai University, Japan

Knowledge of the determinants of population size is essential for effective conservation and management of endangered species. Population growth is dependent on offspring survival. Initial survival of sea turtle offspring is subject to the incubation environment, where higher incubation temperatures negatively affect their vigour and morphology. Thus, at some rookeries with drastic fluctuations in sand temperature, hatching characteristics have been demonstrated to exhibit seasonal and annual variation. We examined whether body size and emergence success of loggerhead turtle (*Caretta caretta*) hatchlings decline seasonally at a temperate rookery (Yakushima Island, Japan) in correlation with the seasonal rise in air temperature. Clutches collected during two survey periods within the same nesting season were incubated on the same beach hatchery over two years. The body size of adult females that laid experimental clutches was not significantly different between the survey periods. Corresponding to seasonally rising air temperatures, incubation duration for clutches of the first survey period was significantly longer than that of the second. However, both hatching size and emergence success did not decrease seasonally, and there were no significant negative correlations between the mean air temperature or the estimated mean sand temperature during incubation and the hatching characteristics. These may be due to a combination of coarse white sand and high rainfall on the experimental beach, which might have lowered sand and nest temperatures and elevated sand moisture. Seasonal stability in hatching characteristics may be one of the reasons Yakushima Island is the largest rookery for loggerhead turtles in the North Pacific