

GREEN TURTLES NESTING RANGE EXPANDS UNDER WARMING CLIMATE

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Rising global temperatures could lead to an increase in the nesting range of green turtles in the Mediterranean Sea, as per a study in *Scientific Reports*. Under the worst-case climate scenario, the nesting range could increase by over 60% points, spreading west from the current area to include much of the North African, Italian, and Greek coastlines.

Human-caused climate change has caused sea surface temperatures to increase globally, with severe impacts on some marine life. Sea turtles are potentially particularly susceptible, as the sex of their offspring is dependent on incubation temperature. Although previous research has investigated the effects of climate change on several different populations of sea turtles worldwide, there has been very little research into the green turtle (*Chelonia mydas*) population in the Mediterranean Sea.

The researchers developed a model for predicting the suitability of a point on the Mediterranean coastline as a green turtle nesting location. The authors first assessed the predictive power of the model by evaluating it against 178 confirmed nesting locations, recorded between 1982 and 2019 and mainly limited to Turkey and Cyprus in the eastern Mediterranean. They found that sea surface temperature, sea salinity, and human population density most affected the suitability of a specific location as a nesting site.

They then modelled how four different greenhouse gas emission scenarios could affect the nesting range of green turtles in 2100. They found that progressively worse climate scenarios were associated with greater increases in the nesting range in the Mediterranean. Under the worst-case climate scenario modelled, the nesting range increased by 62.4% points, and included the North African coastline to Algeria, much of Italy and Greece, and the south Adriatic Sea. However, the authors warn that this increase in green turtle nesting range in the heavily populated central and western Mediterranean would bring them into increased contact with humans and urbanised beaches, which could negatively affect nesting success.

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