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**Australian Government**

**Department of the Environment, Water, Heritage and the Arts**

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## **Impacts of climate change on Green Sea Turtles**

Climate change will cause additional pressure on already threatened sea turtle populations by skewing their sex ratio towards female, reducing available nesting space and altering their exposure to cyclones, according to new research results to be announced at the 2009 Annual Conference of the Marine and Tropical Sciences Research Facility (MTSRF).

The MTSRF has funded James Cook University PhD student Mariana Fuentes to investigate *“How the largest green turtle population in the world will be affected by climate change”*.

“Sea turtles are particularly vulnerable to climate change, because they have life history traits strongly tied to environmental variables and nest in coastal areas vulnerable to sea level rise and cyclonic activities,” Ms Fuentes said.

Climate change can affect the distribution, foraging ecology and reproductive output of sea turtles.

“The broad aim of my study is to explore how sea turtles’ reproductive output will be affected by an increase in temperature, a shift in cyclonic patterns and a sea level rise,” she said.

The largest green sea turtle population in the world, which nests on beaches in the northern Great Barrier Reef and the Torres Strait, was used as the case study.

The results of the research to date indicated that:

- The sex ratio of hatchlings produced by this population will skew towards females by 2070.
- This population’s exposure to cyclone disturbance will decrease by 25% by 2070.
- 38% of available nesting area across all the rookeries used by this population may be inundated as a result of sea level rise.

Ms Fuentes will continue her research to assess the combined impacts on each of the nesting grounds used by the north GBR green sea turtle population.

“These results will be extremely important if we are to successfully manage our sea turtle populations as the climate changes,” she said. “Identification and protection of the nesting areas likely to be most productive will help re-build resilience of vulnerable turtle populations.”

