

The Impact of Climate Change to Hawksbill Turtles

Hawksbill Turtles

Eretmochelys imbricata, also known as hawksbill turtle, Tortue caret, Tortue imbriquée, Tortue à bec faucon, Tortue à écailles, and Tortuga carey are an important component of marine ecosystems. They are considered a keystone species in coral reef and seagrass systems, feeding on invertebrates, with a preference for sponges.

Geographical Distribution

Hawksbills are distributed around the world with concentrations in the central Atlantic and Indo-Pacific regions (Figure 1). Nesting typically occurs in a widespread, dispersed pattern throughout the tropics on beaches in at least 60 countries. Hawksbills are more common where coral reef formations are present, most likely because of the increased food resources.

The Problem

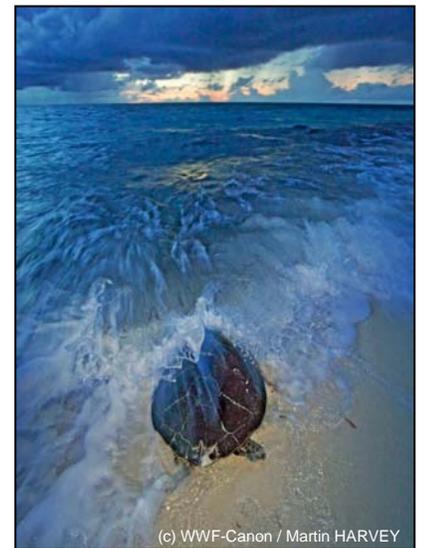
Scientists have identified that the hawksbill global population has declined by over 80% during the last century and most populations are declining, depleted or are remnants of larger aggregations. Based on this information and projected declines over the next three generations, hawksbill turtles were listed as Critically Endangered by the IUCN - The World Conservation Union - in 1996.

The Cause

Like other marine turtles, hawksbills are threatened by the loss of habitat due to coastal development, poaching, excessive egg-collection, fishery and other human-related mortality, pollution, and climate change. It is this last threat, climate change, which has some turtle conservationists worried about the long-term survival of hawksbill turtles because it threatens to compound all other threats and potentially push the species over the brink of extinction.



Hawksbill turtle laying eggs on a beach above high water mark



Hawksbill turtle female heading back to the sea after laying eggs. Rising sea levels will threaten their beach habitat.

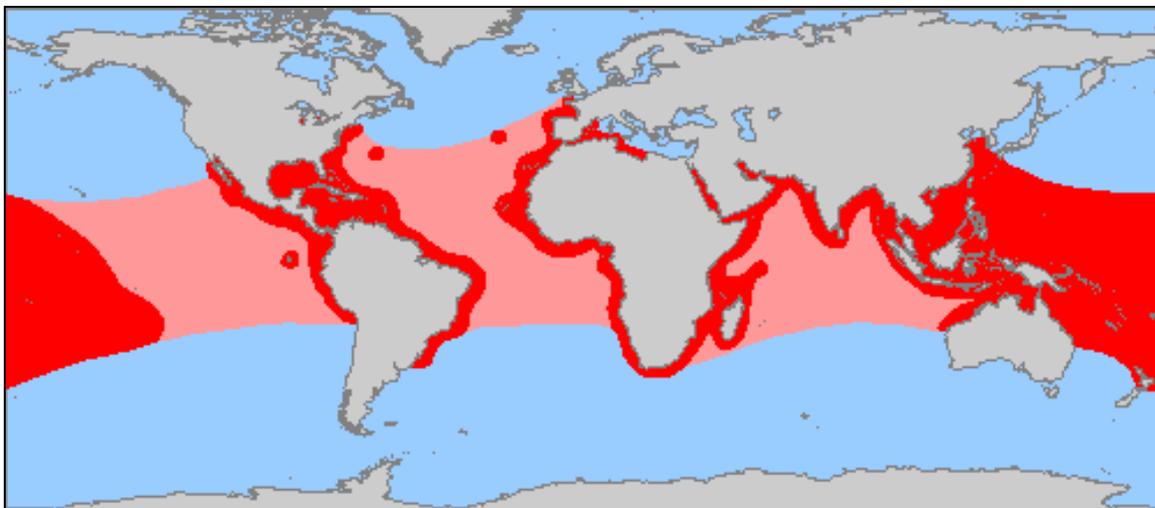


Figure 1. Global distribution of hawksbill turtles. Dark areas designate known distribution and lighter areas represent unknown areas (adapted from FAO 1990).



The Impact of Climate Change to Hawksbill Turtles

Climate Change

Climate change effects include:

- 1) Loss of nesting and feeding habitats due to sea-level rise;
- 2) Increased sand temperatures, which can lead to changes in sex ratios or potentially result in mortality;
- 3) Increased ocean temperatures, which can lead to coral bleaching and other damage to turtle feeding habitats;
- 4) Changes in ocean currents, which can modify migrations paths and feeding patterns.



Marine turtles heading to the ocean.

Assessing the Impacts

WWF Latin America and Caribbean Programme and the Climate Change Programme are organizing a research project to quantify the impacts that climate change will have on the global population of hawksbill turtles, provide a model for assessing future climate change impacts to other marine turtle species, and begin to shape how we develop conservation strategies to protect hawksbill turtles in the face of climate change.

The first stage of this project will be conducted in the Caribbean region. This study will identify the location and susceptibility of known hawksbill nesting areas to climate change and will provide clear management prescriptions so that conservationists can reduce the vulnerability of hawksbill turtles and increase their resilience to climate change.

When completed WWF will provide tools, such as a map highlighting current nesting areas and migration paths (Figure 2) that are potentially threatened by sea level rise, so that managers and conservationists can prioritize their efforts.



Hawksbill turtles live on coral reefs where their favorite food, sponges, are most plentiful.

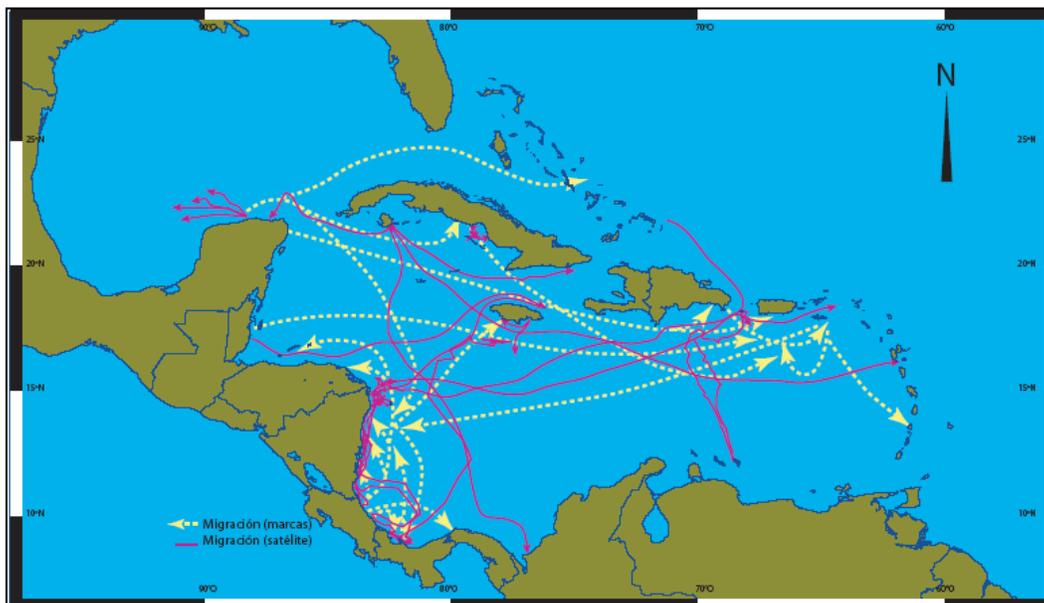


Figure 2. A map of the Latin America and Caribbean region with hawksbill migration routes delineated by dashed yellow and solid purple arrows. Map courtesy of www.hawksbillwwf.org.

For More information

For more information on the impacts of climate to hawksbill turtles, please contact:

Michael Case, Research Scientist
WWF Climate Change Programme

michael.case@wwfus.org