

The Disappearance of Leatherback Sea Turtles

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Leatherback sea turtles (*Dermochelys coriacea*) native to the Canadian coast of the Northern Pacific Ocean are living representatives of a group of reptiles that have endured life on Earth and traveled our seas for the past 100 million years. They are a fundamental link in marine ecosystems; however, their prevalence is declining as lethal factors such as human interference and climate change threaten their existence. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) has classified leatherback sea turtles as Critically Endangered.

Leatherback hatchlings emerge on the shores of Central and South America. These infant sea turtles are not predicted to make it safely into the ocean alive. Baby leatherback sea turtles have a low survival rate once they leave the nest - only 2 out of 1000 laid eggs live long enough to reach adulthood. A hatchling faces threats from humans, seagulls, and other predators as they make their way from nest to the ocean - and once they arrive at sea, threats multiply. If they survive the journey, the hatchlings then migrate far north to Canada. There, these sea turtles feed primarily on jellyfish for 3 to 4 years. The leatherbacks migrate back south toward South America after their feeding period to reproduce, and the cycle continues.

As their most significant threat, humans have played a key role in the decline of the global leatherback population. The population of leatherbacks has declined by 60% in the last four decades. With marine pollution as a driving factor, leatherbacks are fatally ingesting or becoming entangled in marine debris (mostly plastic from sheeting, bags, or deflated balloons, discarded fishing line, and tar balls). Sea turtles are unable to digest the plastic if swallowed, which may cause starvation in a phenomenon called pseudo-satiety. Marine entanglement also often results in serious injuries, including severe cuts and necrosis, or the loss of a flipper which may lead to death by drowning.

Coupled with anthropogenic threats, climate change and the subsequent warming of global temperatures will further stress terrestrial and ocean systems, as our oceans absorb over 80% of the extra warmth. As marine turtles have temperature dependent sex determination, climate change now plays a role in

determining the sex of hatchlings. Marine turtle eggs incubate at temperatures between 25 – 35°C. As such, increasing temperatures of nesting sands may result in a greater proportion of hatching females, thus destabilizing future populations. Additional to this, before baby leatherbacks hatch, there are potential threats to nests caused by rising sea levels, increased storm frequency and intensity, uncontrolled coastal development, vehicle traffic on beaches, and other human activities that have directly destroyed or disturbed sea turtle nests around the world.



Photograph courtesy of Pixabay public domain

With these threats in mind, on a regional scale, QLF has established several marine conservation programs designed to contribute to leatherback and other marine mammal conservation in Newfoundland and Labrador. These programs promote proper marine debris disposal, host community beach cleanups, and develop public education initiatives highlighting the importance of regional species at risk and the role we play in their conservation.

Globally, leaders worldwide are collaborating to realize the 30X30 pledge, an international agreement established to protect 30% of the world's land and oceans by 2030 - a target aimed at preserving biodiversity and ecosystem resilience. A key component in reaching this goal is the establishment of Marine Protected Areas (MPAs) - areas designated by governments to restrict access to marine environments, in order to protect fragile ecosystems. MPAs are significant in sea turtle conservation, providing a refuge from anthropogenic stressors and ensuring turtles have access to the resources needed for their survival.

Though the future of leatherback sea turtles is uncertain, QLF's regional work, and the global collaboration of many conservation leaders offers a sustainable and hopeful way forward.

Reading Materials:

1. Leatherback Sea Turtle (*Dermochelys coriacea*): COSEWIC assessment and status report. 2015. Government of Canada. Accessed on July 6, 2023. Retrieved from <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/leatherback-sea-turtle-2012.html>
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