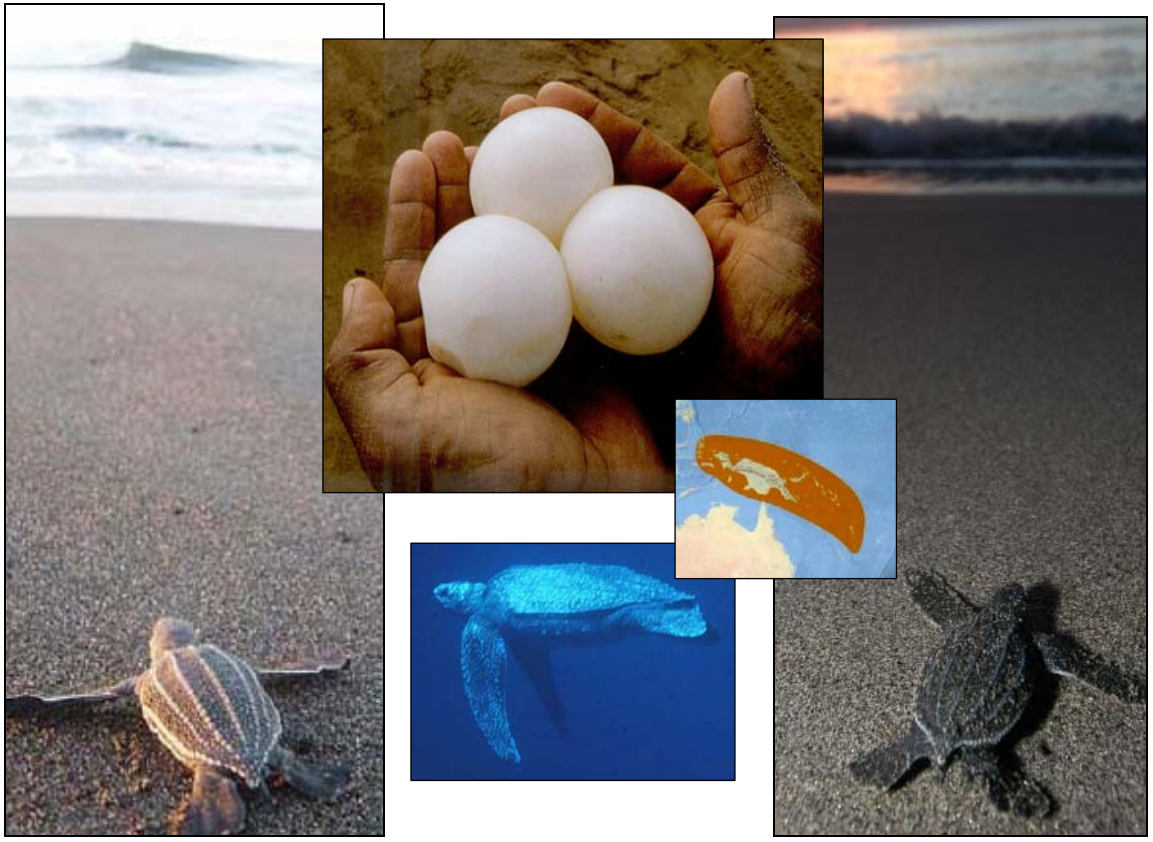
Leatherback Turtles



“Their Future is in our Hands”

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Resource Material

2009

This resource material has been developed to increase awareness on the plight of leatherback turtles in the Western Pacific Ocean.

Introduction

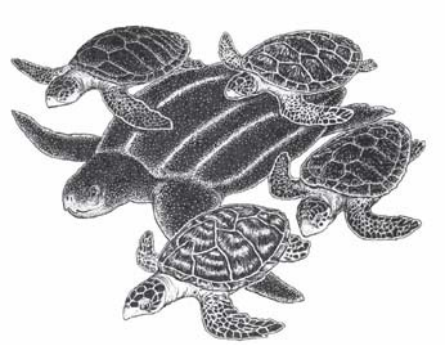
Leatherback turtles are the only surviving descendant of a sea turtle species that evolved 110 million years ago. Unfortunately for them, their numbers have declined by 95 % in the Western Pacific Ocean since the 1980s due the excessive egg harvesting, from being caught in open-ocean (pelagic) and coastal fisheries (including longline, gillnet and trawl fisheries).

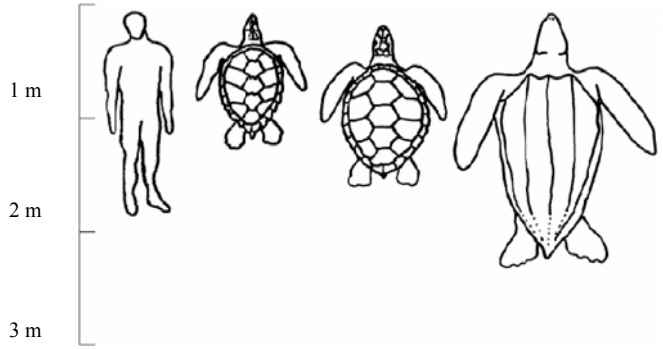
The leatherback turtles that nest in Melanesia (Indonesia's West Papua Province, Papua New Guinea, the Solomon Islands and Vanuatu) are one of the last surviving populations left in the Western Pacific Ocean.

Subsequently . . . . . *"Their future is in our hands".*

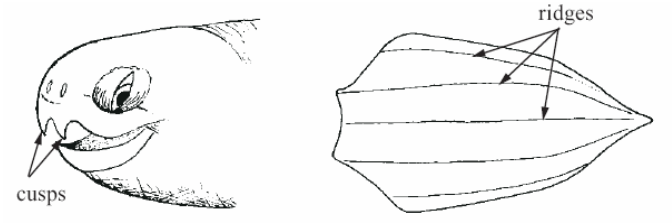
Biology and Ecology

The leatherback turtle is the largest sea turtle (a *reptile*) in the world. Leatherback turtles have been known to reach up to 1,000 kilograms (or 1 tonne), but usually weigh between 300-500 kilograms.

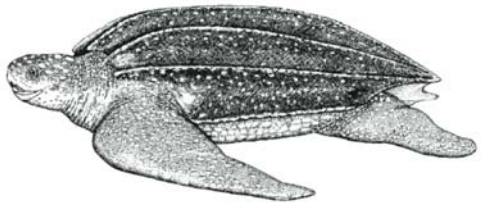




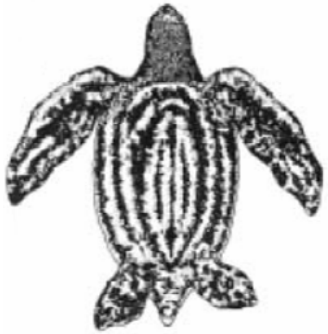
The leatherback turtle has a different type of mouth then other sea turtles; it has two sharp-edged cusps on its upper jaw, and a single, pointed central hook that fits between the two upper cusps when the mouth closes on its lower jaw. The leatherback turtle lacks the hard shell of other sea turtles; instead it is covered in a rubber-like, leathery skin. The back of a leatherback turtle is covered in ridges. Flippers of the leatherback turtle are large and paddle-shaped, which helps it to swim vast distances across the oceans. Males are distinguished from females by a longer tail.

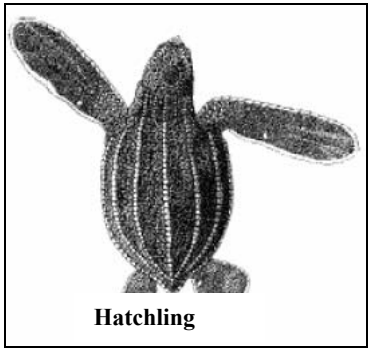


The colour of the leatherback turtle is black, with scattered white blotches. These white blotches become very dense on its belly. Pinkish blotches can sometimes be seen on the neck, shoulders, and groin. Females have a pink area on top of head. Hatchlings and juveniles have more distinct white blotches, clearly arranged along the ridges.



Adult





Hatchling

The age of sexual maturity (or *reproductive age*) for leatherback turtles is between 12-15 years (in comparison green turtles take about 50 years and hawksbill turtle take around 30 years), with a life expectancy of between 35-40 years. Leatherback turtles nest every 2-4 years. The nesting season for leatherback turtles in the Melanesia is usually between October and March. In one season, a leatherback turtle will nest, on average, three times. This means she will lay approximately 300 eggs in one season. From studies conducted by scientists, a female leatherback turtle may nest for up to 20 years. This means she will nest possibly 7 times and lay approximately 2,100 eggs in her lifetime. If the nests are left alone (if they are not flooded, or the eggs stolen by human beings, or eaten by pigs or dogs), then after 55-60 days, hatchlings will emerge.

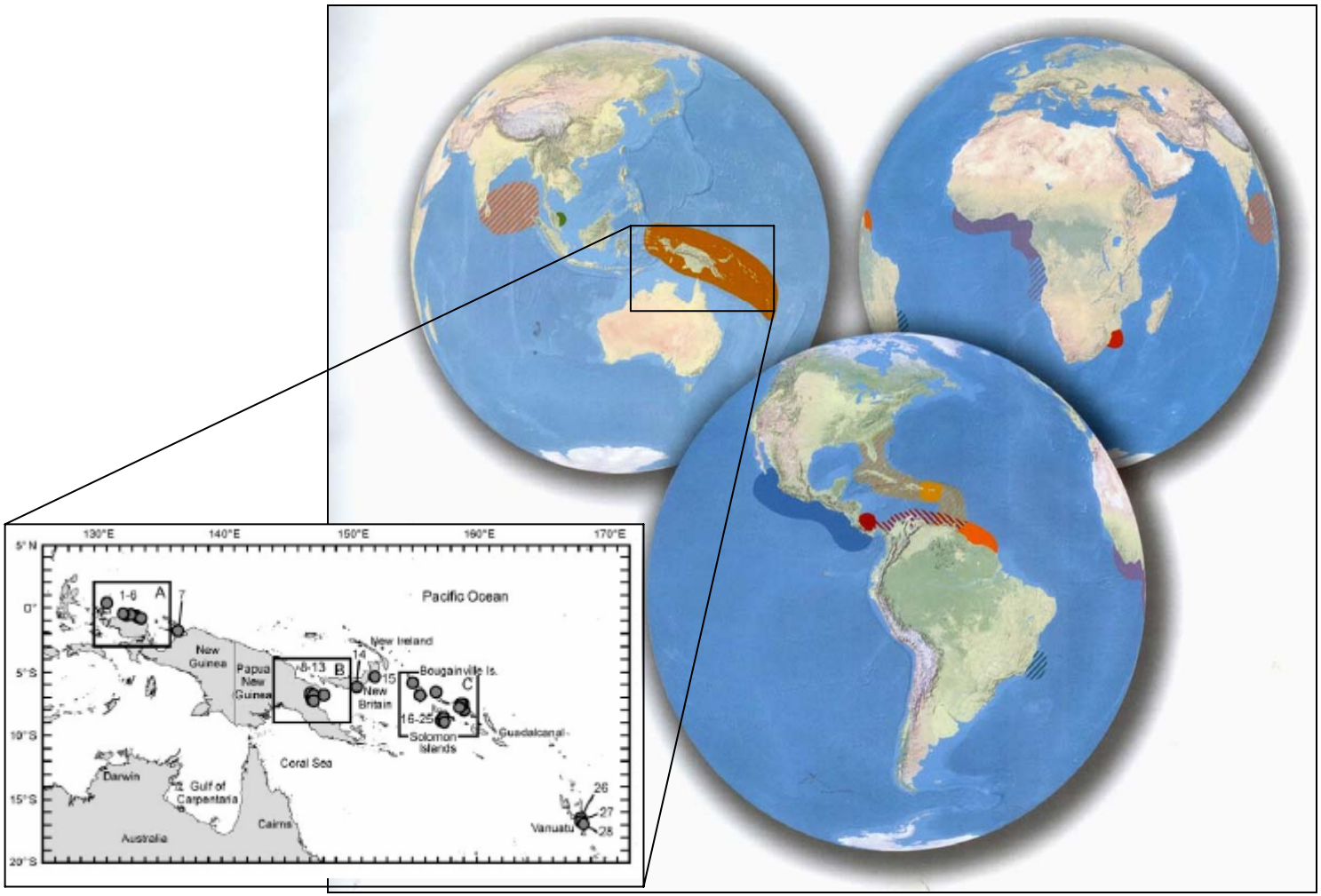


Diet

The diet of the leatherback turtle consists mostly of jellyfish. It is thought that leatherback turtles need to eat at least 50 large jellyfish everyday (equally about 200 litres or 44 gallons) to stay healthy. Leatherback turtles will regularly dive to depths of 1,000 metres or more in search of jellyfish.


Nesting Locations

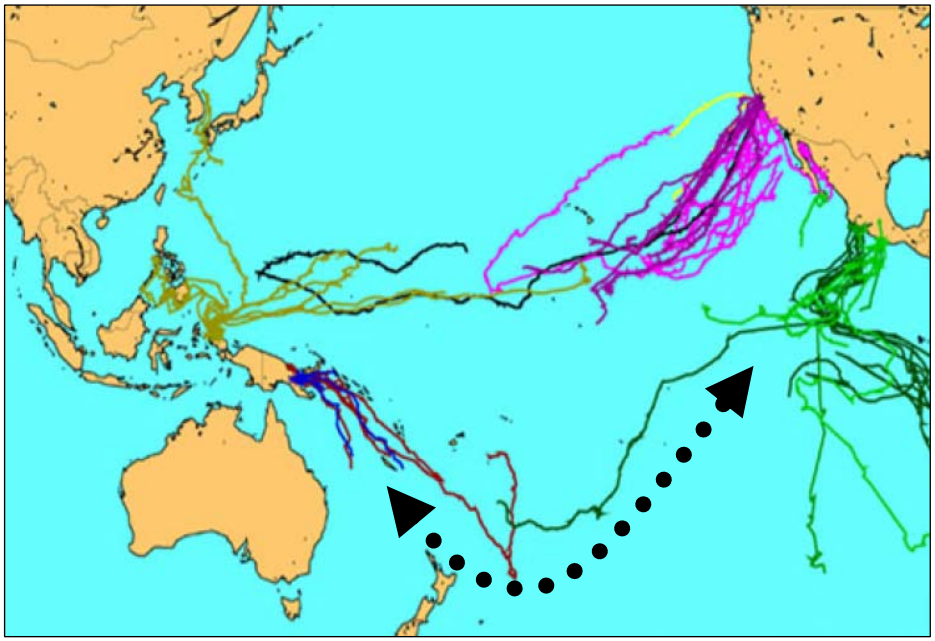
Leatherback turtles are known to nest in many location around the world. In the Western Pacific Ocean, they have been reported to nest in Malaysia (this population is now thought to be finished or *extinct*), the Philippines, Indonesia (including West Papua), Australia, Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Kiribati, Tuvalu, American Samoa, the Solomon Islands, Vanuatu, Fiji, French Polynesia and Papua New Guinea.

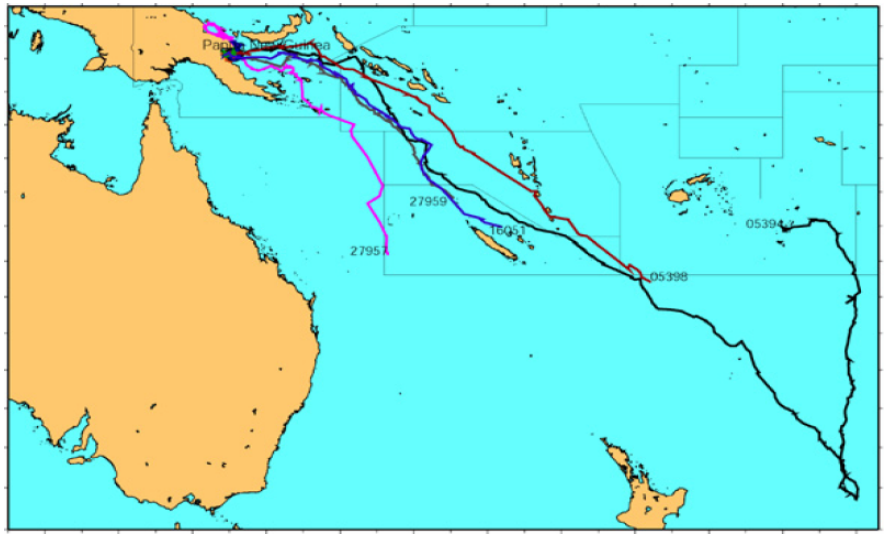


Nesting locations in Melanesia

Migration

Knowledge of the movements (or *migration*) of leatherback turtles has been aided by the use of satellite transmitters. During 2001-2003, several leatherback turtles were satellite tagged in the Morobe Province of Papua New Guinea. This research showed that turtles that nest in Papua New Guinea head down to Vanuatu and New Caledonia and then into the open ocean of the South Pacific and finish up in the waters of Mexico and the United States of America where they feed on jellyfish.



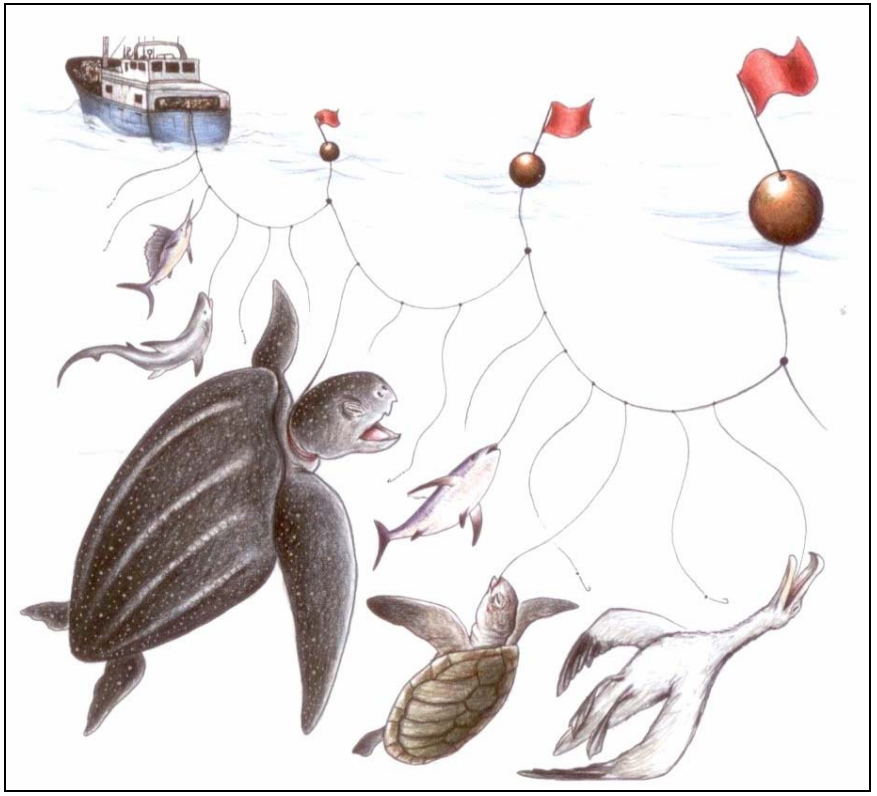


Threats

Harvesting and predation
Throughout the world where leatherback turtles nest, people consume their eggs and in some places kill them for their meat, oil and leathery skin. Occasionally, leatherback turtle are killed for fun. Many nests are/were lost to predation by dogs and pigs.

Coastal development
Because leatherback turtles nest on beaches, sometimes these are destroyed by coastal development because human beings also want to live and play on these same beaches. In many places, this can be seen by the expansion of villages as human populations increase. In other parts of the world, leatherback turtle beaches are affected by dredging, ship and small boat traffic and construction. Light pollution from this human expansion also disrupts nesting behavior and confuses hatchlings when they emerge from the nest, often resulting in high numbers of deaths (or *mortalities*).

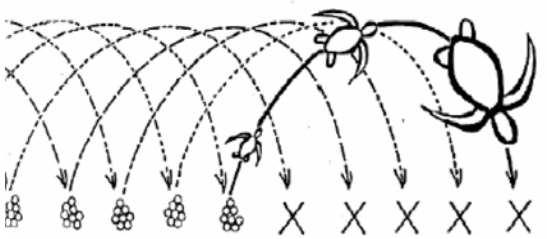
Fisheries impacts.
Leatherback turtles are also caught accidentally on fishing lines and in fishing nets by fishing boats that are fishing for tuna, swordfish and other large pelagic predatory fish. When this happens they often die from drowning.



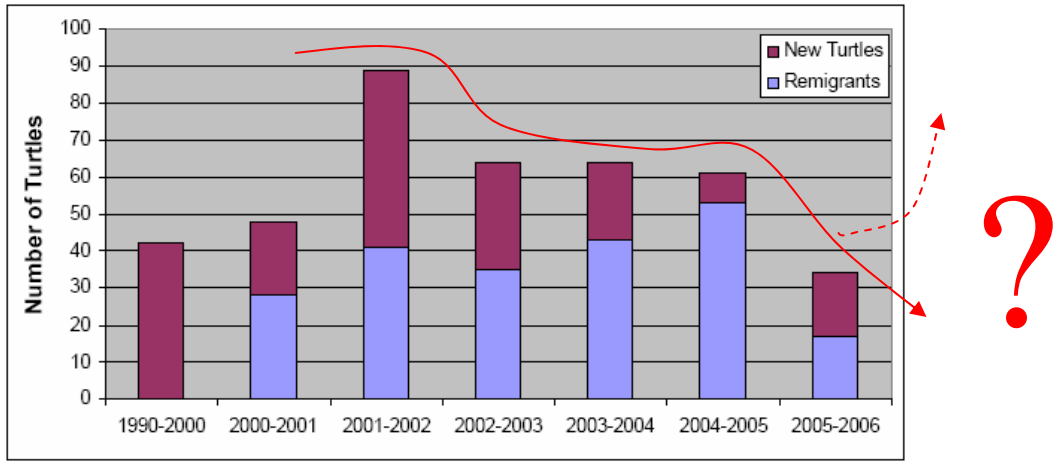
Pollution
Marine pollution like plastics, old fishing gear, dirty oil and other rubbish can kill leatherback turtles if they eat them or get tangled in them. Chemical pollutants can also make leatherback turtle weak and thus making them sick from disease.

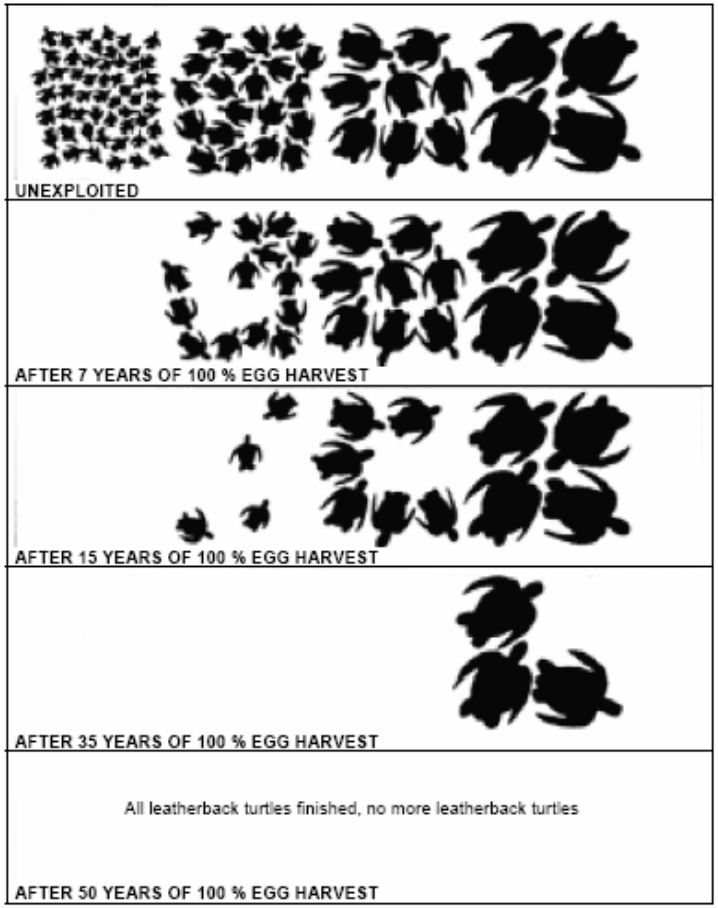
Global warming.(or Climate change)
Global warming can impact on leatherback turtle populations through sea level rise, increased storm and cyclone activity that erode nesting beaches. Because the temperature of the sand determines the sex of the hatchlings, global warming can also change the sex ratios of hatchlings by making the sand where the nest is to hot.

Decline
Because of these threats, leatherback turtles in the Western Pacific Ocean are facing extinction. This means fewer leatherback turtles are coming back to nest on the beaches in Melanesia. One reason for this is the previous consumption, predation and/or selling of leatherback turtle eggs. It is not until many years later, even decades, that the impacts of this harvesting are noticeable by fewer turtles arriving to nest. For every year that eggs are/were taken from the beach, less hatchlings make it to the sea, meaning less adults coming back to nest. If this continues, eventually, there will be no turtles as the remaining turtles die off with no replacements coming through.



The graph below shows declining numbers at Kamiali (Lababia) in Papua New Guinea, where studies have shown that not many new leatherback turtles are making it back to nest.





Conservation Measures

Given the current depleted state of the Western Pacific Ocean leatherback turtle population it is best that all human harvest and predation by pigs and dogs of leatherback turtle eggs stops, at least until population recovery takes place. The simplest way to achieve this is by placing bamboo grids over nests and this has improved hatchling production. This will help in making sure, leatherback turtles keep returning to nest in the future.





We can help them . . . . . *"Their future is in our hands"*.

Quick Quiz

1. A species becomes _____ when there are no more of them alive left on Earth.

2. Leatherback turtles are not mammals, rather they are large, air-breathing _____ that lives mostly in the ocean.

3. Only adult female leatherback turtles lay eggs, and to build their nests they must return to the _____ they hatched from.

4. Leatherback turtles sometimes choke and die after eating discarded _____ which they mistakenly eat because they look like jellyfish.

5. Leatherback turtles are known to _____ thousands of kilometers from their main feeding areas to where they mate and nest.

6. Leatherback turtles face many threats to their survival, but most of these are caused by the activities of _____.

7. To conserve leatherback turtles for future generations, nests must hatch and _____ must reach the sea.

Draw me and colour me

Answers: 1. extinct, 2. reptiles, 3. beach, 4. plastics, 5. swim, 6. humans, 7. hatchlings