

A souped-up turtle – 1

Between South America and Africa, cratered and volcanic Ascension Island rises out of the South Atlantic Ocean. This isolated and tiny isle of only 88 square km (34 square miles) is inhabited by, among other birds, the sooty tern, white tern, brown noddie and black noddie, and was home to the now extinct Ascension crane.

- The land crab is the largest native land animal. Inhabitants of the nearby waters are barracuda, blackfish, marlin, sailfin and tuna, to name a few. But between November and May the island's main beaches are covered with thousands of **green sea turtles**. Before this, they were feeding on sea grass and algae on the continental shelf off Brazil.

Having built up the necessary energy resources, each green sea turtle sets out on **a long, over-the-horizon voyage**, paddling with powerful front flippers. Her streamlined body, steered with the rear flippers, glides through the water at a speed approaching two kilometres per hour. Coming up for air from time to time, she **quickly refills her lungs** with a single explosive exhalation and rapid inhalation and continues on her journey.

- Although lacking mankind's navigation resources in modern shipping, **the turtle heads unerringly** towards her sandy nesting beach on that tiny mid-ocean island. Such is her endurance that she is able to swim for **several weeks at a time** without stopping for a rest. After travelling the 2,400 km, she arrives at the breeding site, offshore of the island, with the males and other females.

A whole group of females **mate about the same time** in the waters off shore from the nesting beach. Then, while the males return to their underwater grazing nearby, each female labouriously drags herself onto the beach. This generally **occurs at night**, when few predatory eyes can watch her climbing **above the high tide line** to find a good nesting site in the sand.

- Using her rear flippers, she digs a hole **about 45 centimetres deep**, around the **same time as the others** in the group. She then starts laying her batch of up to 150 soft-shelled eggs. But the job is not yet done. After sweeping the sand back into the nest, she runs her flipper over the top, **shaping and smoothing** the surface. When possible, she then **disguises the nest with vegetation** so that after her departure it will not draw the attention of any predator on the prowl.

After this she moves back down the beach into the water and returns to the feeding site, leaving the eggs to incubate in the warm sand. Will they be boys or girls? **Warmer sand** tends to produce **females**, while the **not-so-warm** sand produces **male** hatchlings. But this is not the end of it for this female. To make the long voyage worthwhile, she, with rest periods in between, will perform the same process **up to half a dozen times**, producing upwards of 900 young sea turtles.

- The eggs incubate in the sand for about two months. There is a remarkable **three-stage strategy** to minimize the predation of hatchlings before they find their way to the open sea. The young turtles break free of the egg shell, **dig through the sand**, and crawl toward the sea **at night**. The eggs in one nest **hatch together** over a short period of time, about the same time as those **in the other nests**, and so predators are overwhelmed by sheer numbers.

Entering the sea, the young turtles spend the first three to five years of their lives **in the open ocean**, feeding on small free-swimming **aquatic animals**. Approaching maturity, **they find their way** closer inshore off the Brazilian coast to become full-time **grazers of seagrass**