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# The mystery of the Turtles' "Lost Year"

WHEN A GREEN TURTLE comes ashore to nest, she lays about 100 eggs and heads back to sea, leaving them buried in the sand. Sixty days later the baby turtles hatch out, erupt in groups from the sand and struggle to the sea. At that stage they are small enough to lie in the palm of the hand.

On the perilous journey across the open beach they are a prey to crabs, gulls and herons. As they plunge through the surf they meet with waiting predatory fish. Those hatchlings that survive to reach the open sea then simply vanish. No one knows where they go for the next year or so until they turn up again as adolescents, grazing on turtle grass along their native coasts, and now grown to the size of a dinner plate.

This is not only true of the green turtle, but of all marine turtles all over the world. Their "lost year" is a puzzle to scientists that has not yet been solved. It is a problem of considerable importance to developing countries in the warm water regions of the world. For the eggs and meat of marine turtles provide local peoples with valuable protein. If conservation measures are to be successful in keeping turtle numbers high enough to allow sustained exploitation, full knowledge of the turtles' life cycle is essential.

The most plausible theory to explain the absence of the first year young is that they take refuge in weed rafts drifting in the open sea. It was to test this theory that an IUCN/WWF Project was organised.

The Project has concentrated on the Caribbean off the coast of Central America, and along the east coast of Florida and in the adjacent Bahamas. Research is focused particularly on the area of Tortuguero beach (the name derives from the Spanish for turtle) in Costa Rica, which is one of the last strongholds of the green turtle (*Chelonia mydas*) in the Caribbean. Off the coast in this region is a circular current known as the Southwest Caribbean Gyre, in which lines of weed and rafts of sargassum revolve.

Sargassum weed is the name given to a number of species of brown algae that grow on rocky tropical shores. The plants break loose in rough weather and drift with surface currents, living on indefinitely and acting as hosts to a varied community of fish, crabs, octopuses and sea slugs. Many plants get caught in the Gulf Stream and are swirled into the central north Atlantic, where they accumulate in the Sargasso Sea - the quiet centre of the currents.

The general aim of the Project is to test the theory that weed rafts and drift lines are important during the migrations of marine turtles in their first year.

The Chairman of the SSC's Marine Turtle Group, Dr. Archie Carr, who is the project executant, reports:

"During September 1980, 2000 young turtles were marked at the nesting ground of the green turtles at Tortuguero. It is hoped to be able to corroborate that hatchlings picked up in

sargassum off Panama or Colombia have travelled with the weed from Costa Rica.

In Florida, the stomachs of 110 post-hatchlings that were thrown up by storm waves have been examined. The stomachs of young loggerhead turtles (*Caretta caretta*) washed ashore in sargassum wrack at Melbourne, Florida, contained sargassum leaves and floats and recognisable parts of eight species of molluscs and crustacea, some of them known only from sargassum.

During the coming months, new efforts will be made to extend knowledge of the seasonal distribution of sargassum fields and weed lines, to multiply records of hatchlings in them and to gather evidence that the turtles remain in the rafts for protracted periods.

Surveys of sargassum fields and weed lines will be made in strategic areas. The inner edge of the Gulf Stream off

the Atlantic coast of Florida will be carefully searched, especially along the southern peninsula where the current passes closest to shore. For these surveys small boats will be hired by the day from local fishermen.

At Tortuguero, where sargassum comes ashore in abundance during February, daily beach patrols will be organised and rewards offered for turtles of lost-year size.

The stomachs of sea turtles of lost-year size found dead on shore will be examined for food items that indicate residence in sargassum rafts.

During October 1981, experiments will be conducted off Tortuguero to test the ability of newly-hatched turtles to hold continuous courses away from their natal shore and to show their behaviour on encountering mats of sargassum."



*A green turtle hatchling on the first stage of a precarious journey. The IUCN/WWF project is helping to solve the mystery of the "lost year".*