Sargassum in the Caribbean - NC

Recently villages and beaches on the Atlantic coast of Tobago, most notably Speyside, have been inundated by rafts of Sargassum seaweed washing ashore. While this phenomenon has always occurred, since 2011 the sheer volume arriving has exceeded historical levels and 2015 appears to have yielded the highest levels yet. But what is it and where does it come from? Why is it coming ashore, is it important, and what will happen in the future?

The Sargasso Sea in the north Atlantic is a 3,000,000km² raft of Sargassum centrally located by oceanic currents that hold it in place. Named an ocean Hope Spot by Mission Blue, it is an ecosystem that supports hundreds of species of fish and invertebrates, a nursery for sea turtles, mahi mahi and other species, a food source for seabirds and a high productivity region on open ocean migration paths of whales, playing an integral role in shaping the marine ecology of the Atlantic. Sargassum is holopelagic, meaning its entire life cycle is spent adrift on the ocean held afloat by small, round gas-filled bladders until seasonal northerly winds break rafts out from the Sargasso Sea and send them south into the Caribbean where ocean currents transport a portion ashore and the rest back out to the ocean, a system known as the Sargassum Loop. Deposited ashore the seaweed becomes a foraging ground for birds, and while waves and tides remove most of what washes up, a portion of the Sargassum towards the back of the beach becomes buried over time, stabilising sand dunes and acting as a natural fertiliser for dune-based vegetation.

However, now it is believed that a much greater source of Sargassum exists. The North Equatorial Recirculation Region holds seaweed rafts in warm waters, which mix with nutrient-rich river output from the Orinoco and the Amazon containing high levels of fertilisers, pesticides, industrial waste and discharges, a process termed eutrophication. These factors combine for Sargassum to bloom in huge amounts that are released when the seasonal North Equatorial Counter Current breaks down, a source that may be responsible for the greater amounts washing ashore in the Caribbean in recent years. The impacts of such quantities of seaweed are significant, not least the potential formation of dead zones in the ocean where oxygen levels become too low to support life. The seaweed is a significant obstruction to both adult turtles going ashore to lay eggs and juvenile turtle hatchlings reaching the ocean, while the risk of entanglement for boat propellers, fishing nets and swimmers is also likely to affect human activities in near-shore areas. In a region where tourism is a major contributor to national income the news that tourists are cancelling their holidays is a concern.

Clean up efforts to restore the cleanliness of beaches have limited effect as seaweed that is taken away is often just replaced by more, while the use of heavy machinery may destabilise the whole beach system. However, there may be no alternative due to the volume requiring removal. Will inundations continue or even increase in severity? Sadly the impacts of human activity on the planet are only now beginning to be understood while the damage has already been done. As scientists work hard to better understand the Sargassum phenomenon, we should strive to minimise our environmental impact through responsible practices.
ERIC Research Programme - LF

We completed our GEF SGP UNDP funded “Marine Protected Area Co-Management Capacity Building in northeast Tobago” project with Reef Check and seabird colony monitoring survey days, with just evaluation, goal assessment and improvements for future projects remaining.

With the discovery of “Sea Fan Alley” we not only enjoyed some of the best diving in Tobago, but increased our Reef Check sites to eleven, while seabird surveys continue at Little Tobago, Sisters’ Rocks and St. Giles. Of the target species, the Magnificent Frigatebird is the largest colony averaging over 2000 individuals.

Beyond this project we will continue to work with our enthusiastic community participants to facilitate on-going capacity building in MPA co-management, reef and seabird surveys, and towards the development of long-term seabird and coral reef monitoring in the region.

Hawksbill turtle hatchlings - NC

On Sunday 16th August we were fortunate to enjoy watching hawksbill turtle hatchlings emerge from a nest on the beach in front of the ERIC centre and make their way to the waters of Man o’ War Bay. Hatching success levels appeared to be high with approximately 200 hatchlings emerging, but a number of frigatebirds soon began circling overhead to predate the turtles as they entered the water. This is just one of many challenges that will face these turtles in their pursuit of maturity, contributing to a survival rate of approximately just one in a thousand returning to this beach to nest in the future.

The IUCN Red List recognises the hawksbill turtle Eretmochelys imbricata as critically endangered due to a number of factors, including exploitation of adults and juveniles at nesting beaches, nesting habitat degradation and incidental fishery mortality. Importantly, the local area around Charlotteville includes one of the last remaining intact hawksbill rookeries in the region.

The effectiveness of integrated resource management relies closely on community awareness and education, cooperation and enforcement. With this in mind, hearing the parents of the kids watching the hatchlings remind them gently not to get in the way or handle the turtles was especially pleasing.

NEWS IN BRIEF

Congratulations to Jacob Bock on continuing his PADI Professional development, recently completing his PADI Open Water Scuba Instructor examinations.

Follow our monthly newsletters, homepage and social media sites for topical environmental articles and discussions, as well as photos and video highlights of ERIC life.