

ENVIRONMENT

Coastal deforestation

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ON THE 21st and 22nd March we celebrated World Forestry and World Water Day respectively. In light of this it is only fitting that the issue of coastal deforestation be addressed.

However, it should be understood that the term "coastal deforestation" was not made up as a convenient term to commemorate these two observances. When we think of vegetation on the coast the images of coconut trees spring to mind, great for providing shade, a place to tie a hammock and of course our source of refreshing coconut water. However, coastal vegetation is quite varied, such as that of the coast of East Africa which includes a mixture of dry and moist

forests, seasonal and permanent swamps, fire-climax savannas, and coastal thickets. Like inland deforestation, most coastal land is cleared for agriculture and infrastructure. But, removal of this vegetation is quite detrimental to the environment and the well-being of humans.

Coastal deforestation is not a new environmental issue with one of the earliest accounts from Peru. Early Spanish chronicles document the Prosopis forests along the coast and the fertile coastal valleys, which were also home to much deer and a wide variety of bird species. Much timber from these forests was extracted during the 16th century for the setting up of early colonial cities. While in the 18th century, the Europeans also imported animals such as pigs and goats which could live on the fruits of the native trees. By the 19th century much of the timber was being used to produce charcoal. Then during the



20th century deforestation increased as the Prosopis forests were used as fuel for domestic and industrial uses, as in railways and brick-making furnaces and again in charcoal manufacture. Forests continued to be cleared to accommodate an expansion in agriculture, but more so for a growing population along the coast as persons from rural areas came to the capital to seek more opportunities and a higher standard of life.

To emphasise just how these valleys have changed, let us take a look at the Pachacamac Valley, which was once full of woodlands but has now been replaced by a Lima shanty town. While the coast of Peru now has an environment that can only be described as marginal desert lands.

Another example of coastal deforestation are the forests on the Eastern coast of Africa are considered a biodiversity hotspot, housing 40,000 species of cultivated orchids, and over 1,762 endemic species, including plants, birds, mammals and amphibians. Again like in Peru, much of this natural vegetation is being cleared to make room for agriculture and for housing to accommodate a growing population.

So far we have given examples of coastal deforestation but still not addressed why it is bad for humans and the environment. Despite their varied composition, coastal forests grow in their local-

ities simply because they are best adapted to coastal conditions, such as, storm surges, cyclones, hurricanes, salt spray, as well as salt water or tidal incursion.

Closer to home, in the Caribbean our main type of coastal forest is mangrove woodlands. In terms of the fauna present in this habitat, mangroves are the foundation of many food webs. Their leaves provide food for animals such as Fiddler Crabs (*Uca* spp.) and the Mangrove Tree Crab (*Aratus pisonii*).

Those that fall to the ground are broken down to form detritus which also used as a food source, by organisms like mussels, barnacles, oysters and certain crustacean species and sedentary worms.

Mangrove swamps also provide homes to many species of animals such as sponges, tree mussels like (*Perna perna*), the Mangrove Oyster (*Crassostrea rhizophoral*), the Brown Conch (*Melongena melongena*), reptiles like the Caiman (*Caiman sclerops*), and Cooks tree boa (*Corallus rushenbergerii*), several species of ibis and herons, and insects like dragonflies and arachnids such as spiders. Some animals depend on the mangrove forests because of their sheltered and nutrient-rich nature, to complete part of their reproductive cycle such breeding and rearing their young, which is true of some species of lobster, crab,

shrimp and fish, birds such as the Cattle Egret (*Bubulcus ibis*) and Brown Pelican (*Pelecanus occidentalis*), just to name a few.

When it comes to humans these habitats are very useful to the terrestrial environment we call home.

Their root system holds the soil together thereby stabilising it as well as restricting water flow and ensuring the accumulation of sediment, hence promoting land development. Mangroves also serve to filter the water from sediment.

By purifying the water of silt, debris, bacteria and faecal matter, from the water that passes through, it protects our oceans from pollution. During the rainy season it slows down and absorbs the surface run-off thus preventing against floods.

Finally, these forests act as a buffer for the land against storms and hurricanes by reducing the strength of the tidal currents and the land erosion they cause.

Unfortunately despite these benefits our nation has not escaped the practice of coastal deforestation. Of the wetlands in Tobago, with the four major ones at Petit Trou, Kilgwyn, Bon Accord and Buccoo, there only remains 1.05 km² on the island, a mere fraction of what once existed. Like with other countries, coastal deforestation is not a new problem on the island. Most was cleared during times of colonial occupation for the development of coconut and cocoa estates as in Bon Accord, Roxborough and Lowlands which are now abandoned and stand as reminders of the destructive nature of humans.

For some forests it is too late but with we still have the opportunity to rescue ours. By helping with replanting efforts, our coastal vegetation can be maintained in the areas they are adapted to for the well-being of our biodiversity and environment for future generations to enjoy.

A Special Thank You

The Gaspard family would like to say a special thank you to the Staff of The Emergency Department of the Tobago Regional Hospital that took care of their Mom - Irma Gaspard, on Saturday morning

A special thank you also to Carlos Dillon and the staff at SULLIVAN'S COURT