

Mangroves of the Virgin Islands

Mangroves are trees that are adapted to live in areas that are often flooded by water, places called wetlands. In the Virgin Islands, there are three types of mangroves; red, black and white, that live in saltwater and brackish water wetlands. While our mangroves are not related to each other, they all have developed mechanisms for surviving in water and ridding themselves of excess salt. Mangroves have different tolerances for the amount of salt and water they can live in. The red mangrove is the most salt and water tolerant of the three species. Black mangroves are less salt tolerant and white mangroves are even less so.

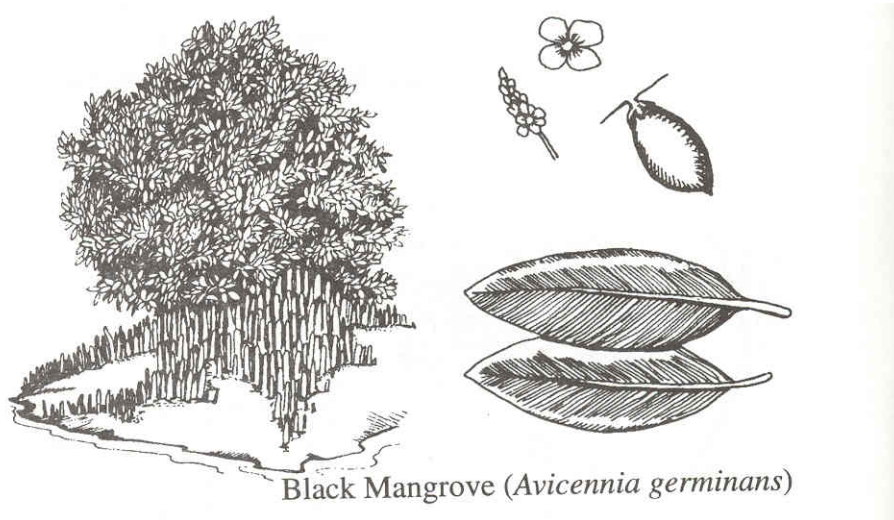
All mangrove roots trap sediment washed from our hillsides during rainfall. Mangroves become most useful in areas where the land has been cleared. By trapping sediment, mangroves keep our water clear and protect our reefs and seagrass beds. Mangroves are called "landformers" since the soil they trap causes the shoreline to grow seaward over time. As the shoreline expands from, the accumulation of trapped dirt, the mangroves continue to grow towards the water. Terrestrial plants colonize the land behind the mangroves and provide habitat for many species.

Red mangroves have adapted to living in salt water by elevating themselves above the water on proproots and preventing the uptake of salt by blocking it at the root. Red mangroves produce a propagule which hangs from the parent tree until mature and then drops into the water. If the water is shallow enough, the propagule may stick in the mud like a dart and grow there. If the water is too deep, the propagule may float many miles from the parent. The root end is heavier and hangs down. Eventually, it drifts into shallow water and takes root in the muddy or sandy bottom. Red mangroves have long prop roots that reach down into the water. These roots serve as a nursery area for most coral reef fish and many invertebrates. Decaying leaves and twigs in the water under the mangrove trees provide a rich source of organic nutrients for other nearby marine ecosystems such as seagrasses and coral reefs.



Red Mangrove (*Rhizophora mangle*)

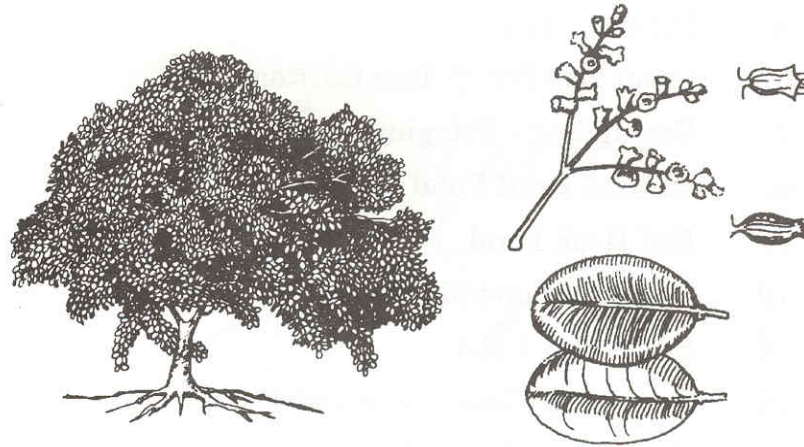
Black mangroves live landward of the red mangroves in saturated soils where the trees "breathe" using roots called pneumatophores. These specialized roots project up from the surface of the mud, forming a forest of little fingers. These projections not only act as "snorkels" for the roots to breathe, they trap sediment and chemicals from water running off the land into the sea. The leaves of the black mangroves are long and narrow and covered with salt crystals underneath that it has excreted out through the leaves. It is through these mechanisms that the black mangrove has adapted to living in salty, waterlogged soils and is able to rid itself of excess salt. The black mangrove produces seeds which float and may travel long distances before washing ashore and growing into a tree.



White mangroves are usually found more inland than the other species. They prefer drier soils or areas with more fresh water input such as coastal ponds having less connection to the sea. White mangroves sometimes produce pneumatophores like the black mangrove. They also have adapted to excrete excess salt through two small pores on the stem supporting the leaf or actually through the leaf surface, where it can be seen as crystals on the leaves. White mangroves also produce seeds that float and can disperse great distances.

Mangroves grow in protected bays which are ideal for marinas and boat facilities. Over the past 50 years, we have lost 40 to 50 percent of our mangroves to these and other activities. During impending storms, tying your boat to mangroves is allowed, but as a long term mooring method this can damage the bark and kill the tree. Chafing gear should always be used when tying to mangroves to protect the bark from abrasion. Storms may also kill mangroves

by stripping their leaves off and abrading the bark. Mangroves, already surviving under stressful conditions (waterlogged soils and osmotic problems with salt excretion), generally do not recover from major storm damage and die.



White Mangrove (*Laguncularia racemosa*)

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Mangroves are very important in many ways. Numerous wildlife such as humming birds, pigeons, herons and iguanas either nest, rest or feed in mangroves over water where they are safe from predators. They protect coastlines from wave erosion and reduce the amount of sediment reaching the ocean. They serve as valuable nursery habitats for many juvenile reef fish that inhabit our coral reefs.

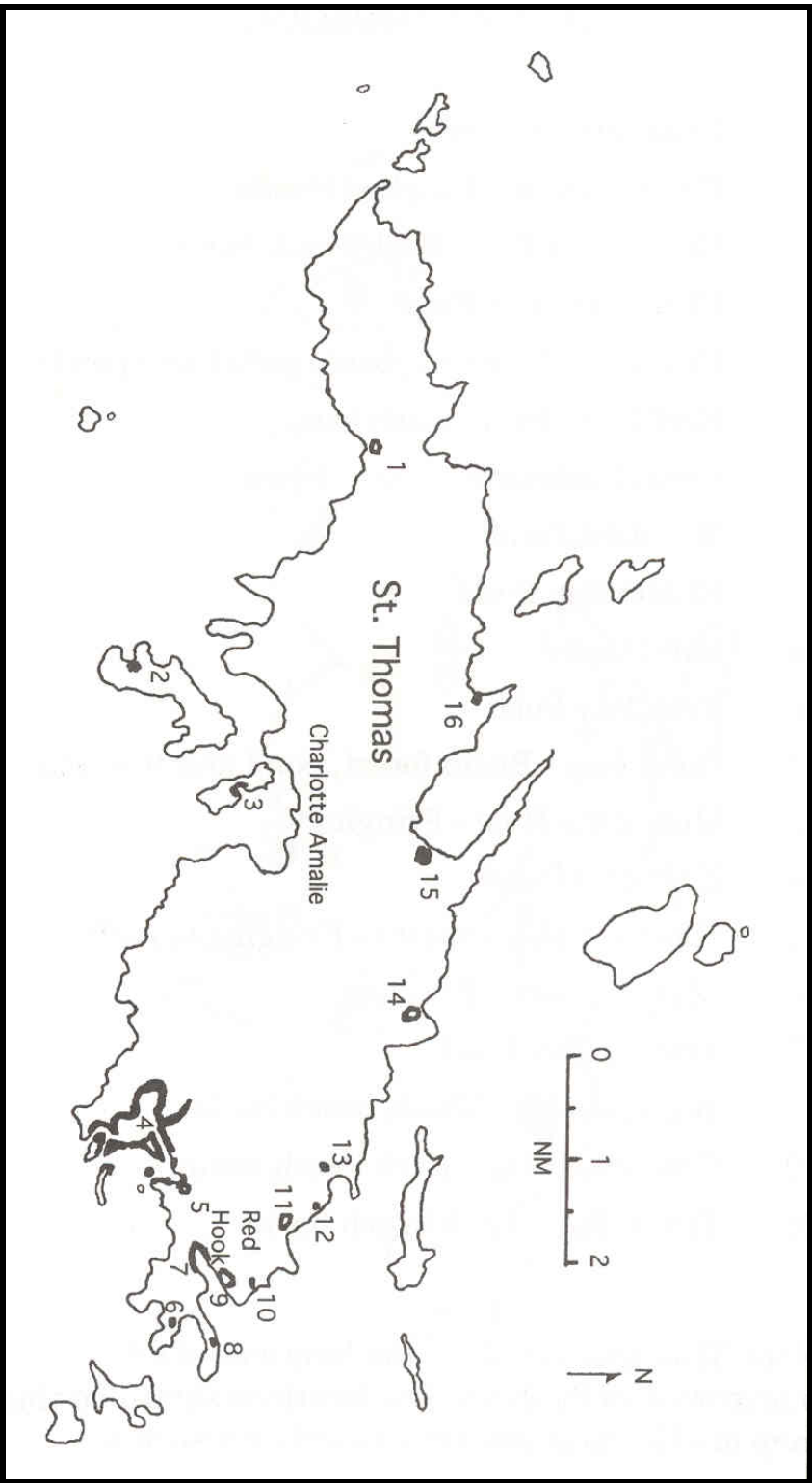
Mangroves are protected by law in the U.S. Virgin Islands. Any cutting of mangroves should be reported to Dept. of Planning & Natural Resources.

St. Thomas Mangroves

1. Perseverance Bay Pond
2. Flamingo Bay Pond
3. Careening Cove - Fringing
4. Mangrove Lagoon - Fringing, manglars* and ponds
5. Benner Bay Pond
6. Great Bay Pond - Ritz Carlton
7. Vessup Bay - Fringing
8. Cabrita Point Pond
9. Red Hook Pond
10. Sapphire Pond/Marina
11. Smith Bay Pond
12. Sugar Bay Pond (Remnants)
13. Water Bay "Iguana" Pond
14. Mandahl Pond
15. Magens Bay - Basin forest
16. Hull Bay - Basin forest

* - This term applies to small islets made up entirely of mangroves with no solid land.

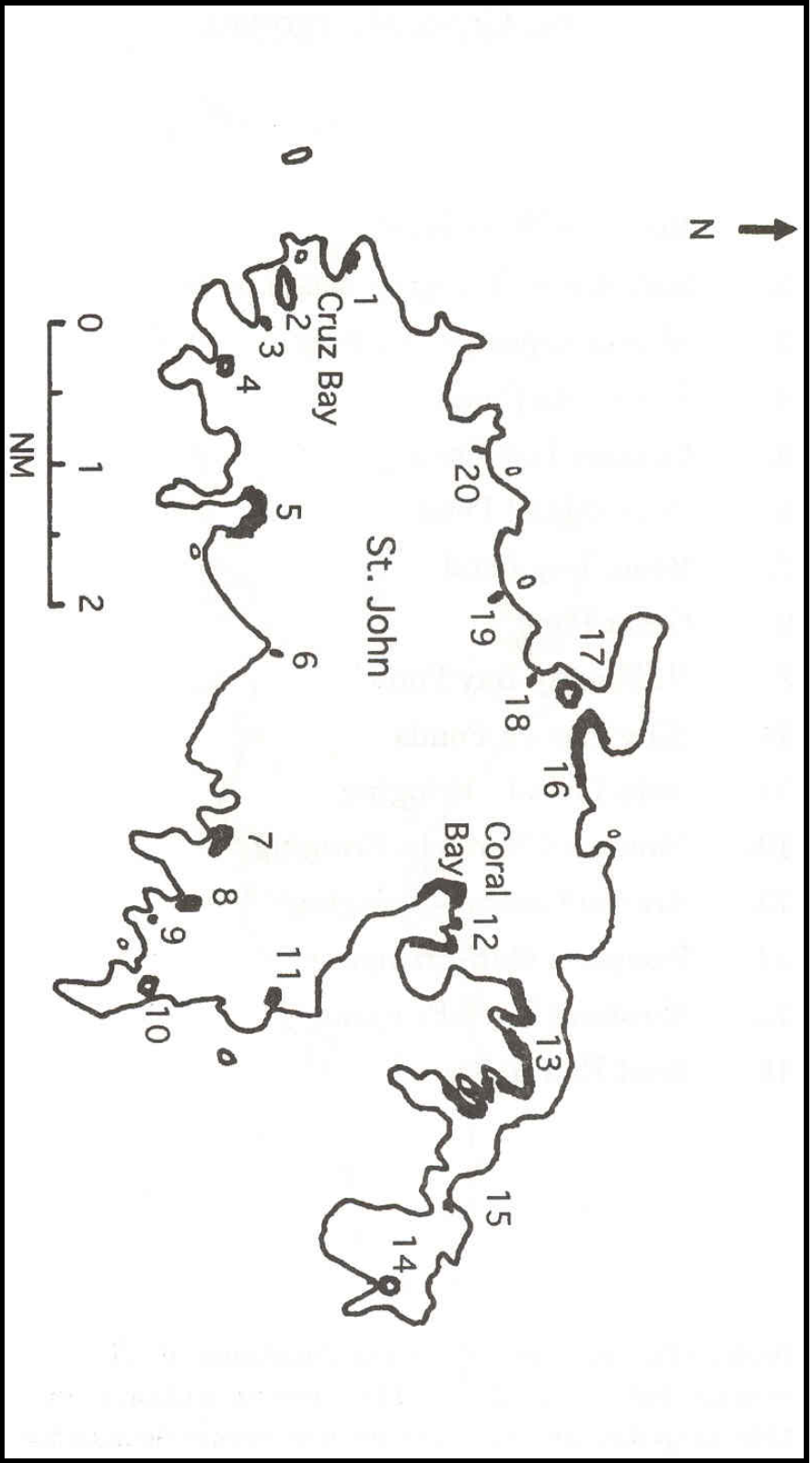
Note: This does not show the locations of all mangroves on St. Thomas. The locations shown on this map are the most obvious or easily accessible.



St. John Mangroves

1. Cruz Bay - Fringing
2. Frank Bay and Enighed Ponds
3. Great Cruz Bay - Back beach basin
4. Chocolate Hole Pond
5. Fish Bay - Fringing, basin forest and ponds
6. Reef Bay - Back beach basin
7. Great Lameshur - Basin forest
8. Mandahl Pond
9. Kiddel Bay Pond
10. Salt Pond
11. Friis Bay Pond
12. Coral Bay - Basin forest, pond and fringing
13. Hurricane Hole - Fringing
14. East End Pond
15. Haulover Bay (North) - Fringing (small)
16. Mary's Creek - Fringing
17. Francis Bay Pond
18. Big Maho Bay - Back beach basin
19. Cinnamon Bay - Back beach basin
20. Trunk Bay - Back beach basin

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St. Croix Mangroves

1. Rust-Op-Twist Pond
2. Salt River - Fringing, basin forest
3. Altona Lagoon - Fringing
4. Southgate Pond
5. Coakley Bay Pond
6. Buck Island Pond
7. Robin Bay Pond
8. Great Pond
9. Halfpenny Bay Pond
10. Billy French Ponds
11. Ruth Island - Fringing
12. Alucroix Channel - Fringing
13. Krause Lagoon - Fringing
14. Fairplain Gut - Fringing
15. Manning Bay - Fringing
16. West End Saltpond

Note: This does not show the locations of all mangroves on St. Croix. The locations shown on this map are the most obvious or easily accessible.

