



Wetlands and Water

If you live on the coast or in certain hinterland regions, then you most likely live in or near wetlands. According to the Ramsar Convention on Wetlands, “wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.” Inland wetlands include ponds, lakes, fens, rivers, floodplains, marshes, and swamps. Coastal wetlands include saltwater marshes, mangroves, lagoons, estuaries, and coral reefs. There are also man-made wetlands such as fishponds, rice paddies, and salt pans. **Wetlands can be thought of as giant sponges.** They absorb water from many different sources during wet periods, and they release it slowly into the surrounding areas during dry periods. In this way, wetlands can help to reduce flooding, ease the impact of drought and recharge groundwater supplies.

On February 02, Guyana will join the rest of the world in observing World Wetlands Day, a day to reflect on the importance of wetlands, and to highlight issues affecting these critical ecosystems. In fact, 2021 marks the 50th anniversary of the historic signing of the Ramsar Convention on Wetlands. This year’s theme ‘**Wetlands and Water**’ shines a spotlight on wetlands as a source of freshwater and encourages actions to restore them and stop their loss. We are facing a growing freshwater crisis that threatens people and our planet. In fact, there is growing global tension surrounding the use of freshwater. We use more freshwater than nature can replenish, and we are destroying the ecosystem that water and all life depend on most- wetlands. The theme this year highlights the contribution of wetlands to the quantity and quality of freshwater on our planet.

One of the most important benefits that wetlands provide is their capacity to maintain and improve water quality. When healthy, wetlands have a rich natural diversity of plants and animals. These can act as filtering systems, removing sediment, nutrients and pollutants from water. The capacity of wetlands to maintain and improve water quality is under threat because human activity and extreme weather conditions have had a significant impact on water flows, nutrient balance and biodiversity.

Changing water flows

The *water regime* is how rivers and wetlands change in response to rainfall and groundwater flow. It includes how much water is present, as well as its duration and location it is located. There are many ways that a water regime can be affected, particularly by humans. These include damming rivers, pumping water and constructing farm dams or banks that change drainage patterns.

Why do we need healthy wetlands? In addition to improving and maintaining water quality, wetlands provide other numerous benefits to humans and other living beings:

- When healthy, their soils and vegetation can capture, process and store nutrients and/or contaminants, and if the natural rhythms and flows of the wetland are undisturbed, the release of potential stressors such as sediments, nutrients, acids and/or metals from the soil can be prevented;

- Healthy wetlands can assist in removing harmful bacteria, and wetlands can also be important in the management of urban storm water and effluent by improving the removal of nutrients, suspended material and pathogens from water prior to its return to the environment;
- Healthy wetland ecosystems such as mangroves and sea grass beds provide not only a habitat for wildlife; they provide shelter for junior fishes, allowing local fishing to thrive, and provide sources of income generation of local communities;
- Further, in Guyana and other parts of the world, intact mangrove ecosystems, have been proven to provide protection against natural hazards such as tsunamis and high tides.
- Additionally, carbon and greenhouse gases are stored in sinks in wetlands instead of being released into the atmosphere.

Threats to wetlands

Wetlands are threatened by earthworks, drainage, water extraction, climate change, poor agricultural practices, feral animals such as wild pigs, invasive plants and uncontrolled fires. Impacts of these activities and encroachments include:

- Erosion, resulting in an increased sediment that blocks out light to aquatic plants and smothers aquatic animals;
- Introduction and mobilisation of contaminants such as herbicides, insecticides and fungicides;
- An oversupply of nutrients, resulting in rapid and unpredictable growth of plants and algae, blocking out light and, in the case of blue green algal blooms, producing toxins that affect wildlife, stock and humans;
- Rising water tables as a result of loss of vegetation;
- Increased soil salinity as the salts naturally found in soils move closer to the surface where than can hinder vegetation growth; and
- Release of acids and metals into the soil, which then affects water quality. This may result in fish disease, dominance of acid-tolerant species, contamination of groundwater, reduction in agricultural productivity and damage to infrastructure through corrosion.

Wetlands in Guyana

In Guyana, the North Rupununi wetland is the largest in the country covering 22,000 hectares of flooded savannah and forest. The North Rupununi wetland is dominated by the Rupununi, Rewa and Essequibo Rivers and includes over 750 lakes, ponds and water inlets. More than 400 species

of fish, the highest diversity of fishes in the world for areas of similar size, is found in the Rupununi wetlands. This area is also home to some of the world's endangered giants – the Arapaima (largest fresh water fish), the giant river otter (largest of the 13 otter species), the black caiman (world's largest of subfamily Alligatorinae), giant river turtles, the harpy eagle (largest bird of prey), the jaguar (largest cat in South America) and hundreds of other plants and animals.

The Rupununi wetlands play a very important role in the lives of more than 5000 indigenous people of Guyana. The rivers and waterways found in the wetlands act as a source of drinking water and a main transportation route for the people living in the Rupununi. The vegetation found in the wetlands are used by our indigenous tribes to make craft, traditional medicine, houses and sometimes food.

Wetland protection in Guyana

The Guyana Mangrove Restoration Project was executed during 2010-2013 under the National Agricultural Research & Extension Institute. Following completion of the Project phase and given the importance of mangroves to Guyana's coastal defenses, mangrove restoration and management was integrated into NAREI in 2014.

You too can do your part to protect wetlands in Guyana. Tune into radio and television to hear about our celebration of wetlands.

Visit our social media platforms to enter our quiz competition and tune into our panel discussion on February 02. Happy Wetlands Day!

Sources

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<https://conservation.org.gy/project/mangroves/>

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You can share your ideas and questions by sending letters to: “Our Earth, Our Environment”, C/O Communications Department, Environmental Protection Agency, Ganges Street, Sophia, GEORGETOWN, or email us at: eit.epaguyana@gmail.com, follow us on Facebook and Instagram, and subscribe to our YouTube channel.