

Barbados' Flora and Fauna Are Not Decorative — they Are Our Life Support System

Why Biodiversity Matters in Barbados

Many of us can name a beach, district, school, church, or rum shop without hesitation. But how many of us can name ten species that share this island with us? How many of us know which birds are truly ours, which trees belong to this landscape, or which habitats quietly protect us every day? In Barbados, that **knowledge matters** more than ever, because our flora and fauna are not simply there to make the island look beautiful. They are part of the system that keeps the island functioning.

A Small Island with Remarkable Biodiversity

Barbados may be small, but it is biologically significant. The Barbados Convention of Biological Diversity (CBD 2019) note that the island supports about 2,500 species. Of these, approximately **700 species** are **flowering plants** (Carrington 2023), **294 species** are **birds** (Avibase 2026), **15 mammals**, **8 reptiles**, and **2 amphibians** (Ministry of Environment, National Beautification, Green and Blue Economy—MENBGBE, 2026). In the sea, the numbers are just as striking, with around **50 hard coral species** and close to **600 fish species** recorded (MENBGBE, 2026). On a densely developed island, these numbers should not make us **complacent** — they should make us **careful**.

Unfortunately, for many years, much of Barbados' biodiversity persist within a landscape long shaped by intensive agriculture; especially sugarcane monoculture, which historically occupied large areas of Barbados' arable land and inevitably altered habitat structures across the island.



Sugarcane monoculture has historically occupied much of **Barbados' arable land**, leaving lasting ecological consequences, including reduced biodiversity, increased vulnerability to alien invasive species, and declining soil fertility. (St. Lucy, Barbados, 2024).

Importance of Endemics, Native Species and our Ecological Heritage

At present, Barbados lacks a comprehensive inventory of its endemic species, a gap that significantly hinders effective conservation planning. Compiling such an inventory is no simple task, particularly given the limited availability of reliable and up-to-date data. Preliminary findings suggest that Barbados may have just under **60 unique species**. Of these, approximately **10** appear to be **rare**, **8** are believed to be **extinct**, and more than **30** were considered at one point **endemic**. However, of these unique species, only **6** are currently recorded on the **IUCN Red List**, and **4** of those are classified as **Critically Endangered**. This suggests that more than **80%** of Barbados' potentially rare or endemic species have not yet been formally assessed. Considerable work is therefore still required to produce a robust and comprehensive inventory of the island's endemic biota. This process must distinguish true island endemics from species that also occur elsewhere, account for new discoveries beyond Barbados, and incorporate ongoing taxonomic revisions. A scientifically accurate list of Barbados' endemic species can **only** be produced after this information has been fully documented, taxonomically resolved, and clearly distinguished from non-endemic species.

Over the past two years, much of my work at The University of the West Indies, Cave Hill Campus has focused on documenting the ecological value of trees on campus, building a database of Barbados' endemic species, and producing baseline work on the [native and exotic palms of Barbados](#). Those projects may sound academic, but they are deeply practical. **A country cannot conserve what it has not clearly documented**. If we do not know what species are here, where they occur, and what roles they play, we cannot manage them wisely.



Numerous palm species at the **Codrington College**, showcasing the island's rich palm diversity. Palms play an important role in Barbados' ecological and cultural heritage. (St. John, Barbados, 2025).

Palms are one of the clearest examples of why plants deserve more public attention. Too often they are treated as ornaments — trimmed, planted, removed, and replaced as though they are merely decorative. But palms are part of a much larger ecological story. Palms are described as “green investments”, because they contribute to cleaner air, water regulation, stormwater control, long-term landscape stability, and cultural identity. That same logic applies in Barbados. Palms are not just **postcard plants**. They are part of an **infrastructure of resilience**.

The Department of Biological and Chemical Sciences has embarked in an ambitious project to develop fact sheets and species spotlights on Barbados endemic species, to date; the [Barbados Bullfinch](#), the [Barbados Leaf-toed Gecko](#), and [Broom](#) are completed. These are not trivial species. They are pieces of our natural inheritance. If an endemic species disappears from Barbados, it disappears from the world, along with its potential contributions to medical discovery, essential ecological functions, and critical support for food web stability. That should be enough to make any of us pause.

Ecological Backbones of Barbados

In Barbados, gullies (**the backbone of terrestrial ecosystems**) are often overlooked until they flood, become inhabited with Alien Invasive Species, or are treated as dumping grounds. Gullies are among the most important natural systems on the island. They regulate water flow, reduce flooding, support biodiversity, and maintain critical ecological connections between inland habitats and coastal and marine systems. Furthermore, they are refuges for moisture-loving plants and animals, and in many places, provide some of the last remaining fragments of semi-natural habitats.



Vegetation within **Jack-in-the-Box Gully**, one of Barbados' important gully ecosystems, where native flora and fauna still finds refuge in a landscape surrounded by numerous human pressures. (St. Thomas, Barbados, 2024).



Millipedes in Barbados' gullies: not all "glow" is equal—differences in cuticle structure and chemistry produce distinct visual responses under white and ultraviolet light. Information like this should be available in schools and communities to help people better understand and appreciate the island's unique gully ecosystem. (St. Thomas, Barbados, 2026).



Native trees and lianas in **Trents Gully**, illustrating the role of gullies as sheltered corridors for plant diversity and some of the island's only remaining semi-natural vegetation. (St. James, Barbados, 2025).

From Ridge to Reef: Connecting Land, Water and Sea

Gullies connect the terrestrial ecosystems to the sea. For example, watersheds draining toward Barbados' west coast reefs are significantly linked to neighbouring reef health. **What runs through our gullies does not disappear.** It reaches the coast, the reefs, and the wider marine ecosystem, transporting both useful nutrients; such as nitrogen, potassium, and phosphorus; and dangerous pollutants, including agrochemicals, and toxic heavy metals like cadmium and arsenic. While nutrients can help sustain ecological productivity, an overload of these substances, especially when

mixed with poisonous contaminants, can damage water quality, weaken coral reef systems, and disrupt the balance of marine life.



Nearby stream discharging contents toward **Culpepper Island**, illustrating the land–sea connection through which freshwater, sediments, and nutrients move from the landscape into coastal and marine habitats. (St. Philip, Barbados, 2025).

In a coral island such as Barbados, where surface freshwater is scarce, even small natural streams and springs reveal how closely biodiversity, hydrology, and coastal systems are connected. As expected, the health of the coral reefs surrounding the island is directly tied to this terrestrial hydrology. If the freshwater habitats are healthy, they considerably help maintain soil chemistry, amongst other ecological services.

With the recent increase of Sargassum influxes in the Caribbean, Barbados' reef and rocky shore ecosystems face an escalating threat that remains poorly understood. Nearshore accumulation causes acute hypoxia and severe shading, directly endangering critical benthic flora and fauna. Current research indicates that marine interception and removal—before the Sargassum makes physical contact with fringing reefs and intertidal substrates—is the most effective strategy to safeguard these diverse habitats. Once harvested, the collected Sargassum can be systematically routed to processing facilities, successfully converting an ecological crisis into a sustainable asset for the country's circular economy.



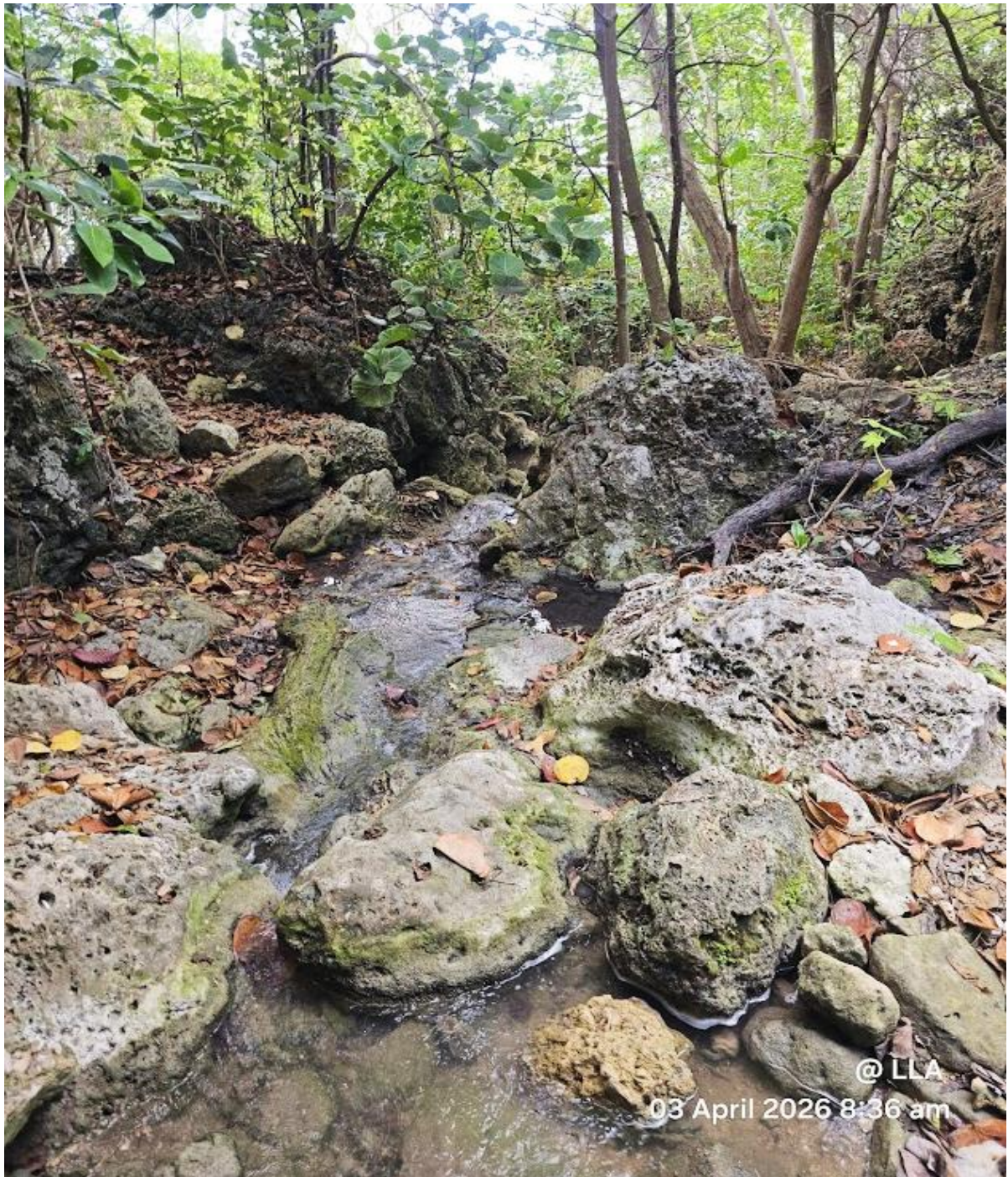
Surface view across the clear blue-turquoise waters covering coral ecosystems at **Folkestone Marine Park**, underscoring the urgent need to protect Barbados' reefs, which support fisheries, tourism, and coastal stability. (St. James, Barbados, 2025).



Tonnes of Sargassum washed up at Cove Beach threatening aquatic flora and fauna, while deterring beach goers and affecting surrounding communities with high sulphurous fumes. (St. Lucy, Barbados, 2026).

Threats to the Island's Life Support System

When land-based human activities contaminate the shallow groundwater, that pollution eventually discharges into surrounding reefs via rivers, gullies and submarine groundwater discharge. This degrades the coral polyps, which in turn weakens the island's natural storm barrier, exposing the already fragile freshwater habitats to salt-laden storm surges. At present, Barbados relies on a single municipal landfill—the Mangrove Pond Landfill in St. Thomas. This concentration of waste disposal places considerable pressure on the island's groundwater systems, where leachate from buried waste can seep into the underlying limestone aquifers if not effectively contained. Ultimately, for a small island, we need to **reduce** the volume of waste going into the landfill.



Natural freshwater stream at **Bath Beach**, where one of Barbados' scarce surface springs descends to the coast, linking inland hydrology with the island's coastal environment. (St. John, Barbados, 2026).

That is why **conservation in Barbados must move beyond simple observation**. We cannot remain satisfied with identifying pretty plants and animals, or even naming new records of species, while neglecting the systems that sustain them. We must ask harder questions. What habitats are being fragmented?



Disturbed terrestrial habitats overlooked from **Belle Hill**, reflecting the wider reality that much of Barbados' natural vegetation has been altered or fragmented by centuries of land use, development, and ecosystem degradation. (St. Andrew, Barbados, 2026).

Which native species are being displaced by exotics? What is entering our gullies? What is reaching our reefs? What are we allowing to disappear in the name of convenience, speed, or poor planning? These are not questions for scientists alone. They are questions for households, schools, developers, ministries, farmers, fishers, and communities.

Turning Awareness into Action

The good news is that Barbados already has a policy framework to act. The National Biodiversity Strategy and Action Plan calls for greater public awareness, reduced habitat loss, invasive species control, coral reef protection, and improved protection for threatened species. It also emphasizes that biodiversity must be integrated into national development, not treated as an afterthought. This is exactly the direction we need. Conservation must **truly** become part of how we plan roads, housing, agriculture, tourism, drainage, and education. Additionally, Barbados needs more visible models of successful restoration initiatives that demonstrate how degraded landscapes can be rehabilitated and brought back into ecological use. One example of this is the [Coco Hill Forest](#), an agrotourism project that looks for sustainable ways to grow food locally, while conserving microhabitats and rebuilding biodiversity that were once present on the island.



Forest rehabilitation at **Walkers Reserve**, where regenerative restoration is transforming a formerly degraded quarry landscape into a model of biodiversity recovery and climate resilience. (St. Andrew, Barbados, 2025).

While Barbados possesses comprehensive environmental **policies**, a chronic deficit in regulatory **enforcement** remains our true ecological bottleneck. Heavy economic dependence on **tourism revenues** creates profound conservation contradictions, forcing governments into harsh decisions that sacrifice long-term sustainability. Mitigating these trade-offs requires independent accountability structures that strictly mandate compliance across all coastal and terrestrial developments. Ultimately, bridging this gap demands an unified country-wide commitment (from all walks of life).

Policy enforcement is critical, but it is not enough. **Culture matters too**. We need a Barbados where children can identify more than imported ornamentals, where **gullies are seen as living systems** instead of waste channels, where palms are valued beyond landscaping, and where endemic species are spoken about with the same pride we reserve for national icons. We need a society that understands that **flora comes before fauna**, and that if the plants fail, the wider system begins to fail with them. That is not poetry. That is ecology.

If there is one message I would leave with the public, it is this: **the natural world in Barbados is not separate from our daily lives**. It is not hidden away in a reserve, a gully, a swamp, or a reef. It shapes the air we breathe, the water we manage, the coasts we defend, the fish we harvest, and the identity we pass on. Yet those same ecosystems (such as the coastlines) are becoming more vulnerable as erosion, storm surge, and shoreline instability place increasing pressure on both natural systems and human communities.



Coastal erosion along the shore near **Bridgetown**, highlighting a growing challenge for many Barbadian communities as climate stress and shoreline instability threaten livelihoods, infrastructure, and coastal ecosystems. (St. Michael, Barbados, 2025).

To protect Barbados properly, we must learn to see flora and fauna not as **extras**, but as **essentials**. And once we truly see them, we must be prepared to **act**. This means ensuring that coastal protection efforts, vegetation planning, and beach beautification projects are grounded in scientific principles, with species selection aligned to **nature-based solutions** and long-term ecological sustainability. Native species should form the foundation of these interventions, while the use of exotics must be approached with extreme caution, as they can undermine ecosystem stability and displace local biodiversity.

To integrate Barbados' natural world into daily life, start by paying closer attention to the living systems around you and treating them as part of your community, not as scenery. **Plant** and **protect** native species in your yard or neighbourhood—especially native palms, and choose local trees and shrubs that support wildlife rather than relying only on ornamentals. **Visit** gullies, wetlands, forests, and coastal areas with purpose: **learn** what grows there, **notice** what has been disturbed, and **support** the places that still protect biodiversity, such as Turner's Hall Wood, Coco Hill Forest, Graeme Hall Nature Sanctuary, and restored landscapes like Walkers Reserve.



View from **Turner's Hall Wood**, widely regarded as Barbados' last remaining tropical forest and one of the island's most species-rich natural refuges. (St. Andrew, Barbados, 2025).

In practical terms, this means **reducing** litter and runoff, **never** dumping waste in gullies, **joining** clean-ups or BioBlitzes, **recording** species observations, and **teaching** children to recognize local plants and animals. If Barbados is to remain truly alive—ecologically, culturally, and economically—we must stop treating nature as background scenery and start **protecting** it as the living foundation of our future.



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Egret Island at Graeme Hall Nature Sanctuary, a mangrove islet that serves as an important nesting and roosting site for wetland birds within one of Barbados' most significant aquatic ecosystems. (Christ Church, Barbados, 2026).

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