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Extant emergence of Greater Caribbean manatees (*Trichechus manatus manatus*) in the Virgin Islands: Hopes for the beginning of a natural recolonization process

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The American manatee (*Trichechus manatus*), specifically the Greater Caribbean or Antillean subspecies (*T. m. manatus*), once ranged widely throughout the coastal Caribbean Basin, including the Virgin Islands, part of the Puerto Rico Archipelago. Archaeological remains found in indigenous middens support the species' historical presence in these islands (Miller, 1918; Wing et al., 1968; Davis & Oldfield, 2003). However, by the late 19th or early 20th century, manatees were considered effectively extirpated from the Virgin Islands, with only rare and isolated sightings—presumably of vagrant individuals from nearby Puerto Rico—recorded thereafter (Erdman, 1970; Mignucci-Giannoni, 1989; Lefebvre et al., 2001).

Recent confirmed sightings across the British and US Virgin Islands suggest renewed visitation by manatees, likely dispersing from the Puerto Rico population. Here, we compile historical and recent observations and consider the implications for manatee conservation in the region.

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We reviewed documented manatee sightings in the Virgin Islands from 1899 to 2025. Data were sourced from scientific literature, government and non-government organization records, social media, personal communications, and direct field observations. When available, we verified sightings via photographs or videos and classified them by date, location, number of individuals, and behavior.

We identified nine historical records (1899–2004) and 31 recent records (2018–2025) (Table 1; Fig. 1). Since 2018, sightings have increased markedly, particularly in St. Croix, US Virgin Island, followed by consistent observations throughout the US and British Virgin Islands since 2022.

Historical sightings

Manatee records in the Virgin Islands before 2018 were scarce and anecdotal. The earliest, from 1899, involved a young manatee, estimated at nearly 1.8 m in length and 136 kg in weight, captured in a turtle net off Tortola, later exhibited at Creque's Wharf (Sims, n.d.). Descriptions confirmed the animal as a manatee, which died shortly after. In November 1988, a live manatee was observed on two consecutive days near the US Coast Guard dock in Charlotte Amalie, St. Thomas, followed days later by a dead specimen found east of the harbor (Akin, 1988; M. Christian, NOAA Law Enforcement, pers. comm., April 1989). In 1994, three sightings occurred in the British Virgin Islands at Tortola, Norman Island, and Peter Island (Overing, 1995). On 1 February 2003, a 305-cm, 296-kg, highly emaciated male stranded in Virgin Gorda (Fig. 2) was transported to Puerto Rico, where it later died of pneumonia (Caribbean Manatee Conservation Center, unpubl. data). Genetic analysis identified this individual as carrying the B01 haplotype, found only along the southern coasts of Puerto Rico and the Dominican Republic. A year later, a manatee was observed at Cow Wreck, Anegada.

Table 1. Historical and recent records of Greater Caribbean manatees (*Trichechus manatus manatus*) in the Virgin Islands. BVI = British Virgin Islands, USVI = US Virgin Islands

Date	Location	No. animals	Remarks
Historical records			
1899	Kingston, Tortola, BVI	1	Live animal but succumbed after public exhibition
14 Nov 1988	Charlotte Amalie Harbor, St. Thomas, USVI	1	Live sighting
15 Nov 1988	Charlotte Amalie Harbor, St. Thomas, USVI	1	Live sighting
28 Nov 1988	E of Main Harbor, St. Thomas, USVI	1	Dead
6 Mar 1994	Between Tortola and Little Thatch Island, BVI	1	Live sighting
19 Jun 1994	Soldier Bay in Norman Islands, BVI	1	Live sighting
9 Jul 1994	Great Harbour in Peter Island, BVI	1	Live sighting
1 Feb 2003	Biras Creek, Virgin Gorda, BVI	1	Male. Rescue attempt; manatee died later, Fig. 2
Mar 2004	Cow Wreck Beach, Anegada, BVI	1	Live sighting
Recent records			
May 2018	Salt River Bay, St. Croix, USVI	2	Cow-calf pair live sighting
4 May 2018	Frederiksted Pier, St. Croix, USVI	1	Live sighting of an emaciated ~2.6 m manatee, Fig. 3A, B
5 May 2018	South Pier, Lime Tree Bay, St. Croix, USVI	1	Live sighting
8 May 2018	Buck Island, St. Croix, USVI	1	Live sighting, Fig. 3C
24 May 2018	Altoona Bay, and off Protestant Cay, Christiansted Harbor, St. Croix, USVI	2	Cow-calf pair live sighting
16 Sep 2022	Trunk Bay, Tortola, BVI	1	Live sighting
19 Sep 2022	Trunk Bay, Tortola, BVI	1	Live sighting
22 Sep 2022	Rogues Bay, Tortola, BVI	1	Live sighting
24 Sep 2022	Josiah's Point, Coutton Bay, Tortola, BVI	1	Live sighting
25 Sep 2022	Trunk Bay, Tortola, BVI	1	Live sighting
26 Sep 2022	Conch Pile, Anegada, BVI	1	Video of live sighting
29 Sep 2022	Rogues Bay, Tortola, BVI	1	Live sighting
30 Sep 2022	Rogues Bay, Tortola, BVI	1	Live sighting
Oct 2022	Devers Bay, St. John, USVI	1	Live sighting
2 Oct 2022	Rogues Point, Tortola, BVI	1	Live sighting
4 Oct 2022	Trunk Bay, Tortola, BVI	1	Live sighting
9 Oct 2022	Trunk Bay, Tortola, BVI	1	Live sighting
11 Oct 2022	Cooper Rock, E of Deep Bay, Anegada, BVI	1	Live sighting
12 Oct 2022	Loblolly Bay, Anegada, BVI	1	Live sighting
19 Oct 2022	Loblolly Bay, Anegada, BVI	1	Live sighting
12 Nov 2022	Francis Bay, St. John, USVI	1	Live sighting
17 Nov 2022	Off Bovocoap Point, Hart Bay, St. John, USVI	1	Video of live sighting
20 Nov 2022	Water Island, St. Thomas, USVI	1	Video of live sighting, Fig. 4
22 Nov 2022	Congo Cay, moving to Carvel Rock, St. John, USVI	1	Live sighting
25 Jun 2024	Long Man's Point, Guana Island, Tortola, BVI	1	Video of live sighting
22 Oct 2024	1.6 km W of Conch Pile, Anegada, BVI	1	Live sighting
30 Oct 2024	Buck Island, Tortola, BVI	1	Live sighting
Nov 2024	Monkey Point, Guana Island, Tortola, BVI	1	Video of live sighting
9 March 2025	Nanny Cay, Tortola, BVI	1	Live sighting
5 Apr 2025	Lovango Cay, St. John, USVI	1	Video of live sighting
11 Apr 2025	Water Bay, St. Thomas, USVI	1	Video of live sighting, Fig. 5

Recent sightings

Since 2018, sightings have increased in number and spatial extent. In May 2018, sightings were confirmed from St. Croix at Frederiksted Pier, Lime Tree Bay, Buck Island, Altoona Bay, Christiansted Harbor, and Salt River Bay, including in two occasions a cow-calf pair observed in Christiansted Harbor and Salt River Bay (Fig. 3). Beginning in September 2022, a solitary individual was repeatedly observed across Tortola and Anegada, including Trunk Bay, Rogue Bay, Josiah's Point, Cooper Rock, and Loblolly Bay, all in the British Virgin Islands. Manatees also visited Conch Island, and reportedly sought freshwater in Tortola. Confirmed sightings later extended to St. John, Water Island, Congo Cay, and Lovango Cay (Fig. 4) in the US Virgin Islands. From 2024 through 2025, continued photo and video-documented sightings occurred in Tortola, Anegada, St. John, and St. Thomas (Fig. 5), supporting recurring visitation or possible residency. The manatee observed in April 2025 in St. Thomas bore two healed scars on the tail that may be used for future individual identification (Fig. 5).

Puerto Rico and its two eastern islands (Vieques and Culebra, also known as the Spanish Virgin Islands), and the northern Virgin Islands form a geologically connected archipelago characterized by similar coastal ecosystems, including coral reefs, mangroves, and extensive seagrass beds. In contrast, St. Croix is an isolated emergent island across the deep Virgin Islands Basin. Despite this geographic separation, St. Croix also supports habitats suitable for manatees, including sheltered bays and seagrass meadows dominated by turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), and shoal grass (*Halodule wrightii*), all key components of manatee diets (Mignucci & Beck, 1998; Lefebvre et al., 1999). While the Virgin Islands currently lack

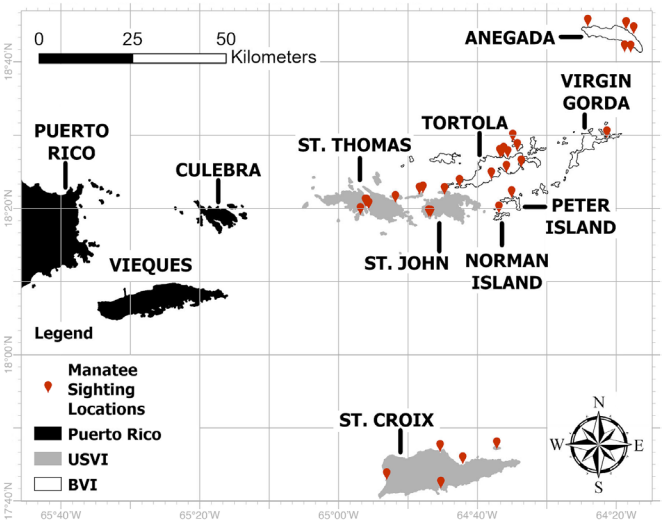

Figure 1. Locations (red baloons) of Greater Caribbean manatee records in the Virgin Islands

known rivers, at least St. Croix had the presence of seven large freshwater streams, but these were ephemeral by the 1800s due to deforestation and agriculture (Jordan, 1975).

The historical absence of manatees in the Virgin Islands may relate to limited freshwater sources, which are more common in Puerto Rico. Manatees, particularly those living most of the time in saline environments, require regular freshwater intake for manatee physiology, osmoregulation, and calving (Ortíz et al., 1998, 1999). Prolonged absence of freshwater may limit habitat suitability for manatees, especially in the Greater Antilles where they are mostly found in marine coastal areas (Mignucci-Giannoni, 1989; Drew et al., 2012). However, suitable foraging grounds and small freshwater springs or waterholes in coastal areas suggest that these islands could be marginal or transient habitats for manatees under the right conditions. The rarity of records between 1899 and 2018 likely reflects a true historical absence. No evidence suggests the presence of resident or recurring individuals during that period, except for those occasional sightings or strandings, which are better described as cases of vagrant animals from the nearby Puerto Rico population.

Puerto Rico, located just 72 km west of the Virgin Islands, harbors the nearest manatee population, minimally estimated at 312–535 individuals (Collazo et al., 2019). This population concentrates in four key coastal areas: Ceiba, Jobos Bay, Guayanilla/Guánica, and the Guanajibo River mouth (Powell et al., 1981; Rathbun et al., 1985; Mignucci-Giannoni, 1989; Freeman & Quintero, 1990; Mignucci-Giannoni et al., 2018). While manatees are regularly observed around Vieques, sightings in Culebra and Mona—both lacking freshwater—were rare until recently (Drew et al., 2012; Collazo et al., 2019). Aerial survey data indicate a stable or increasing population trend in Puerto Rico (Mignucci-Giannoni et al., 2018).

Genetically, the manatees in Puerto Rico exhibit low haplotype diversity and a distinct north-south population structure, with some genetic similarities to individuals in Hispaniola, Cuba, and Florida (Vianna et al., 2006; Hunter et al., 2012; Álvarez-Alemán et al., 2022). However, no natural migration—immigration or emigration—has been documented between the Greater Antillean islands (*i.e.*, Cuba, Cayman Islands, Jamaica, Hispaniola, and Puerto Rico; Vianna et al., 2006; Hunter et al., 2012), and this isolation could compromise the population's genetic resilience (Álvarez-Alemán, 2019; Morales-Vela et al., 2024).

The recent movement of manatees into the Virgin Islands may signal the beginnings of genetic recolonization or exploratory dispersal, analogous to the recolonization of the Bahamas and Gulf of Mexico (Odell et al., 1978; Reid, 2000; Bonde & Lefebvre, 2001; Fertl et al., 2005; Melillo-Sweeting et al., 2011; Deutsch et al., 2022), including individuals recently sighted in Cuba (Álvarez-Alémán et al., 2010) and Mexico (Castelblanco-Martínez et al., 2021; Morales Vela et al., 2021), following the dramatic increase of the Florida manatee (*T. m. latirostris*) population. For it to be considered a true recolonization, both males and females need to be documented with a defined site fidelity, constant use of seagrass and freshwater resources, and evidence of reproduction or calving. A similar situation appears to be occurring in the island of Culebra since the fall of 2022 and as recent as May 2025, with multiple manatee sightings, males and females, and calving in Playa Soldado, Cayo Norte, Ensenada Honda, Las Pelas, Dakiti, and Playa Sardinas (Nicolas Gómez-Andujar, Asociación Pesquera

Figure 2. Highly emaciated manatee rescued on 1 February 2003 at Biras Creek, Virgin Gorda in the British Virgin Islands (photo by Antonio Mignucci)

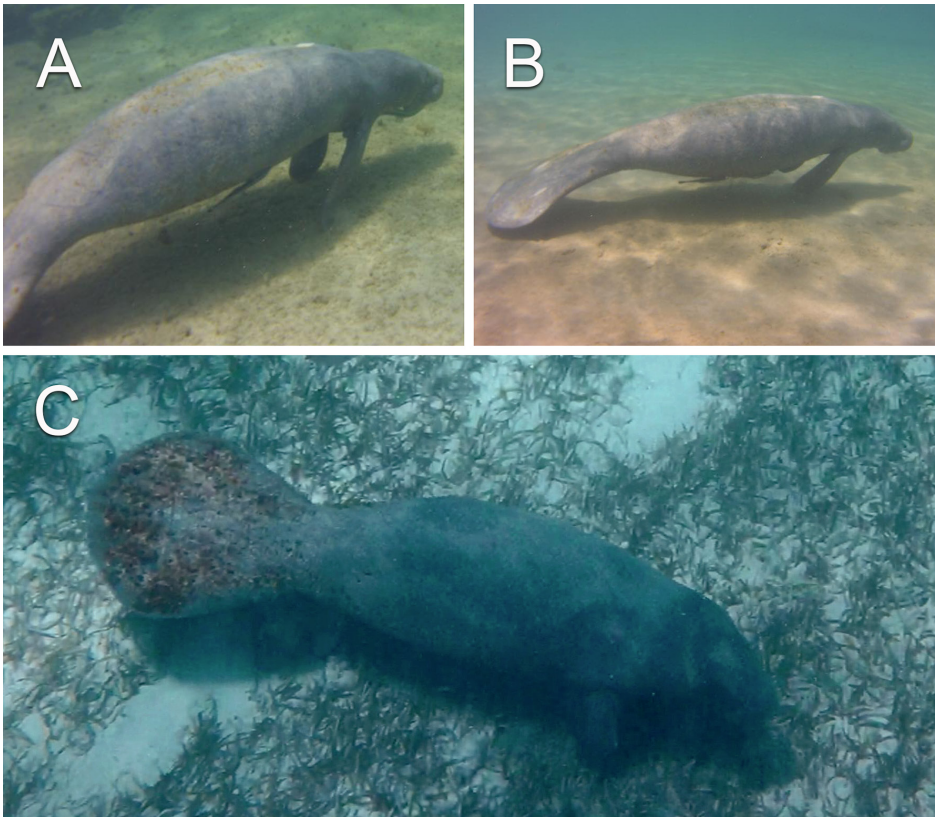

Figure 3. Greater Caribbean manatees sighted in St. Croix, US Virgin Islands in May 2018. (A) and (B) Highly emaciated manatee on 4 May at Frederiksted Pier (photos by Claire Beauregard); (C) Smaller manatee on 8 May at Buck Island Reef National Monument (photo by Clayton Pollock)

Figure 4. Greater Caribbean manatee sighting on 20 November 2022 at Water Island, St. Thomas, US Virgin Islands (from a video taken by Sean Vaughan-Housman)

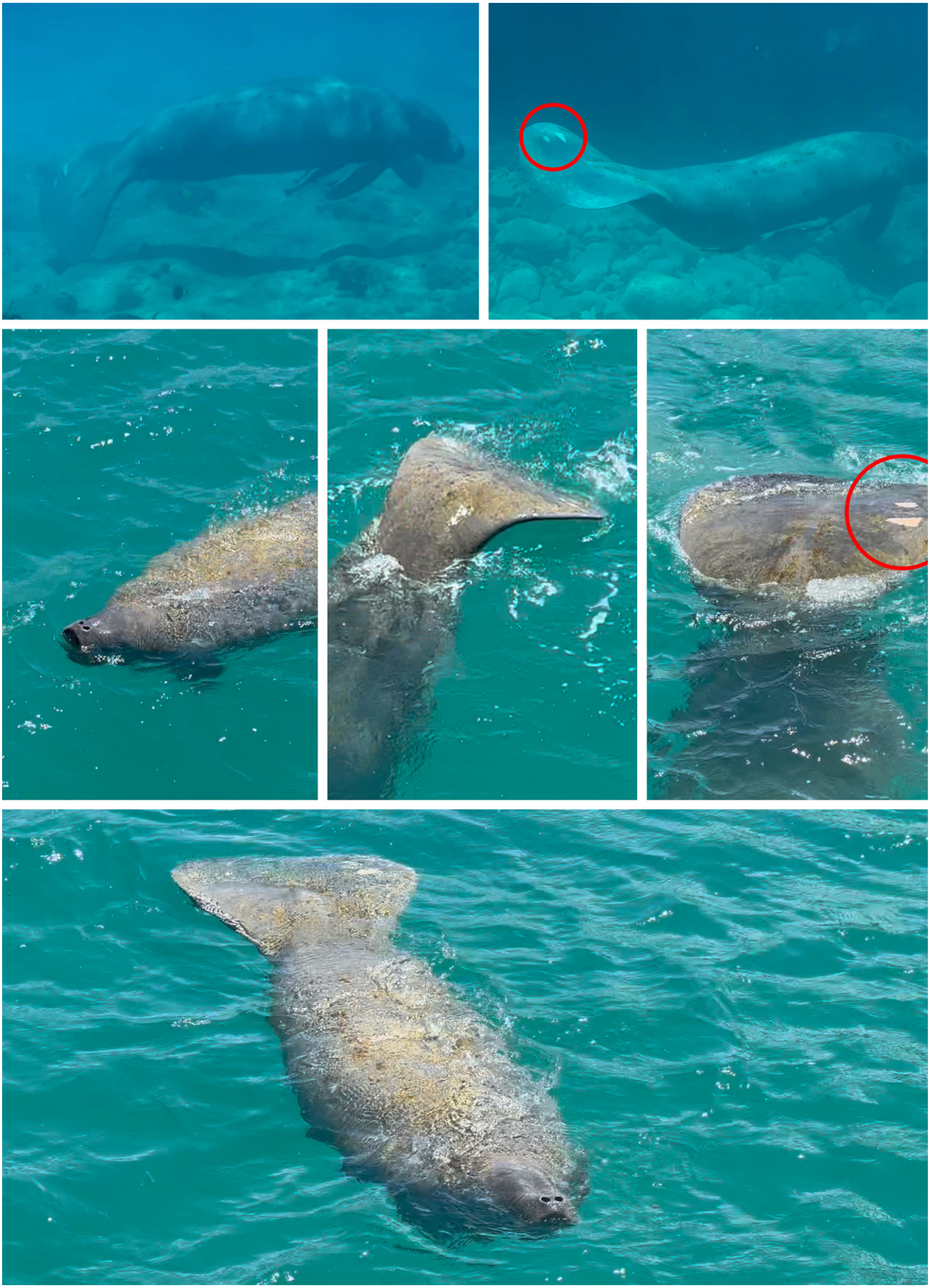

Figure 5. Greater Caribbean manatee sighting at Water Bay, St. Thomas, US Virgin Islands on 11 April 2025. Red circle points to two healed scars that may be used for individual identification. (Photos by Coral World Ocean and Reef Initiative)

de Culebra, pers. comm. 2025). Culebra is a small island east of Puerto Rico and west of the US Virgin Islands, ecologically similar to nearby areas and potentially serving as a stepping-stone for dispersal. A newborn male manatee was rescued on 9 June 2023 near Cayo Pirata in Ensenada Honda, Culebra (Caribbean Manatee Conservation Center, unpubl. data). Subsequently, the carcasses of a female found in San Idelfonso on 14 September 2023, and a male calf on 17 December 2023 on Ensenada del Coronel were recorded in the same bay system (Puerto Rico Department of Natural and Environmental Resources, unpubl. data). Similarly, the recent sightings in St. Croix include two instances of a mother and calf pair. While we cannot estimate the number of individual animals represented in the 31 recent records, the resurgence and increasing number of sightings across the Virgin Islands suggest a potential eastward expansion of manatees from Puerto Rico due to increased population numbers (Mignucci-Giannoni et al., 2018; Collazo et al., 2019), highlighting the need to monitor dispersal patterns and assess habitat suitability within and between these islands.

Between 2018 and 2025, the frequency and geographic range of sightings in the Virgin Islands were unprecedented. The rise in reported sightings may be partly explained by increased public awareness and the widespread use of smartphones and social media, which have facilitated the documentation and dissemination of manatee encounters. Although manatees are legally protected in both the British and US Virgin Islands (Virgin Islands Fisheries Regulations, 2003 Part IV Conservation Measures Sec. 29; US Marine Mammal Protection Act of 1972; US Endangered Species Act of 1973), no species-specific conservation or recovery plans currently exist. These recent appearances suggest habitat suitability and the potential for implementing monitoring and protective measures. This situation underscores the urgent need for coordinated regional conservation efforts. Recommended next steps include (1) strengthening a sighting and stranding response network; (2) raising community awareness to reduce possible anthropogenic impacts, such as watercraft collisions, harassment, habitat and seagrass beds degradation; (3) assessing and protecting seagrass habitats and potential freshwater sources; and (4) strengthening cross-jurisdictional collaboration among Puerto Rico, the US Virgin Islands, and the British Virgin Islands.

Notably, the Greater Caribbean manatee remains classified as Endangered by the International Union for the Conservation of Nature (IUCN), facing chronic threats, including habitat loss, boat strikes, and insufficient conservation action (Morales-Vela et al., 2024). Allen et al. (2024) further identify emerging concerns, such as seagrass depletion and disease outbreaks that elevate mortality risk. Compounding this is the spread of the invasive broad-leaf seagrass (*Halophila stipulacea*), reported in both the Virgin Islands since 2014 and Puerto Rico since 2017 (Willette et al., 2014; Ruíz et al., 2017; Winters et al., 2020), which may displace and even introduce pathogens or parasites (Kaldy et al., 2023) to native forage species—such as turtle, manatee, and shoal grasses—critical to manatee survival.

The recent designation of Puerto Rico's coastal waters as the Borikén Important Marine Mammal Area (IMMA) by the IUCN (IUCN-MMPATF, 2025) recognizes the coastal and shelf-edge waters as ecologically crucial for marine mammals, particularly for manatees. Expanding this designation to include the Virgin Islands could support a regionally integrated conservation strategy to protect similar suitable habitats and promote the species' recovery.

The reappearance of manatees in the Virgin Islands presents a rare and promising opportunity to support this endangered marine mammal's resilience and potential range expansion. Realizing this potential will require proactive conservation planning (perhaps facilitated through the regional platform of the newly created Wider Caribbean Manatee Alliance — an international network established in 2024 to coordinate research, engagement, and conservation across 17 Caribbean countries; Álvarez-Alemán 2025), effective habitat management, and collaborative scientific efforts across political boundaries. With coordinated effort, these recent developments could mark the beginning of a successful natural recolonization process and a new chapter in Caribbean manatee conservation.

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