

# WITNESS: Order *Sirenia*

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Eileen has written and co-edited numerous papers and books, with her work focusing on biodiversity loss and destruction of wild places, along with pathways to halt these trends.

### About the WITNESS section

**So much environmental thought stays inside the abstract space of philosophy, policy recommendations or debates. In this corner of *The Ecological Citizen*, we stay close to the ground: To bear witness to the losses of lifeforms, lifeways, and places that humanity's no-limitations growth is driving. To remember the Earth realities we love and are fighting to preserve.**

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Steller's sea cow was named after naturalist Georg Steller who encountered the animals during his 1741–42 expedition aboard Vitus Bering's vessel. In his journal, Steller wrote that the sea cows inhabited the shallow waters around Bering Island, especially where streams flowed into the sea and where seaweed, their main food, was abundant. Steller called the animals "manatis" but today Steller's sea cow is considered a species of dugong, closely related to the manatees (Golder, 1925; Sleeper and Foott, 2000).

While on Bering Island, Bering's crew turned to harpooning the sea cows for food. "They were not afraid of man in the least," Steller wrote (Golder, 1925: 232). (He observed the same thing about other animals of the region including the Blue Fox, better known today as the Arctic Fox.) The absence of fear worked against the sea cows who the sailors started to slay regularly.

The killing offered a glimpse into the animals' inner life. They had, Steller observed, "an uncommon love for one another which even extended so far that, when one of them was hooked, all the others were intent on saving him" (Golder, 1925: 232–3). The sea cows circled protectively around their harpooned friend, tried to topple the captors' boat and even endeavoured to pull the harpoon out of the animal's body. Steller noted "the very curious evidence of their nature and their conjugal affection," for when an animal was harpooned, her mate would struggle to free her "with all his strength ... and follow her quite to the shore, even though we struck him many blows" (Steller quoted in Hudon, 2017: 95). About the animals' mating habits, Steller chronicled that "their mating takes place in June, after protracted preludes. The female flees slowly before the male with continual turns about, but the

male pursues her without cessation. When, however, the female is finally weary of this mock coyness she turns on her back and the male completes the mating in the human manner” (Golder, 1925: 233).

Steller’s sea cows were gentle, loving and fearless marine herbivores. They were large animals reaching up to 30 feet in length. Like their still-existing relatives, Steller’s sea cows reproduced extremely slowly. Within 27 years of their discovery (at least by Western science), the species was exterminated by hunters (Sleeper and Foott, 2000: 40). E.O. Wilson calls this type of anthropogenic extinction “rifle extinction” (Wilson, 1999: 258). By this metaphoric term, Wilson does not (necessarily) mean extermination by firearms: he means a targeted species erased from existence by deliberate lethal intent.

### Remaining Sirenians

Steller’s sea cow is classified under the Order Sirenia, of which one dugong species and three manatee species are still with us today. Sirenians emerged some 50 million years ago. Among their closest relatives are the Elephants. Like their terrestrial cousins, all extant Sirenian species are endangered.

Unlike Steller’s sea cows, who were endemic to a specific area and thus fatally vulnerable to ruthless humans, Earth’s remaining Sirenians are not threatened by “rifle extinction.” In step with the present-day pattern of most threatened species, they are plagued by a smorgasbord of Anthropocenic afflictions: habitat destruction, poaching, pollution, entanglement in fishing gear, boat strikes and dam construction. Though all Sirenian species are protected (at least on paper), they are still widely hunted. Their persecution today is part of a bigger insidious trend of rising aquatic bushmeat, which is also menacing sea turtles, dolphins, crocodiles and other marine animals (Cosentino and Fisher, 2016; Marsh *et al.*, 2017; Hodgins, 2020).

Sirenians are fully or mostly herbivores, and so dwell in depths where sunlight can penetrate. They inhabit the relatively shallow waters of estuaries, lagoons, bays, and rivers. This makes them vulnerable to human depredation and to habitat destruction by coastal development as well as by agricultural (and other) pollution that decimates and contaminates their food. They have virtually no enemies other than humans. All four species are experiencing population declines and range contractions (<https://is.gd/RxtJxZ>). For the most part, despite their endangered status, they are surprisingly understudied and exact data about their populations and circumstances are hard to come by.

Dugongs once enjoyed a wide historic range throughout the coasts of many lands of the Indian and West Pacific oceans. Their numbers are falling and they have become regionally extinct in many of their former homes, including the coasts of Thailand and Cambodia (Medrano, 2019). The largest and best-monitored population of dugongs inhabits the coastline of Northern Australia, especially Shark Bay (Marsh *et al.*, 2019).

African manatees live in the rivers, estuaries and coastal waters of a number of West African countries. Information about them is scant and present numbers are estimated to hover around 10,000. According to the African

Aquatic Conservation Fund, the African manatee “is the most endangered and least studied manatee species in the world” (<https://is.gd/v7bnjD>). Continued poaching throughout their range is the main threat. “The manatee market in Nigeria is so profitable,” a recent *Guardian* article reports, “that poachers traffic the animals from neighbouring countries. A growing demand for live manatees in Asia has made matters worse” (Hammerschlag, 2020). According to environmental organization Ocean Care, an official agreement to protect African manatees “has been given no energy or commitment” (<https://is.gd/CxzV1K>). The protected Orango National Park, off the coast of Guinea, is considered one of their last strongholds.

Amazonian manatees were historically abundant throughout the Amazon River Basin. They have become rare. Their status and life conditions are shrouded in uncertainty, and estimates of their remaining numbers range from 8,000 to 30,000 (<https://is.gd/yOvYiK>). Amazonian manatees are threatened throughout their range by poaching, pollution, drowning in nets, degradation of their food sources by deforestation, and dam building (Cosentino and Fisher, 2016; Salisbury, 2017).

Lastly, the West Indies manatees are an Atlantic species that was widespread along coastal seas of Caribbean islands, southern USA states, the Gulf of Mexico and as far south as Brazil’s coastline. Until European colonists arrived to the New World, Caribbean waters abounded in manatees (Roberts, 2007: 67). They have been exterminated from most of their historic range. West Indies manatees are represented by the two subspecies: the Antillean manatees and the Florida manatees (Figure 1). According to a recent *National Geographic* report, around 2,500 Antillean manatees are thought to remain in existence; their populations are fragmented and their numbers are declining. Belize’s lagoons are home to the largest remaining numbers (<https://is.gd/iBEvQf>).



Figure 1. A Florida manatee.

## Florida manatees, year 2021

With few pockets of exceptions, all four Sirenian species are losing ground worldwide. Yet despite their endangered status and their alarming accessibility to human exploitation and impacts, accurate reports about their conservation status are elusive. Exempt from this generalization, Florida manatees enjoy widespread celebrity. Their numbers are monitored. They are a tourist attraction. They are among Florida's most 'iconic species.' There are ads online for swimming with them. Yet right now, Florida manatees are dying.

As of 5 November 2021, 997 manatees, of a population estimated around 6,300, have died (<https://is.gd/To3UNa>). Florida manatees have been dying in record numbers throughout 2021, mostly from starvation as well as from a recent spate of serial record-breaking watercraft mortality (Center for Biological Diversity, 2021). (Boat strikes have been an ongoing hazard and peril for Florida's manatees.) Vast areas of seagrass – the manatees' key food source – have been destroyed, mainly by agricultural pollution, but also from household pesticide runoff, human sewage and a changing climate. For example, in the Indian River Lagoon, one of the manatees' main hangouts, almost 60 per cent of the seagrass along with its biodiversity has been lost since 2009 (Pittman, 2021).

“There are a few things that particularly disturb me about this year's deaths,” says environmental writer John R. Platt, editor of *The Revelator*, published by the Center for Biological Diversity. “Boat strikes are up, which means Florida isn't doing a great job slowing down boaters in key habitats. Perinatal deaths are way up (106 at last count, compared to 83 last year), which doesn't bode well for the next generation. And 554 of these dead manatees to date haven't been necropsied, a step that would provide key scientific data to help ensure this doesn't keep happening.” Platt adds: “It also makes me worry: If we're losing this many manatees – and dead manatees are relatively easy to find and count – what other invisible losses are we missing?” (personal communication).

Ironically, the manatees face this spike of death and suffering in the wake of the Trump administration having downlisted their status from “endangered” to “threatened.” As a result, manatees are experiencing the current crisis with manatee recovery programs reduced (Rose, 2021). Two Florida representatives are scrambling to pass legislation to reclassify Florida manatees as endangered. Meanwhile, researchers have also been dismayed to find that manatee “critical habitat designation” has not been updated since 1976 (Center for Biological Diversity, 2021). Such habitat designation would involve the apparently not-so-iconic seagrass ecologies – ecologies that are indispensable for the manatees and have been decimated by ecocidal agriculture, other pollutants and a rapidly warming climate.

The Florida manatees' unfolding critical situation has been declared an “Unusual Mortality Event.” This declaration is intended to marshal attention and resources from officialdom to support the good people on the ground, who right now are fighting for manatees' lives and for the preservation of the subspecies.

## Sirenians in the balance

Yet the only thing that is “unusual” about the current Florida manatee mortality event is that it is happening to the world’s most celebrated manatees. In all other ways, it is typical of what Earth’s dugongs and manatees have been increasingly experiencing since the extermination of Steller’s sea cow in the late 18th century. Sirenian populations have been blinking out and their ranges contracting, mostly under the radar. Unless people awaken to the finality and horror of human-driven extinction, this time of compounding scourges will see a rising tide of “Unusual Mortality Events,” both seen and unobserved, for Sirenians among many other species.

Because of the adverse and accelerating synergies between rapid climate change, sea-level rise, declining fisheries and increasing human populations (both spurring intensified poaching), dam construction and continued agricultural fertilizer and pesticide pollution, the plight of Earth’s Sirenians is expected to worsen. It deserves emphasis that their continued slaughter for food and other purposes is completely unsustainable. In the words of Helene Marsh and colleagues, “local populations of Sirenians cannot withstand human-induced mortality of even a few animals per year” (Marsh *et al.*, 2017: 348). The low growth rate of Sirenians – who start reproducing well into adulthood and bear only one offspring every two to three years – makes them extremely susceptible to human pressures. Conservationists and concerned Earth citizens must take urgent action to protect all dugongs and manatees who are still with us to carry them through the rough waters ahead.

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