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HOPE SPRINGS

For such a huge aquatic mammal the manatee is surprisingly agile

DAVID FLEETHAM/NATUREPL.COM



ORTH-WEST FLORIDA'S LUSH, TREE-STREWN coastline is incredibly shallow where it meets the Gulf of Mexico. Scattered mangrove islands form a natural barrier between coast and open sea and throng with birds such as white pelicans, storks and herons. Dolphins are often spotted playing, hunting and chasing airboats, while crabs and scallops thrive in the bays. Move inland and clear, spring-fed waters host snails, damselflies, insect larvae and crayfish.

MANATEE: WOLFGANG POLZER/ALAMY; HABITAT: RUI XU/ALAMY



Sea cows, or manatees, feed on underwater vegetation



The freshwater sanctuary of one of Kings Bay's 70 inland springs

But I am not here for dolphins and damselflies, lovely though they are. Today, I will be out on a pontoon – a flat-bottomed boat – in the Kings Bay area of the Crystal River, searching for a mysterious aquatic mammal. I am seeking sea cows.

'Sea cow' is the alternative name for the Florida manatee – and all manatees, in fact – and is an apt moniker for an aquatic herbivore that is relatively slow-moving and spends most of its time grazing on seagrass. These animals are also remarkably agile, able

ABOUT THE AUTHOR



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to swim upside-down, roll, somersault and manoeuvre vertically in the water. Using highly sensitive whiskers to locate food, their stiff, prehensile snouts, similar to an elephant's trunk, tear up and feed on the vegetation underwater. These enormous but gentle coastal creatures are the area's biggest natural attraction.

Florida manatees occupy Atlantic coastal and Gulf waters, as well as the inland bays and channels of the Sunshine State. Two hotspots are the Crystal and Homosassa Rivers on the west coast, major waterways fed by inland springs. The animals move between these rivers and the brackish waters of the Gulf, but tend to hug the shores as temperatures cool with seasonal change. As warm-blooded herbivores, manatees need to maintain a body temperature of at least 21°C, so winter

Where is Kings Bay?



Situated in north-west Florida, Kings Bay sits on the Crystal River, which flows into the Gulf of Mexico.

Restoration of Kings Bay

The Kings Bay Restoration Project is a partnership between Save Crystal River and aquatic restoration experts Sea and Shoreline. The project involves cleaning up the bay and replanting it with seagrass, and it's a labour-intensive process. First, years of decayed vegetation and detritus, plus millions of kilograms of *Lyngbya* algae, have to be cleared from the seabed using a hoovering device. Once the sandy seabed is exposed, volunteers hand-plant the rhizomes – the roots – of the seagrass. These are protected using cages, which enable the saplings to grow and develop without being eaten or disturbed by hungry manatees. Biologists check and clean the cages regularly to ensure the plants are growing.

In the process, natural spring vents are unearthed, which improves the environment. The team at Save Crystal River has also designed a skimmer to collect floating eelgrass that has been shed, or torn up by anchors. Some of this is cleaned and then used as feed for rehabilitating manatees in the local critical-care centre.



The big hoover in action

“Starvation was the main cause of death, the seagrass killed off by pollution and algal blooms”

sees them leave the coastal waters and head inland in search of warmer conditions. Thus, while some individuals do remain in the rivers all year round, inland populations swell in December and January – numbers in Kings Bay, for example, reach as many as 1,000. And with the manatees come tourists in their thousands, all eager for an encounter with a watery giant.

THERE IS AN ART AND A SCIENCE to searching for sea cows. “We will be looking for the ‘footprint’ of the manatee,” advises Captain Vince, as we launch the pontoon. “When their round tails come to the surface and go back down, it makes an imprint on the water. And they breathe every 10 minutes, so it is not difficult to spot their snouts.” We manoeuvre towards Kings Bay, where 70 springs pump out more than two billion litres of freshwater every day. Manatees are a keystone species and

A barge operates the vacuuming system that sucks the algae from the bottom of Kings Bay



their presence is a strong indicator of the health of a riverine ecosystem. These animals are protected (under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973), but much of their habitat is not. Population decline became noticeable by the early 1980s, a result of pollution, fatal collisions with watercraft and significant loss of habitat to development. This sparked the creation of the Crystal River National Wildlife Refuge in 1983, a 32.4 hectare site consisting of 20 islands designated as Manatee Protection Areas.

Other conservation measures followed, including the designation of Kings Bay as a Manatee Protection Area in 2012 (comprising seven manatee sanctuaries that are off-limits from 15th November to 31st March), and, in the same year, the formation of Save Crystal River Incorporated, a nonprofit organisation.

Nonetheless, these creatures remain vulnerable across the state. In 2021, 1,100 of

RESTORATION PROJECT (X5): SAVE CRYSTAL RIVER. SNORKELLING: MAURICIO HANDLER/GETTY



Snorkelling visitors don't always play by the rules



Top: clearing the natural vents in the springs. Bottom: hand-planting the seagrass.

Manatee manners

Hundreds of thousands of tourists visit Crystal River each winter to swim and snorkel with manatees. While tourism supports the local economy, the number of people in the rivers recreationally is also raising concerns about disturbance. The US Fish and Wildlife Service (FWS) encourages 'passive observation' of manatees, which means not initiating contact or feeding them, but these guidelines are not always enforced. It is illegal to feed, water, disturb or harass manatees.

the total population of up to 7,000 died, with many of the fatalities occurring in the Indian River Lagoon on the east coast. Starvation was the main cause of death, a result of seagrass being killed off by pollution and associated algal blooms. According to Ranger Monica Scroggin of the US Fish and Wildlife Service, this mass die-off was an 'Unusual Mortality Event'. In 2022, manatee deaths in Florida decreased to 800, but this figure was still higher than the five-year average of 741.

AS WE ENTER THE CHANNEL that merges with Crystal River, I see 'Idle Speed/ No Wake Zone' signs warning vessels to operate extremely slowly. It's a clear reminder of one of the biggest problems that manatees face – sharing their waterways with humans, particularly as enforcement of the law in relation to watercraft appears to be crucially lacking. These buoyant creatures often float near the surface, and even with speed

restrictions, can be struck by recreational motorboats and speedboats, hundreds of which are moored in and around Kings Bay.

It's something that's clearly on everyone's minds as we potter along. Vince's laid-back manner, shared by his shipmate, Alyssa, is deceptive. Both are quietly on alert, constantly on the lookout for animals that might venture too close, and we cruise at the minimum speed. Houses line the water's edge, many of them complete with private docks and expensive-looking boats. According to Mike Engiles, owner of Crystal River Watersports, Crystal River is probably one of the most urban-impacted of all national refuges.

Rain from an incoming storm is starting to fall, and there are a few flashes of lightning, followed by thunder, but this quickly dissipates to release a fresh, invigorating odour. By now, the crew has located two large females, thanks to the tell-tale presence of 'noodle soup' – a collection of snorkellers using flotation tubes.



Scoffing seagrass with its suitably stiff snout



River vessels sharing the waterways with manatees are urged to slow down

We wait for these swimmers to depart, then tentatively drop anchor. As I'm already fitted with a wetsuit, I can immediately slide into the water. This is my first real opportunity to see manatees underwater and observe their poetic and undulating movements. Gliding beneath the surface, I spot them resting on the shallow riverbed, nestling into the seagrass, unperturbed by my presence. I'm amazed by their sheer size. These are large mammals that can reach lengths of up to four metres, with females larger than males.

One of the females has a distended belly and the crew suspects she might be pregnant. It's good news for a species still in recovery, which is impeded by a slow birthrate. Females give birth to a single calf every three years, which they nurse underwater for one to two years, using teats located behind their flippers.

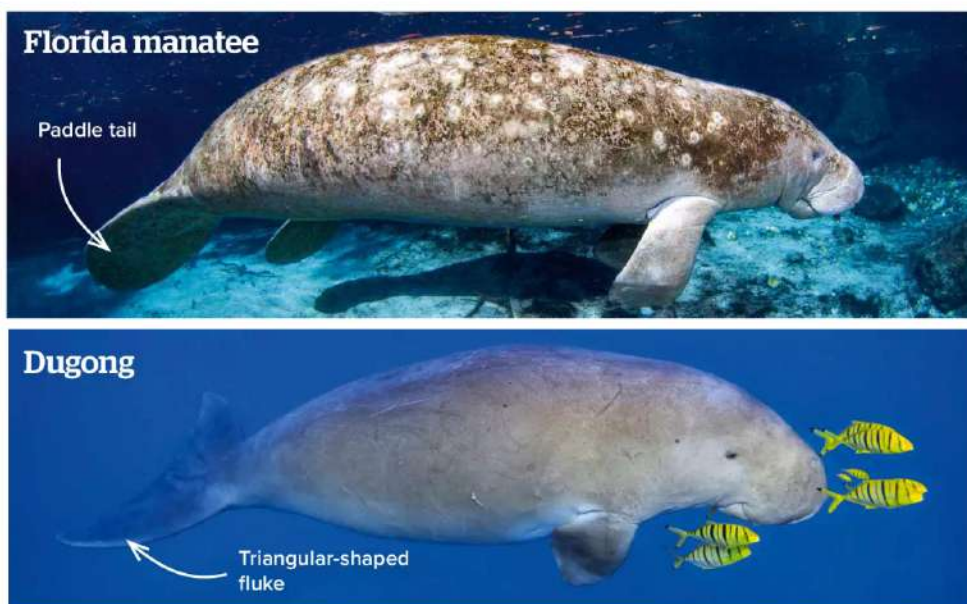
I spend about 15 minutes admiring these incredible sea cows and taking in their huge, whiskered snouts and their mottled skin, grey overall but spotted with pinky-brown and even turquoise hues. After a while, one of them begins to ascend, and her companion follows. Even though I'm keeping my distance, I feel unnerved that I'm in their space. I back-paddle to provide them with more room to manoeuvre. Using their flippers to steer, they glide effortlessly through the water and drift away.

These animals may be docile, but they are also intelligent and approach humans out of curiosity. In this instance, they obviously have better things to do. I'm giddy from such a unique natural experience, yet I'm also left wondering whether such proximity might impact their behaviour, particularly with the

growing numbers of tourists coming to swim with them (see box, page 73).

SAVE CRYSTAL RIVER HAS BEEN a stellar example of grassroots conservation. For decades, Kings Bay had been a huge draw for visitors who came to 'take the waters' and enjoy outdoor activities such as boating and camping. But by the early 1990s, it was startlingly obvious that the water was no longer as clear as it once was. The major cause of this was a green-blue algae, known as *Lyngbya*, taking over springs and rivers and pushing out the seagrass.

Fearing that nothing was being done to address the situation, local residents banded together with the goal of restoring their waterways to their former glory, and



What is a manatee?

Manatees are marine mammals that are closely related to the dugong and distantly related to the elephant. There are three species of manatee – the West Indian, African and Amazonian. The Florida manatee is a subspecies of the West Indian manatee, as is the Antillean (or Caribbean) manatee. Dugongs and manatees are very similar, and you can tell the difference by the tail: the manatee has a paddle; the dugong has a triangular-shaped fluke. But ID in the field is easy as the two species live on opposite sides of the globe; their habitat doesn't overlap.

CLOCKWISE FROM BOTTOM LEFT: GETTY; DAVID FLEETHAM/ALAMY; ROLF VON RIEMATTEN/IMAGEBROKER/ALAMY; JOEL ZATZ/ALAMY; ALEX MUSTARD/NATUREPL.COM

MANATEES

Manatees surfacing to breathe at the Three Sisters Spring reserve

ALEX MUSTARD/NATUREPL.COM

“There is more than a 75 per cent increase in species diversity in areas of restoration versus non-restoration”

TRACI SCHOENROCK, KINGS BAY RESTORATION PROJECT

Save Crystal River was born. Determined to get rid of the algae, they started raking it up by hand. But with the bay measuring in excess of 242ha, they needed a more efficient solution. After schoolchildren sent letters to legislators and residents went knocking on political doors, funding was finally secured for the Kings Bay Restoration Project.

A pilot programme was launched in 2015, focussing on an area of just 1.3ha. According to administrator Traci Schoenrock, no one, including scientists, ecologists and business leaders, thought it would work. The idea was to vacuum up the *Lyngbya*, then replant the area with seagrass. The results were remarkable and to date, 33.5 hand-planted hectares of seagrass have spread to more than 120ha. Save Crystal River, currently working on a project to restore a total of 37.2ha, is applying to secure funding to restore another 32.4ha in the northern section of Kings Bay. Thanks to their efforts,

habitat in the National Wildlife Reserve appears to be recovering and, it seems, the manatee population with it. “Our manatees are happy and healthy as a result of our projects, and we have more year-round manatees than in the past because of the available food source,” says Traci. “There is also more than a 75 per cent increase in species diversity in areas of restoration versus non-restoration.”

The good work doesn't stop there. Kings Bay's expansive Three Sisters Springs reserve is considered the last truly wild spring environment, possibly in all of Florida. Its 23.4ha, once privately owned and slated for development, now comprise a manatee sanctuary. It's a work in progress, but sea cows, alongside wildlife such as alligators and snakes, are starting to make a strong comeback. This reserve has 400m of boardwalks, which allow visitors to see the manatees without disturbance.

In addition, if manatees are injured or orphaned, there are five acute-care facilities across Florida that provide rehabilitation and release, including Ellie Schiller Homosassa Springs state park, renowned for its three spring vents and underwater observatory.

CHUGGING BACK ALONG THE river, it is easy to understand the concern for manatees here, but there are plenty of reasons to be hopeful. One positive example is that the US Fish and Wildlife Service initiated an Endangered Species Act five-year status review in 2021 for the West Indian manatee, which includes the Florida Manatee subspecies, to assess ongoing conservation efforts and ensure that all listed species are appropriately classified.

Let's hope that, with joint efforts by boat owners, citizens, government organisations and NGOs, the sea cow can thrive once again. **W**

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WALKING
WITH THE WORLD'S
**BIGGEST
DINOSAUR**



SPRING CLEAN

An ambitious project is reviving
manatee habitat in Florida