

The presence, or absence, of dugong tells us a lot about the health of an ecosystem.

Mirey Atallah

Head of the UN Environment Programme's Climate for Nature Branch



Spotlight GREEN & BLUE

SAUDI ARABIA

A safe harbor for the dugong

How the Kingdom is protecting sea cows, safeguarding fragile habitats, and ensuring species survival

Haifa Alshammari Riyadh

Once mistaken for mermaids by weary sailors, the dugong — shy, slow-moving marine mammals — now face a very real threat of extinction.

Their closest relative, Steller's sea cow, vanished in the 18th century after relentless hunting. Conservationists warn that unless strong protections are put in place, dugongs could meet the same fate.

But in Saudi Arabia, herds of this elusive species are finding refuge. Along the Red Sea and Arabian Gulf coastlines, dugongs graze peacefully in seagrass meadows — a vital habitat that the Kingdom is determined to safeguard.

"The presence, or absence, of dugong tells us a lot about the health of an ecosystem, its diversity and levels of pollution," said Mirey Atallah, head of the UN Environment Programme's Climate for Nature Branch, commenting on regional conservation efforts.

Dugongs, nicknamed "sea cows," feed exclusively on seagrass in shallow waters. They have fusiform bodies, dolphin-like flippers, and broad tails, but their most striking trait is their reproductive pace.

Females give birth only once every three to seven years, and calves stay with their mothers for

up to two years. This slow cycle makes dugongs highly vulnerable to population collapse.

Saudi Arabia is one of the few countries where their survival is being actively secured. The National Center for Wildlife has introduced satellite tracking and long-term studies to monitor dugong movements.

Red Sea Global, the developer behind regenerative tourism projects The Red Sea and AMAALA, has also made

DID YOU KNOW?

1 A dugong can consume up to 40 kg of seagrass daily, maintaining the health of marine plants.

2 Dugongs are between 2 and 3.5 meters in length and weigh 300 to 500 kg.

3 They have thick skin, a dolphin-like tail, and live in small groups.

dugong protection part of its environmental commitments.

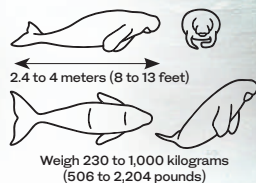
"Dugong are a threatened species and, ecologically, highly distinctive. There is no other similar species in the region," RSG said in a statement.

Its scientists are studying foraging grounds and migratory pathways, using drones and even testing machine-learning tools to detect dugongs in aerial surveys. With its extensive seagrass beds, RSG believes the

CHARACTERISTICS OF A DUGONG

Large herbivorous marine mammals of the order Sirenia, closely related to manatees.

APPEARANCE
Fusiform bodies, paddle-like flippers, and fluked tails like those of dolphins.



Weigh 230 to 1,000 kilograms (506 to 2,204 pounds)

REPRODUCTION
Females give birth every 3 to 7 years, and calves stay with their mothers up to 2 years, making populations vulnerable to decline.

LIVING SIRENIANS



DUGONG
(*Dugong dugon*)
Habitat: Shallow coastal waters of the Indo-Pacific such as Red Sea, East Africa, Southeast Asia, Northern Australia.
Classification: Family Dugongidae; Order Sirenia.

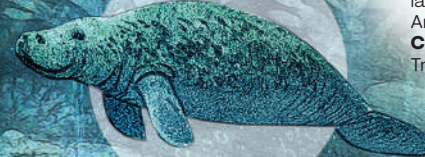


WEST AFRICAN MANATEE
(*Trichechus senegalensis*)
Habitat: Rivers, estuaries, and coastal waters of West Africa (from Senegal to Angola).
Classification: Family Trichechidae; Order Sirenia.

RELATIVES WITHIN THE ORDER SIRENIA



WEST INDIAN MANATEE
(*Trichechus manatus*)
Habitat: Warm coastal waters, rivers, and estuaries of the Caribbean, Gulf of Mexico, and Florida.
Classification: Family Trichechidae; Order Sirenia.



AMAZONIAN MANATEE
(*Trichechus inunguis*)
Habitat: Freshwater rivers and lakes of the Amazon Basin in South America.
Classification: Family Trichechidae; Order Sirenia.

EXTINCT CLOSE RELATIVE



STELLER'S SEA COW
(*Hydrodamalis gigas*)
Status: Extinct in the 18th century.
Habitat: Cold waters of the North Pacific, near the Commander Islands (Russia).
Classification: Family Dugongidae; Order Sirenia.

area could become a regional stronghold for dugongs.

The Kingdom's coasts are among the species' last global sanctuaries. The Red Sea offers vital feeding grounds, while the Arabian Gulf is home to one of the world's largest populations, estimated



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at around 7,000 animals.

These numbers reflect the Gulf's rich seagrass meadows and favorable conditions for seasonal migration.

To ensure their safety, Saudi authorities have introduced strict legislation; hunting or harming dugongs can incur fines

of up to SR1 million (\$266,465).

If conservation succeeds, future generations may continue to glimpse dugongs gliding through Saudi waters — reminders of how legends of mermaids were born, and of how human care can keep myth and nature alive.

Saudi Arabia's water sector turns scarcity into opportunity

ARIF ALKALALI

Green water refers to moisture held in soil and consumed by plants, while blue water describes water in lakes, rivers and aquifers. In Saudi Arabia, both are scarce. Yet despite this extreme aridity, the Kingdom has emerged as a global leader in water governance.

The UN-Water body recently recognized Saudi Arabia as the SDG 6 Country Acceleration Case Study for its progress on integrated water resource management, represented by SDG 6.5.1. That recognition is supported by measurable progress.

Between 2020 and 2023, the Kingdom's score on this indicator jumped from 57 percent to 83 percent — a remarkable leap achieved not by changes in climate,

but by the strength of its management, governance and long-term planning.

These improvements are enshrined in Vision 2030, which sets water security at the core of sustainable development.

Saudi Arabia's journey of water innovation dates back more than a century. The late King Abdulaziz ordered the construction of Red Sea water condensing machines in the early 20th century, a prescient recognition that science and technology were essential.

Political commitment has remained constant; the Basic Law of Governance anchors the principle that resources must be developed for the benefit, security and prosperity of society, within a sound scientific framework.

That principle now drives the National Water Strategy, which brings



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together 10 programs spanning policy, emergency planning, resource development, research and innovation.

The strategy has created a uniquely integrated and coordinated system, with clear institutional mandates and sustainable financial models.

This coherence has produced tangible results. Since the strategy's launch, Saudi Arabia has nearly doubled drinking water production, doubled the capacity of its water conveyance and storage systems, and achieved clean water access for almost 100 percent of the population. At the same time, the reuse of water has nearly tripled.

Privatization is central to sustaining these gains. The Saudi Water Partnership Company now oversees investments worth SR47 billion (\$12.5 billion)

across the water supply chain, creating opportunities for innovation, efficiency and private-sector participation.

By driving down the cost of desalination and investing in clean energy, the sector has reduced its carbon footprint in line with the Kingdom's pledge to achieve net zero by 2060.

Innovation underpins this transformation. Saudi Arabia is developing plans to reuse 90 percent of urban and industrial water, mining wastewater for precious metals, experimenting with lower-salinity seawater for agriculture, and deploying groundwater metering.

Each of these steps reflects a broader ambition: To transform water scarcity into a platform for technological progress and economic opportunity.