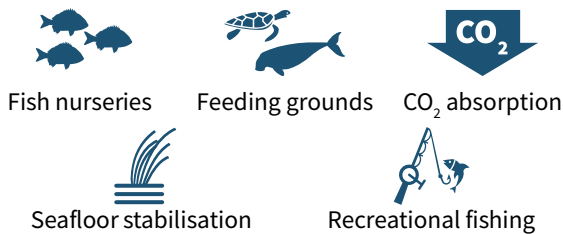


Seagrass meadows are a key ecosystem of the Great Barrier Reef and are currently in a poor to moderate condition mostly due to tropical cyclones, land-based runoff and climate change. Good water quality is critical for healthy and resilient seagrass meadows and supports recovery after acute disturbances such as extreme weather events.

Why are seagrass meadows of the Great Barrier Reef important?

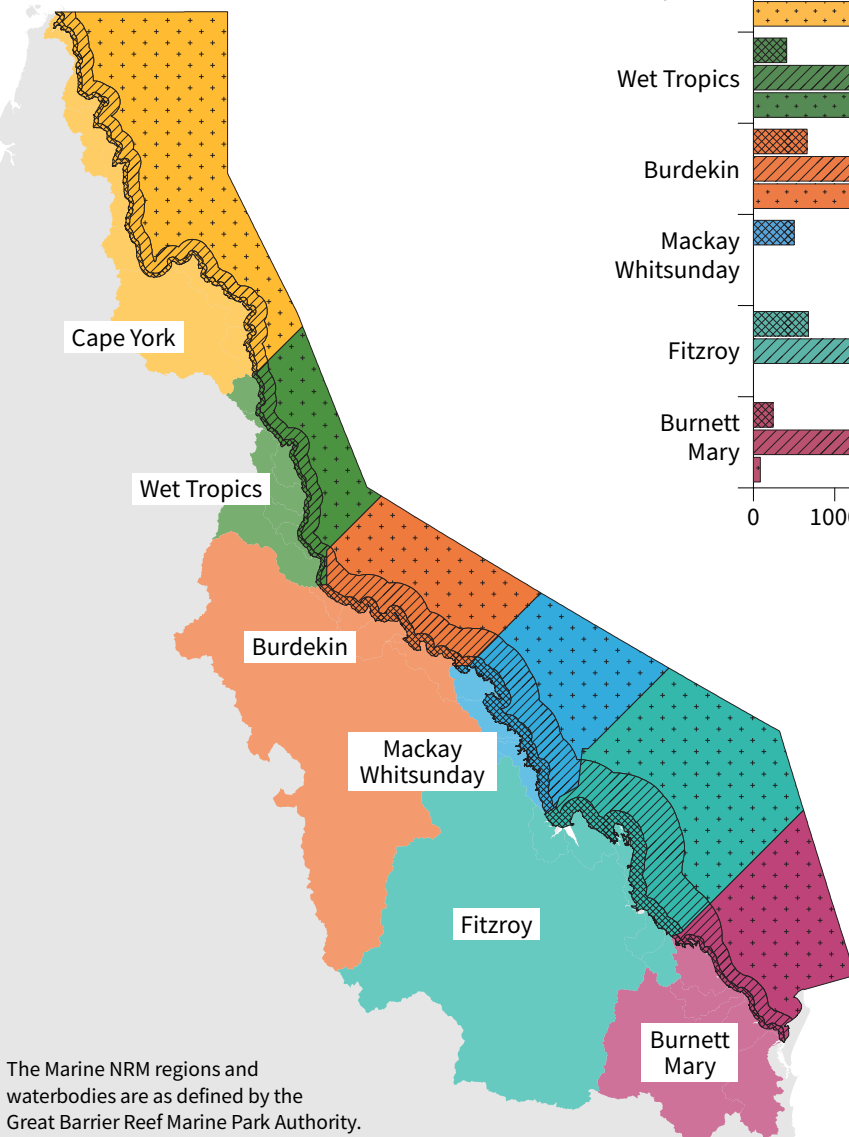
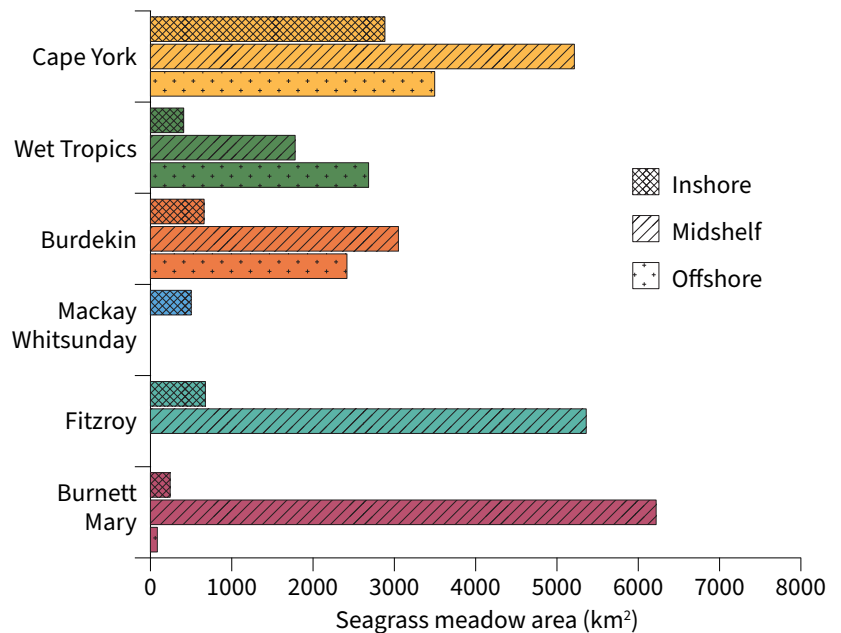
Seagrass meadows are a key ecosystem of the Great Barrier Reef, and are found in coastal, reef and deepwater locations. Seagrass meadows provide multiple ecological, social, economic, and cultural (including Indigenous and non-Indigenous) values, providing critical goods and services to other species, ecosystems and local communities.



How much of the Great Barrier Reef is seagrass and where are seagrass meadows located?

Seagrass meadows cover an estimated **35,679 km²** of the Great Barrier Reef World Heritage Area and occupy approximately 10% of the seafloor. Seagrass meadows are dynamic and their extent and condition change seasonally. Intertidal and shallow subtidal seagrass meadows represent 15% of the overall Great Barrier Reef's seagrass extent (usually within 20 km of the mainland coast) and are generally denser and composed of more foundational species than deepwater meadows (> 15 m depth). Regionally, Cape York has the greatest area of seagrass overall (32%), followed by Burnett Mary (18%), Burdekin (17%), Fitzroy (17%), Wet Tropics (14%), and Mackay Whitsunday with the least (2%).

Area of seagrass meadows by Marine Natural Resource Management (NRM) region and shelf position



The Marine NRM regions and waterbodies are as defined by the Great Barrier Reef Marine Park Authority.

What's the condition of seagrass meadows on the Great Barrier Reef?

Based on the results of the Marine Monitoring Program, **inshore seagrass meadows** across the Great Barrier Reef **declined from Moderate abundance and resilience in 2017 to Poor in 2020**, and while overall condition **improved in 2021** (to **Moderate**), there were **continuing declines in the Fitzroy and Burnett Mary regions**. The poorer conditions in the southern regions appear to be either a legacy of recent cyclones or localised disturbances such as sediment delivery and instability of the seafloor due to physical disturbance.

Threats



Repeated or prolonged extreme weather and discharge events drive the greatest declines to seagrass meadows

Land-based runoff

Sediments, nutrients and pesticides run off the land into river systems when it rains and are carried to the Great Barrier Reef in flood plumes



Inshore seagrass meadows are significantly influenced by seasonal and episodic pulses of land-based runoff, particularly sediments and herbicides that are transported in flood plumes

Other threats

include coastal development, dredging, fishing and boating which can cause physical damage to seagrass meadows



Rising sea temperature

results in thermal stress



Cyclones and extreme weather events

can cause physical damage to seagrass meadows and increase turbidity

Water quality impacts

The most important stressor for seagrass is light limitation as seagrasses need light to grow



Sediments reduce the quantity and quality of light that can reach seagrass meadows. Increased sedimentation can affect the abundance, diversity, spatial extent and recovery rates of inshore seagrass meadows and their associated communities including fish and dugong.



Nutrients can increase seagrass growth rates, but can also contribute to greater epiphytic growth, which can partially cover seagrass leaves, leading to reduced photosynthesis



Pesticides, particularly photosystem II herbicides, are harmful to seagrass and can reduce growth and lead to seagrass mortality. These effects can be exacerbated in combination with other pressures. Modelling suggests that substantial areas of coastal seagrass are regularly exposed to herbicides in some locations.

Water quality impacts on seagrass meadows are usually highest inshore and decrease across an inshore-offshore gradient

Loss of seagrass habitat is one of the greatest threats to dugong and turtles

Related questions and confidence ratings



For more information on the questions addressed in the 2022 Scientific Consensus Statement, scan the QR code

