



# Discover Seagrass



# What is seagrass?

Seagrasses are the world's only marine flowering plants, forming dense underwater meadows found in sunlit coastal waters across the globe. Often mistaken for seaweed, seagrasses are actually more closely related to the flowering plants found on land and in our gardens. Like their terrestrial relatives, they have leaves, produce flowers and seeds, and possess a complex root structure. Because they rely on photosynthesis, seagrasses need light to survive. As a result, they are typically found in shallow waters.

Having existed for over 100 million years<sup>[1]</sup>, seagrasses date back to the time of the dinosaurs. They originally evolved alongside land plants before adapting to life in the ocean. Today, 72 species of seagrass, taking various forms, can be found across the globe<sup>[1]</sup>, growing in environments ranging from the tropics to the Arctic Circle – on every continent except Antarctica!

The UK is home to two main species of seagrass:

- *Zostera marina* (common eelgrass): a species mostly found in shallow waters up to 10m depth.
- *Zostera noltii* (dwarf eelgrass): an intertidal species found in estuaries and coastal inlets, exposed at low tide for part of the day.



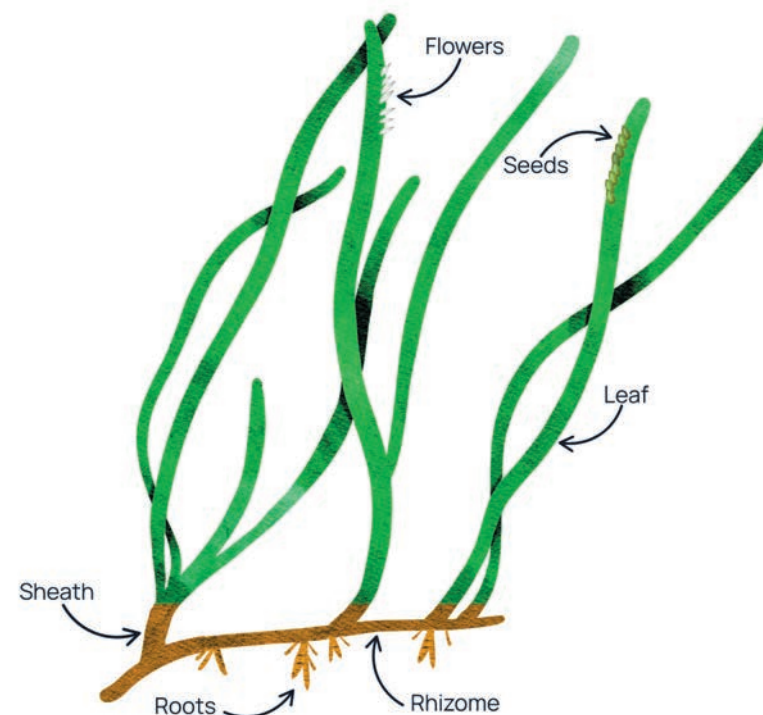
Seagrasses can be both annual (living for just one year) or perennial (meaning they live for multiple years)<sup>[1]</sup> and are able to reproduce in two distinct ways:

## 1. Sexual Reproduction:

like land plants, seagrasses produce flowers that rely on pollination to create seeds. Small creatures called amphipods help carry pollen grains, fertilizing the flowers and enabling seed production. *Zostera marina* starts to flower in mid summer, with seeds developing in July and August<sup>[3]</sup>. Seagrasses have the largest pollen grains of any plant species!<sup>[1]</sup>

## 2. Asexual reproduction:

Seagrasses spread through specialized root structures called rhizomes, which grow beneath the seabed and shoot up new plants. These rhizomes also hold onto important nutrients and help anchor the plant to the seabed<sup>[4]</sup>. In contrast to seagrasses, seaweeds are a much simpler organism, lacking roots and unable to produce flowers<sup>[1]</sup>.



# The importance of seagrasses

Seagrass meadows are one of the most valuable habitats on the planet, providing environmental, economic and societal benefits.



## Biodiversity hotspots:

These habitats are home to a myriad of marine life! A single hectare of seagrass (2.5 football pitches) can support 80,000 fish and 100 million smaller invertebrates. From sharks to seahorses and cuttlefish to crabs, many species seek shelter, food and safety within these meadows, which in turn supports the marine food web.



## Carbon Capture:

Seagrass meadows have the ability to store vast amounts of carbon, trapped in the sediment built up beneath their roots. Known as a blue carbon habitat, seagrasses play a vital role in mitigating climate change. Though they cover less than 1% of the Ocean floor, seagrasses store up to 20% of Oceanic carbon<sup>[1]</sup>.



## Water quality:

Seagrass meadows efficiently remove excess nutrients, like nitrogen from the water. This helps to improve water clarity, water quality and even reduce disease. These plants can lower the presence of disease carrying bacteria by up to 50%<sup>[5]</sup>, making water safer for both humans and marine life.



## Health and wellbeing:

A healthy Ocean sustained by healthy seagrass meadows supports healthy communities by enhancing wellbeing and fostering connection to nature. Whether experienced in, on or around the water, the Ocean provides a serene place for wellbeing, encourages physical activity and a sense of belonging within communities.



## Coastal protection:

With their extensive network of roots, seagrasses play a crucial role in stabilising the seabed and reducing erosion, helping to protect our coastlines. Their tall leaves dissipate wave energy by up to 40%<sup>[6]</sup>, minimising storm damage, increasingly important with our changing climate and increase severe weather events.



## Fishery support:

These meadows provide nursery grounds for many commercially important fish species, crustaceans and bivalves, ensuring food security. Healthier meadows create healthier fish stocks, in turn creating a better economy for local fishing communities. Seagrass meadows support 20%<sup>[7]</sup> of the world's largest fisheries.

# Life on the edge

Sadly seagrass meadows across the globe are being lost at an alarming rate. In the UK alone, we have lost nearly 50%<sup>[7]</sup> of our seagrass meadows since the 1980's and globally we are losing an area of seagrass the size of a football pitch every 30 minutes – that's 7% lost each year.<sup>[7]</sup>

Unfortunately, the biggest threat to seagrass comes from human activities.



- **Physical damage:**

Physical disturbance to seagrass, from anchoring boats, unsustainable fishing methods, propellers and boat chains can cause significant damage to the plant's roots, leaves and rhizomes.

Anchor scars are formed when anchors that are set in seagrass drag along the seabed, due to the movement of the tide and wind. These scarred patches can be up to 4m<sup>2</sup> and take around 10 years to naturally recover.<sup>[8]</sup>



- **Pollution:**

Pollution in various forms threatens seagrass health by degrading water quality. Agricultural run-off, household wastewater and sewage discharges introduce excess nitrogen and phosphorous into the water, leading to harmful algal blooms that block sunlight and reduce seagrass's ability to photosynthesize<sup>[4]</sup>.



- **Climate change:**

Climate change is a significant threat to seagrass meadows, with rising sea temperatures, ocean acidification and increased storms leading to habitat destruction, reduced growth and species distribution shifts. More frequent and severe storms can uproot seagrass, whilst rising water temperatures and levels challenges their ability to survive.



- **Coastal development:**

Development of our coastlines can directly damage seagrass meadows through habitat destruction or indirectly, by increasing sediment run off, reducing water clarity and so limiting the plants' ability to photosynthesize.



- **Invasive species:**

Certain non-native species are considered invasive, often outcompeting native species for space and resources. Wireweed, (*sargassum muticum*) is a super-fast-growing seaweed with long trailing fronds, that can fragment.

There are many things we can do to help seagrass meadows, from reducing our carbon footprint, knowing where seagrass is and thinking about what we put down the drain. Small shifts in our behaviour can make a huge difference! Check out our Calls to Action page to learn more about how you can help this vital habitat.



# References

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