Oyster Reefs in the Netherlands

Oyster reefs function as the *rainforests of the sea*. For divers descending into Dutch waters, a landscape sometimes reveals itself that at first glance looks chaotic: a jumble of shells, stacked and cemented together over the years. Yet behind this apparent randomness lies a wonder of cohesion. What might seem like a static pile of shells is in fact a living structure – a hard foundation on which countless other organisms can thrive. It is a bustling underwater city teeming with life, where fish, crabs and anemones find shelter among the sharp edges.

Reefs

These oyster reefs – also known as oyster banks or oyster habitats – are true architects of biodiversity. They provide not only a home for the oysters themselves, but also the conditions for a rich community of other species. Where once 20–30% of the North Sea floor was covered by oyster reefs, more than 90% has since vanished due to overfishing, disease, pollution and seabed disturbance. Today, however, attention to restoration is growing, and more and more hopeful signs suggest that these rainforests of the sea are slowly returning.

What makes an oyster reef so valuable?

Oysters are *ecosystem engineers* – species that radically shape their environment.

- A single adult oyster can filter up to 200 litres of water per day, clarifying it and allowing more light to penetrate.
- They create hard structures on sandy seabeds, providing settlement surfaces for other species.
- The result is a hotspot of biodiversity, with up to 60% more species than the surrounding seabed.

On a healthy oyster reef you'll encounter fish, crabs, mussels, snails and brightly coloured anemones. Birds such as oystercatchers and gulls also benefit: oystercatchers prise open shells with their bills, while gulls drop them from the air to reach the meat. Even crabs, lobsters, starfish and the oyster drill (a predatory snail) depend on these reefs. For divers, it means an explosion of underwater life that you simply won't find on a bare sandy bottom.

Examples in the Netherlands

- **Brouwersdam (2016):** here a reef formed spontaneously from larvae in Lake Grevelingen. Underwater surveys showed seaweed, sponges, fish and even seals gathering around it.
- **Schiermonnikoog (2020):** a man-made oyster reef teeming with young oysters and other marine life.
- **Wadden Sea:** today, oyster and mussel reefs cover around 2,000 hectares, especially around Texel and Terschelling, where divers have encountered rich reef habitats.
- **North Sea:** at offshore wind farms such as Gemini and the Borkumse Stenen, oysters are being seeded onto 3D-printed reef structures and boulder beds to help new reefs take hold.

Although these examples show that recovery is possible, most oyster reefs remain fragile. Targeted projects and protective measures are still essential if this ecosystem is to have a lasting future.

Restoration and future prospects

Bringing back oyster reefs requires a few crucial conditions:

- **Seabed rest** – free from bottom trawling or heavy disturbance.
- **Hard surfaces** – stones, shells or artificial structures for larvae to attach to.
- **Good water quality** – oxygen-rich, clear and with sufficient currents.

This is why offshore wind farms are promising sites: no fishing is allowed, and the foundation stones provide ideal settlement grounds. Innovative techniques, such as biodegradable mats and “oyster hotels”, are also being used.

Good to know

- The native European flat oyster (*Ostrea edulis*) was once the primary reef-builder, but is highly susceptible to diseases such as *Bonamia*.
- The Pacific oyster (*Magallana gigas*), introduced in the 1960s, now forms extensive reefs in Zeeland and the Wadden Sea. Long seen purely as an invasive species, its role is more nuanced: it also acts as an ecosystem engineer. By creating robust reef structures that host a wide variety of life, it can even pave the way for the return of the flat oyster.
- Oyster reefs are typically found at 5–20 metres depth – within reach for recreational divers, though visibility is often limited (1–5 m).
- Reef restoration creates a win–win: cleaner water, richer biodiversity, and natural coastal protection.

Conclusion

Oyster reefs are far more than piles of shells: they are living reefs, nurseries for young marine life and filters for our seawater. Thanks to restoration projects, they are slowly returning to the Wadden Sea, Zeeland and the North Sea. For any diver – or nature enthusiast – it is a unique experience: the magic of a living oyster reef beneath Dutch waves.

They are *living monuments of resilience* – a reminder that nature, even after near total loss, has the power to rebuild itself when we allow it the space to recover.