

Environmental Impact on Marine Protected Areas (MPA's)

KEY POINTS

- This is a well-known protected area and protections have been in place here since 2008 (pre dating the MPA itself)
- The main protected feature is maerl seaweed
- This forms a complex three-dimensional seabed habitat supporting marine life in the same way as a coral reef
- It grows incredibly slowly and is easily damaged by towed bottom contacting fishing gear
- It provides a unique habitat that is rich in species, provides feeding, breeding and nursery opportunities and helps mitigate climate change through carbon capture and storage

Background

- Currently 18 Inshore MPA's surrounding Scotland's inshore waters
- Each MPA is protected for its own unique features and marine species

South Arran Marine Protected Area (of which the Lamlash Bay No Take Zone is part)

- Area in Lamlash Bay – part of the South Arran Marine Protected Area – is colloquially termed the “No Take Zone” (NTZ) meaning there is no fishing by any method allowed
- **It is well known locally and protections have been in place here since 2008** and was a community led initiative
- The only such area in Scotland with this high degree of protection
- The offence concerned occurred in the No Take Zone

This note is largely material from NatureScot, who advise Scottish Government MPAs. It does not necessarily represent Scottish Government views.

What is Protected in this area?

- The **main protected feature is maerl seaweed**
- Lamlash Bay is home to one of the largest areas of maerl beds in Scotland.
- These coralline pink seaweed form a complex maze that is ideal for small species to find food and hide from predators.

What is maerl?

- Collective name for a number of seaweed species which form hard skeletons as they grow.
- These skeletons form twiggy nodules resembling coral.
- Large numbers of maerl nodules occur together forming maerl beds - **complex three-dimensional seabed habitats which support marine life in the same way as a coral reef.**
- Maerl beds are not common and Scottish seas are of particular importance for them, with around 30% of all maerl beds in north-west Europe found in Scotland's waters.

- Maerl are plants and so need light to grow – this means they are found in relatively shallow water to a maximum of around 40m in Scotland.
- Although their full extent is not entirely certain, the Scottish Government currently categorises around 3,300 hectares of Scotland's seas as maerl bed.
- Maerl can live on many different substrates including gravel, sand and mud, but are most often found well established that the live pink maerl sit on top of several metres of dead maerl 'gravel'.
- Such deposits of dead maerl have accumulated over 100's of years and, where present, form an important part of the maerl habitat.

What's so special about maerl?

- Healthy maerl beds **provides a unique habitat that is rich in species, provides feeding, breeding and nursery opportunities (including for commercially important species) and helps mitigate climate change.**
- The three-dimensional matrix of maerl beds created by the nodules of maerl provides a multi-storey home for many other plants and animals which can live on and amongst the maerl or burrow into the maerl bed.

Essential habitat for other species

- The structural complexity of maerl beds and the abundance of species they support provide good shelter as well as abundant prey.
- They are important nursery areas where the early life stages and young of different species can settle and grow. This includes commercially important species such as fish, crabs and king and queen scallops.
- Work has shown that the young of some species are actively attracted to live maerl where they mature and help seed other areas.
- Effective protection of seabed habitats, including maerl, enables species to grow and mature and contribute to a well-functioning marine environment with ecological and commercial benefits.
- The varied habitat structure provided by a healthy maerl bed is also important; juvenile cod are one example of species that is known to benefit from having more complex seabed structure that provides shelter and food.

What's the problem?

- **Maerl grows incredibly slowly**, only up to 1mm a year, and maerl beds can be 100's or even 1000's of years old.
- **Maerl is fragile and easily damaged** by any activity that breaks it up, physically disturbs the structure of a maerl bed or increases the amount of sediment in the water which can settle on to and smother the maerl
- Human activities have caused declines in both extent and quality of maerl beds and pristine grounds that remain are only a fraction of what used to exist.

- Recovery of damaged maerl is very poor to non-existent. This is because of the slow growth and how it reproduces to colonise new areas which relies primarily on new maerl nodules growing from parts of existing live maerl.
- Maerl is the keystone species of a maerl bed, and without it the vibrant habitat of a healthy maerl bed doesn't exist.
- Damage to maerl beds reduces their biodiversity, their role as essential habitat for other species and their overall long-term viability and function including for carbon capture and storage.
- This is not just a problem for maerl and species in the sea, it is a problem for us and a loss to society as a whole. Biodiversity, the variety of life on our planet, is essential to our existence – drives natural systems on which we all depend.

Towed mobile bottom fishing and maerl

- Towed bottom-contact fishing gears, cause major physical disturbance to the seabed.
- Major impacts from towed bottom fishing gear occur the first time an area is fished.
- Mobile bottom trawl fisheries can quickly destroy a maerl bed: removing the living maerl, breaking up the maerl nodules, destroying the structure of the maerl bed and killing animals and plants living on it.
- **A maerl bed that has existed for 100's of years can be destroyed in a matter of minutes.**

Other sensitive habitat types within the MPA

This area also has patches of seagrass beds, kelp forests and is deemed to be one of the most marine sensitive areas in the country. These are also highly sensitive to towed bottom-contact fishing gears.