

THE KOSTER-VÄDERÖ FJORD

– important fishing grounds and conservation



A deep trench runs south from the Norwegian border to Väderöarna. Trawling is forbidden this close to shore, but selective shrimp trawling is allowed here if the trawls are equipped with a sorting grid and if the water is deeper than 60m. Most trawling for shrimp is done in the trench between Saltö and Väderöarna, and at Persgrunden. The rich marine life and unique habitats of this area are protected by a national park and a nature reserve. Trawling is completely forbidden in eleven special areas, of which eight are within the Kosterhavet national park. In the Trawl Restriction Zone trawling is allowed only for prawns and Norwegian lobster. Here too species-specific sorting grids are required on the trawls.

A prizewinning fishery

Development of the Koster-Väderö Fjord model was rewarded in 2003 with the **Swedish Seafood Award**, Sweden's premier fishing industry award, in the category "Sustainable Fishing". The jury's declaration read: *"Regulation of shrimp fishing to protect the unique ecosystems in the Kosterfjord, northern Bohuslän, is the first example in Sweden of successfully implemented local management . . ."*

In 2009, fishermen Charles and Robert Olsson from Grebbestad were awarded the **Coop Änglamark Prize** for their efforts to "protect the marine environment and inspire others to fish in a sustainable manner". The jury's declaration read: *"It is the people in this small company that do such a great job and make the big difference. The prizewinners have shown clearly that everybody can use their individual skills to influence our shared environment, and do so with inspiring commitment . . ."*

KRAV-certified shrimp trawling

The KRAV organisation aims to promote sustainable food production. Today, the KRAV label can be found on a range of organic products. KRAV-certification requires fishing gear and methods that do not compromise the sustainability of stocks. Use of environmentally friendly motor oil and responsible waste management procedures are also required. Several fishermen in the area are working towards obtaining KRAV-certification. Keep an eye out for "KRAV"-marked prawns in local shops and restaurants.

Read more about the professional fishery, shrimp trawling and Kosterhavet national park:

www.samforvaltningnorrabohuslan.se / www.kosterhavet.se



FISHING

in the Koster-Väderöfjord

A unique marine environment

The *Koster-Väderöfjord* is home to more marine species than any other area in Sweden. The Kosterhavet national park, Sweden's first marine national park, was established in 2009. It has over 200 species of animals and algae that are found nowhere else in the country. To the south lays Väderö nature reserve, a large marine protected area.

The deep Koster-Väderö fjord is linked to the Norwegian trench, which in turn connects to the open Atlantic. This means the deep waters of the fjord exchange with those of the deep ocean. In these salty, oxygen-rich waters there are animals that would otherwise only be found on the continental slope. The fjord is an important spawning and nursery area for fish and shellfish, and ideal habitat for the northern shrimp, which supports one of the region's important industries – the shrimp fishery.

Co-management

The shrimp trawl-fishery is an important part of the local economy and history. However, trawling can damage the sea floor as well as the animals living in the sediment and on the surrounding rocky reefs.

An area with such outstanding conservation value calls for careful management. Today, fisheries in the area are co-managed by local fishermen, researchers, the County Administration, the Swedish Agency for Marine and Water Management, and politicians from Strömstad and Tanum local councils. The foundations for this co-management were laid by the so-called *Koster-Väderö Fjord Agreement* which was developed with support from local councils, WWF, and the European Maritime and Fisheries Fund.

Professional fishermen are represented on the “*Kosterhavsdelegation*”, the local board for the Kosterhavet national park. Similarly, managers of the national park are members of the steering committee for co-management of the fisheries.

Fishing within the national park

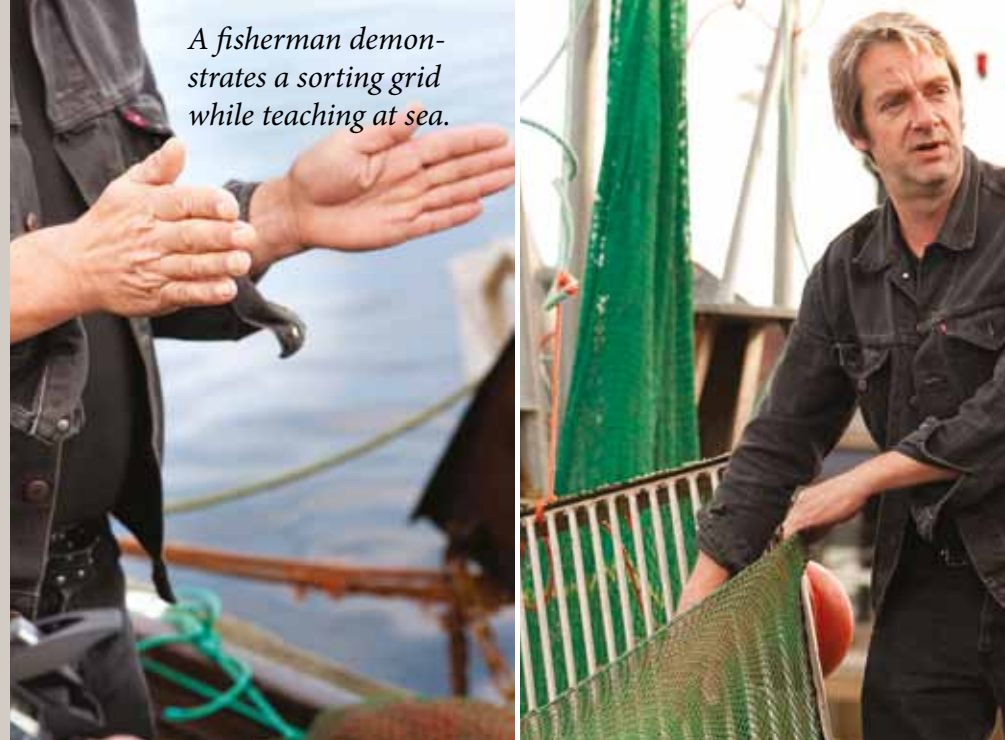
The stated aims of the national park include long-term protection and conservation of the area's marine ecosystems, habitats, and species while ensuring sustainable use of the area's biological resources.

Within the park, fishing for shrimp, lobster and Norwegian lobster (scampi) is allowed. Fishing is regulated by the Koster-Väderö Fjord Agreement and Swedish fisheries law. The park has several sea-bed protection areas where trawling, anchoring, and other activities that can harm the sea-bed are prohibited. The goals of the management plan for the national park include a long-term sustainable fishery in balance with the area's biological diversity, and the improvement of fish and shellfish stocks.

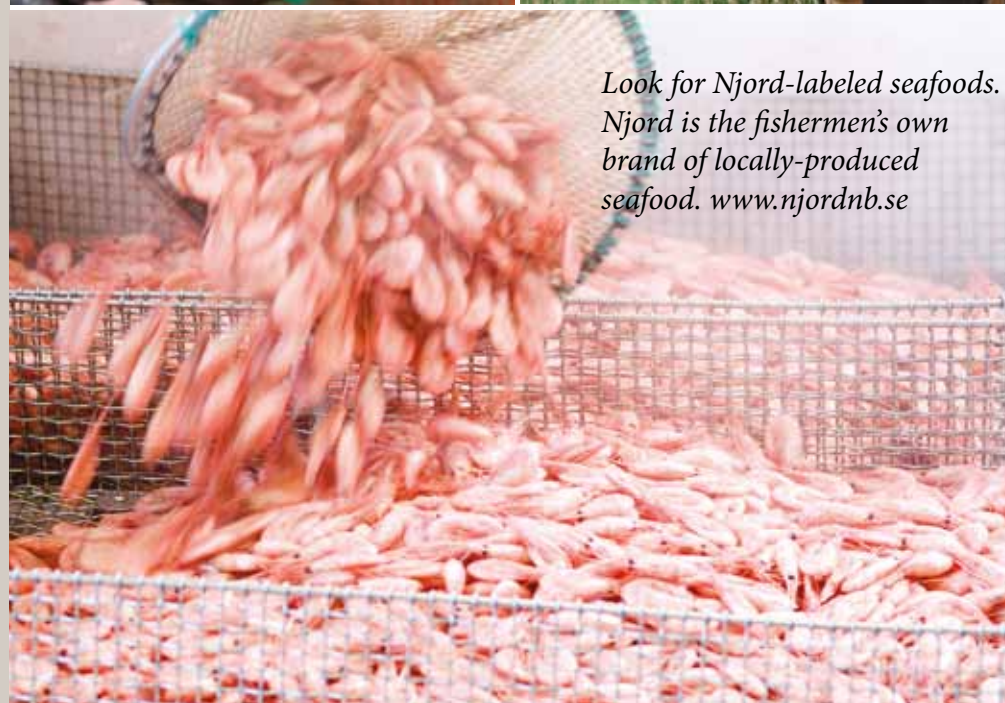
The Koster-Väderö Fjord Agreement

The aim of the Koster-Väderö Fjord Agreement is to develop a sustainable fishery compatible with the region's outstanding conservation value.

The Agreement was reached in 2000 between fishermen, researchers, fisheries organizations, and authorities at different levels. In 2015 supplementary rules were introduced, and today eleven small areas in the deep fjord are fully-protected from trawling. A special permit is also required to fish for shrimp in the area. Trawls must be small, lightweight and equipped with a sorting grid that allows fish bycatch to escape. Education and sharing of knowledge are key features of the agreement. Several courses in marine ecology (for fishermen) as well as in commercial fishing and fishery technology (for researchers and officials) have been arranged.



A fisherman demonstrates a sorting grid while teaching at sea.



Look for Njord-labeled seafoods. Njord is the fishermen's own brand of locally-produced seafood. www.njordnb.se



Today about 200 tonnes of shrimp are caught each year. Approximately 30 shrimp trawlers operate wholly, or partly, in the Koster-Väderö area.

SHRIMP TRAWLING – with low environmental impact

The small-scale shrimp fishery in the Koster-Väderö fjord is characterised by:

1. Reduced bycatch using the “Koster-trawl”

Only specially designed “Koster-trawls” may be used in the Koster-Väderö fjord. These trawls have an aluminium grille (“sorting grid”), which collects fish and other large animals and guides them through an escape hole above the grid. The shrimp, which are smaller, pass through the sorting grid and are caught in the trawl. This also makes the catch easier to sort for the fishermen. Even the otter-boards for the trawls are much smaller than usual. The size and form of a “Koster-trawl” is very closely defined.

2. Trawling only in deeper areas

Trawling is not permitted in water shallower than 60 m depth. The Koster-Väderö Fjord Agreement deepened the minimum permitted trawling depth from 50m to 60m.

3. Protecting sensitive areas

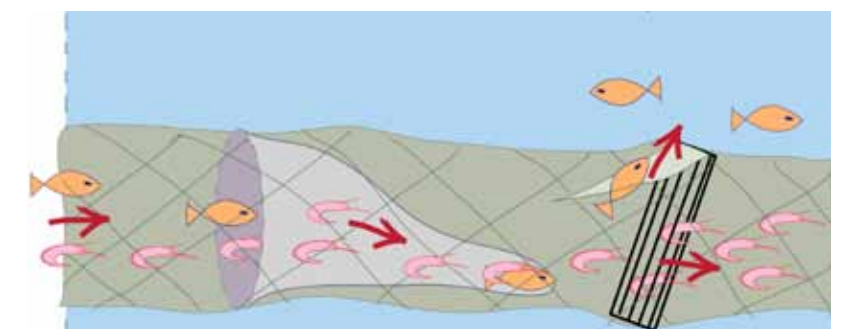
Areas of sea-bed that contain rare or endangered species are protected. There are eleven special protection areas in the Koster-Väderö fjord, in which all forms of trawling are prohibited. To ensure that regulations are followed, fishing vessels are required to have AIS (Automatic Information System), which allows real-time monitoring of fishing. In addition, in order to get a special permit to fish for shrimp in the Koster-Väderö fjord, all shrimp fishermen must undergo mandatory training on the area's unique habitat and regulations.

4. Development and continued co-management

The continued development of environmentally sensitive and selective fishing is important. Efforts to further improve the trawls with a view to increasing selectivity and reducing sea-bed impacts are ongoing. Education and knowledge-sharing between fishermen, authorities and researchers are also important components of co-management.



The seabed of the fjord is full of strange – and sensitive – animals. From L to R, a file shell, sponge, and fireworks anemone.



A sorting grid (a species-specific grille) in the trawl guides larger animals and fish out through an escape hole, and almost completely removes bycatch.