

The photos show an area of Vindö before and after clearance and burning – a dramatic change to the landscape! After the restoration the land has become accessible again, both for humans and for species that thrive in open, sunlit soils.



Vindö
2013 and 2014.
Tall junipers and most birches were cleared in 2013 and 2014. In addition, 12 hectares were burned in 2014.

Brokö
All planted pine, spruce and Austrian pine were cleared during 2013–2015. In addition, 2 hectares were burned in 2015.

Kalvö
Several islands in the Kungsbacka Fjord have been restored within the GRACE project:

Overgrowth – threat to diversity

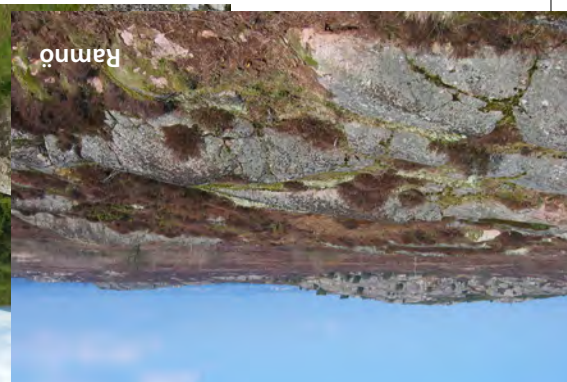
Grazing, burning and firewood collection over hundreds of years have marked the coastal landscape of Halland. But the open coastal heaths, which were a common sight in the past, have become overgrown. There are several reasons. The need for wood and heather for heating and cooking declined, farming was rationalised, and nitrogen deposition caused by humans increased. Overgrowth has led to many open landscape plants and animals being crowded out and becoming increasingly rare.

GRACE project

The EU funded project GRACE (Grazing and Restoration of Archipelago and Coastal Environments) started in 2010. The project is a collaboration between the county administrative boards in Västra Götaland, Halland, Blekinge and Stockholm. The aim of the project has been to restore overgrown pastures in places that are difficult to access, for example islands. In the county of Halland, more than 90 hectares had been cleared by 2015. Besides on the islands of Vindö, Brokö and Kalvö in Kungsbacka Fjord, clearance work has been carried out on Balgö, Vendelsöarna and on Öckerö and Mönster outside Onsala. Burning has also been carried out on Mönster, Öckerö, Brokö and Vindö.



Burning of cleared shrubs was part of the restoration work carried out under the EU project GRACE 2010–2015

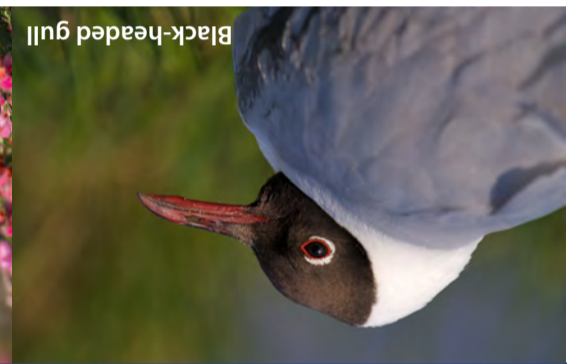


Brokö is one of many archipelago islands with a fine beach. You find it on the north-western part of the island. It is permitted to camp on Brokö, under the right of public access. Walking up in the middle of the archipelago and starting the day with a morning dip is a wonderful feeling!

Brokö
30/6.

On Kalvö you walk through open to semi-open pastures. There are also small groups of trees and in spring, carpets of wood anemones spread beneath the bare tree branches. For those who want to swim, there is a fine bay on the southern part of the island. The northern part is home to a large colony of black-headed gulls, some years accompanied by sandwich terns. To avoid disturbing the birds during breeding, access is not permitted in this area during the period 1/3 to 30/6.

Kalvö



Like Ramnö, Helleö is dominated by open, coastal heather heaths. There are also some birch groves.

Helleö
up on the island is a freshwater pond.

On Ramnö you find open coastal heather heaths. Cross-leaved heath also grows in abundance. To the north are fine sandy beaches, while rocks dominate on the southern part of the island. High

Ramnö
flourishing coastal meadows.

The northern part of the island is dominated by dry, sandy soils, and in the south there are covered in beautiful shades of pink and purple. it flowers in late summer, the ground on Vindö is Heather is the most characteristic species. When Extensive coastal heath stretches across Vindö.

Vindö

Welcome to Kungsbackafjorden

Sun, swimming and fishing attract thousands of visitors to Kungsbackafjorden Nature Reserve every year. Here you can enjoy the beautiful Halland coastal landscape with heather heaths, coastal shores and bare rocks. Sheep graze on the larger islands, keeping the landscape open. The reserve is home to a rich flora and fauna. For example, more than 240 species of birds have been observed in the varied fjord environments. There is also underwater diversity in the extensive eelgrass fields and algae-clad rocky bottoms.

Find us: The islands in Kungsbackafjorden can only be reached by boat.

Regulations for visitors are available on the County Administrative Board website and on signs in the reserve.

Halland County Administrative Board
• tel. +46-(0)10-224 30 00
• www.lansstyrelsen.se/halland



Kungsbackafjorden Nature Reserve comprises 5247 hectares, of which around 500 hectares are land, and was established in 2005. The purpose of the reserve is, among other things, to protect and enhance the marine biotopes, enhance the importance as a reproduction and nursery area for wild animals, preserve the adjacent coastal shore meadows with their rich birdlife, and to make the area attractive for outdoor recreation. The reserve is included in Natura 2000, the EU-wide network of nature protection areas.

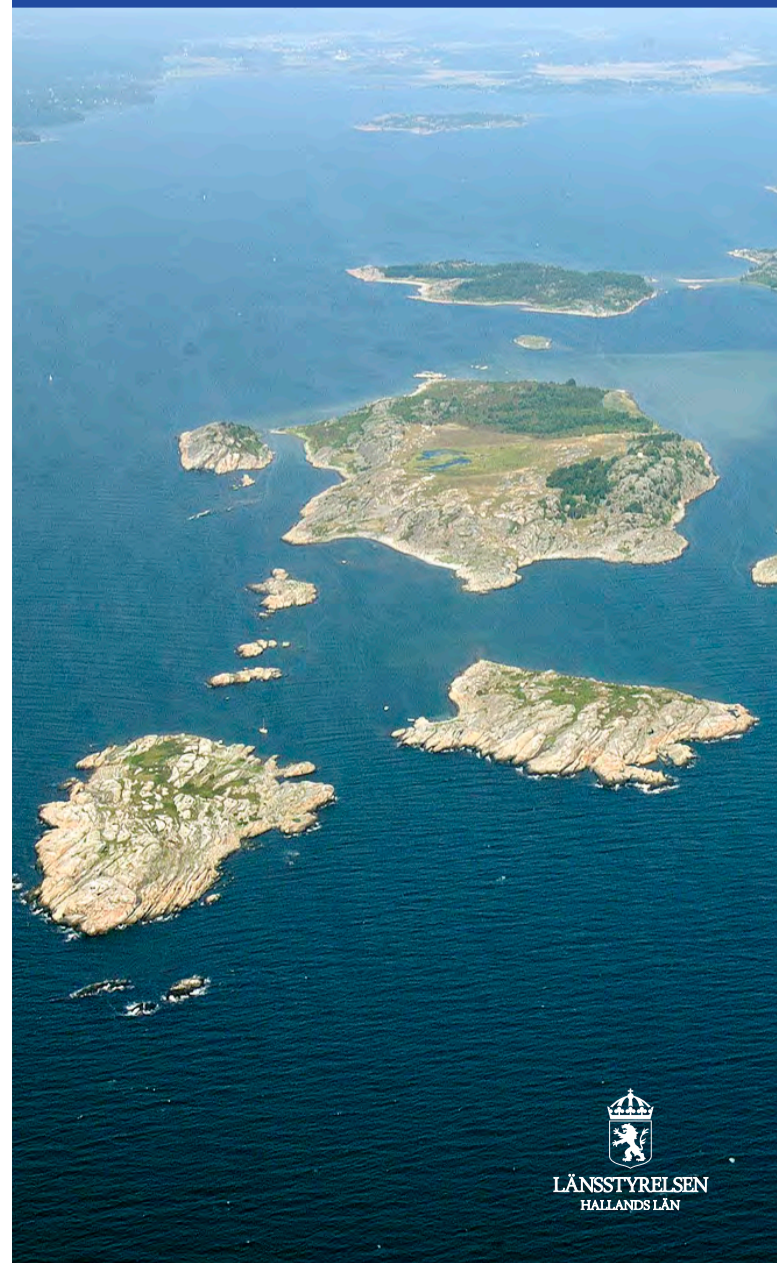


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© Production: Naturcentrum AB, Stenungsund 2015. Translation: M. Morris for S. Busam Golay, Stilen. Photos environments: Halland County Administrative Board. Photo sandwich tern: S. Hage. Photos other species: Naturcentrum AB. Illustrations: P. Elfman (lapwing), M. Holmer (smew) and N. Forshed (other).



 **KUNGSBACKAFJORDEN**



Flat rocks and heaths

The landscape on the islands in Kungsbacka Fjord is typical for the Halland coast. Bare flat rocks and open coastal heath dominate. Flat rocks are mainly found on the southern part of the islands, where impact from winds is strongest. Vegetation is sparse and concentrated to small crevices and clefts. Character species include wild pansy, biting stoncrop and thrift. Grass and heather heaths spread out on the northern part of the islands, including heather, cross-leaved heath and other species.

Grazing and burning

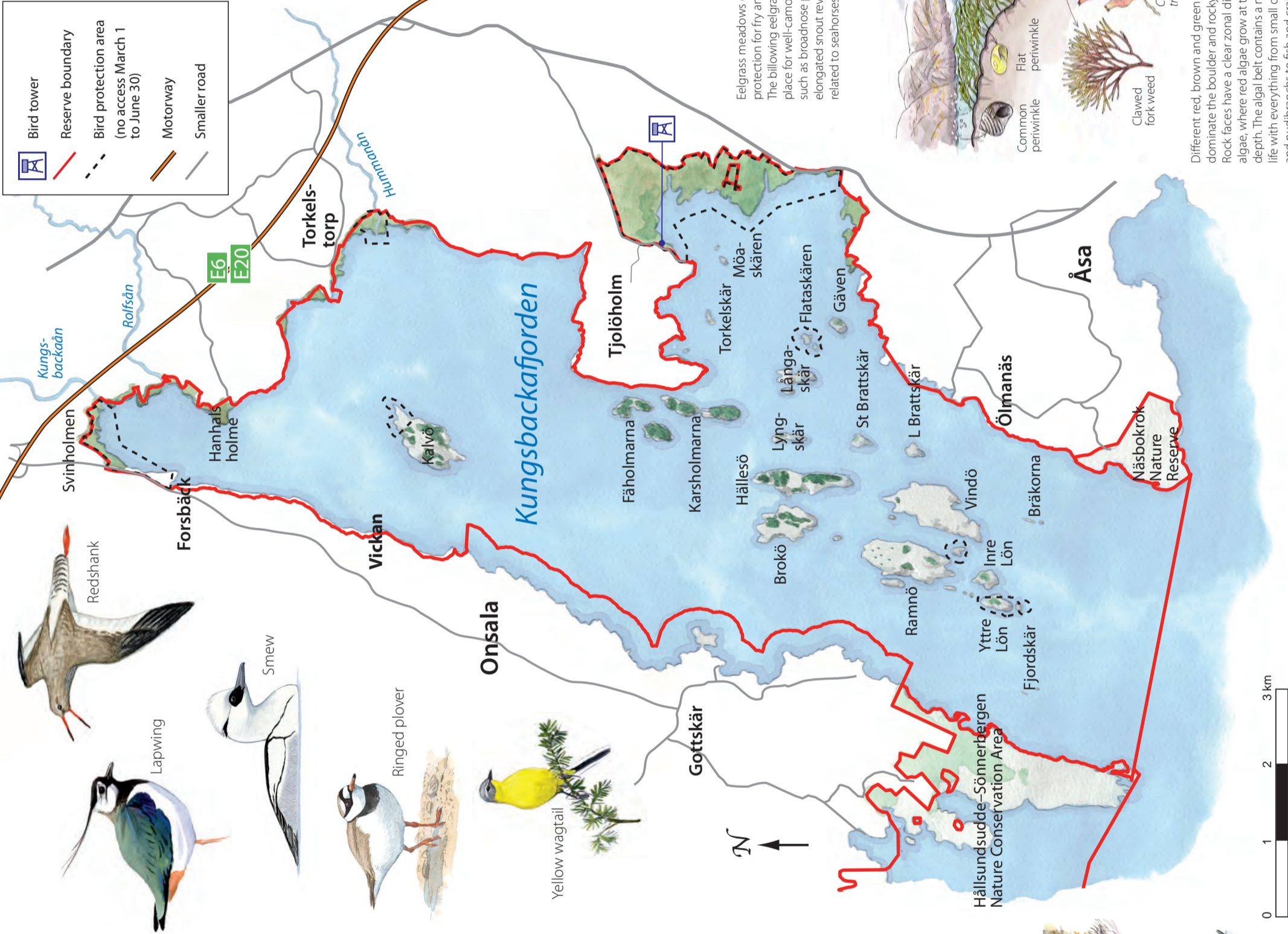
The larger islands in the reserve are old outlands, used as pastures for generations. Traditional farming included heather burning to improve grazing. Burning created tender and tasty heather for the animals. Annual burning of suitably large areas created a mosaic of heather of different ages and patches of herbs and grass. In that way, the animals could graze all year round. In summer, the animals grazed on tender heather and herbs, and in winter they fed on old heather, brushwood and scrub.

Necessary management

Heather burning is now part of the reserve management. The burning of heather promotes regeneration of this plant and other typical heather heath species. At the same time, many competing trees and shrubs are suppressed. Grazing is another important management measure. Today, the larger islands are grazed by sheep. Grazing and trampling keeps the regrowth of shrubs and brushwood under control. Non-competitive plants have a chance to establish when growth is restricted, resulting in a greater diversity of species. Grazing and heather burning are a necessary for keeping open heather heaths. Active management maintains the historical landscape and the flora and fauna that belong here.



To preserve the threatened heather heaths, they must be burned at regular intervals. Fire allows nutrients to be released, and old heather disappears. But the heather plants normally survive, and young, tender shoots sprout within six months. After a fire the soil is bared, allowing new seeds to grow. Beetles, bees, wasps, ants, sawflies and other insects are encouraged by patches of bare mineral soil. And an abundance of insects also attract birdlife.

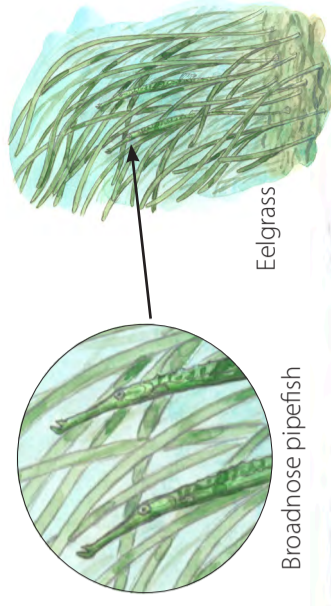


Rich birdlife

More than 240 different species of birds have been observed in the reserve over the years. Lapwing, redshank, yellow wagtail and ringed plover breed on the grazed coastal meadows. The meadows are also valuable resting areas: Large flocks of waders feed here to set themselves up for the long journey between their breeding sites in the north to the winter territories in southwestern Europe and Africa. During spring and autumn, large numbers of ducks, geese and swans also rest further out on the fjord. For tufted duck and the rare smew, the fjord is the main winter locality in Halland.

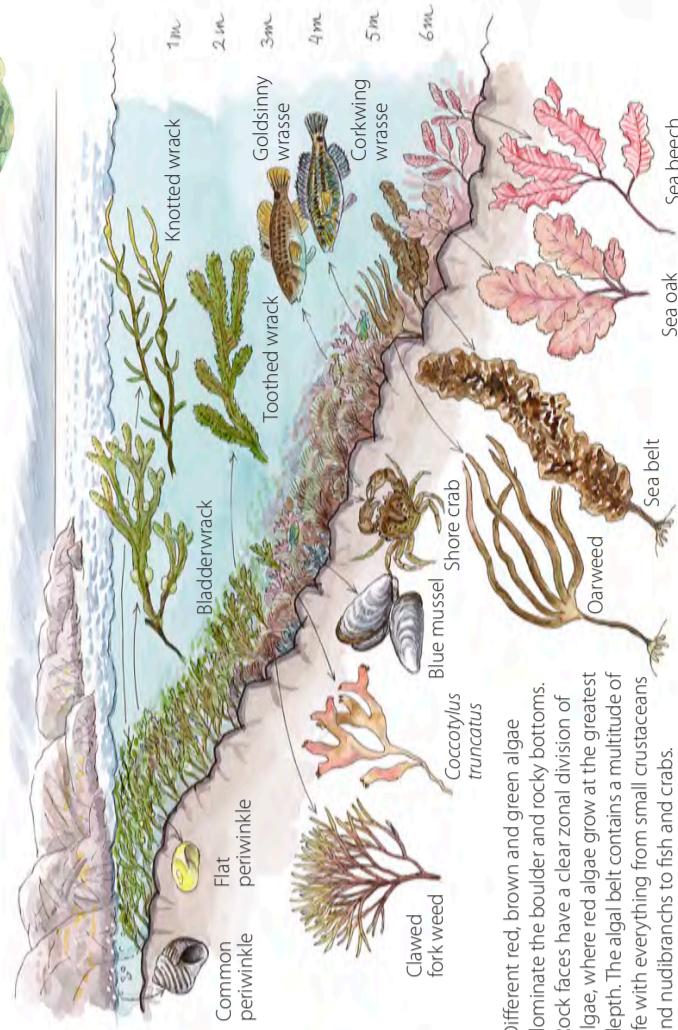
Under the surface

The aquatic environments in the reserve are dominated by shallow bottoms, but there are also trenches that are 30 metres deep. Extensive eelgrass meadows stretch across the shallow clay and sandy bottoms. The eelgrass is accompanied by spiral ditchgrass, beaked tasselweed and other aquatic plants. The billowing underwater beds are home to a range of organisms such as shrimps, crabs, bristle worms, molluscs, mussels, brittle stars, starfish and sea urchins. A well-stocked larder for both fish and birds, in other words. The rocky bottoms have a different type of vegetation. Various red, green and brown algae thrive here, such as clawed fork weed, toothed wrack and sea belt. Here too, you find a rich underwater fauna.



Eelgrass meadows offer protection for fry and small fish. The billowing eelgrass is a hiding place for well-camouflaged fish, such as broadnose pipefish. Its elongated snout reveals that it is related to seahorses!

Broadnose pipefish



Different red, brown and green algae dominate the boulder and rocky bottoms. Rock faces have a clear zonal division of algae, where red algae grow at the greatest depth. The algal belt contains a multitude of life with everything from small crustaceans and nudibranchs to fish and crabs.