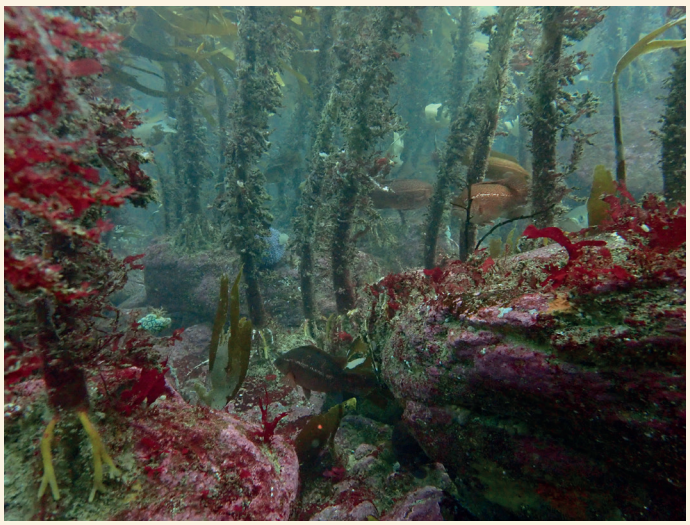
GENERAL INFORMATION ABOUT THE SEAWEED TRADITIONNALLY HARVESTED ON THE SHORES OF BRITTANY

Seaweed is an underwater vegetable which, contrary to plants, has no stem, no leaves and no roots. Its anatomy includes a holdfast, a stipe and blades, forming altogether a thallus. Seaweed grips to a base, like a rock, and uses photosynthesis to grow. It extracts nutrients and CO2 directly from the sea water, absorbs light thanks to chlorophyll and then expulses oxygen.
The ocean generates two thirds of the oxygen in the atmosphere thanks to macro and microalgae, more commonly called seaweed.



Natural maritime park of Iroise

The natural maritime park of Iroise spreads over an area of 3,500 km^2, the equivalent of half the Finistère department. Having a perimeter this large allows to include all the socio-economical activities that interact with the biodiversity of the Iroise sea in an ongoing reflexion on the balance between humankind and the sea. This park showcases the second largest laminaria forest in Europe. The existence of this forest is the result of a natural phenomenon called a thermal front : a bubble of cold water, rich in nutrients and necessary to the survival of seaweed in the Iroise sea, especially during the warm seasons.

Since its creation, the park aims to map, study and protect this rich maritime ecosystem. At the moment, an observation program called OBSLAMIR is underway. Its goal is to study the consequences of perturbations, such as global changes, on the developement and growth of laminaria in the Iroise sea.

LAMINARIA

In the Iroise sea, the harvest of seaweed ranks first out of the fishing activities in term of volume brought to shore with 31,000 tons of laminaria harvested in 2023. Lanildut's harbour is the first haven of seaweed trade in Europe.
Laminaria, that can be described as big brown seaweed, forms large underwater forests that constitute remarquable habitats for a great number of underwater animals and plants.
Its exploitation is controlled by a system of licenses handed out by fishing comities that oversee the activity of the goémoniers, the name given to the fishermen that are specialised in seaweed harvest. This leads to a close collaboration between scientifics and professionals to find the best way to manage this ressource.

The different uses of laminaria

Traditionally used as fertiliser or fuel, laminaria has been harvested in the Iroise sea since the 17th century to produce soda for the glass industry. Dried and burned, it is then exploited in the 19th century for the iodine that can be found in it. In this way, it contributes to the progress of medicine and photography at the time. Since the beginning of the 20th century, and even more intensely since the 1960s, laminaria is harvested for the alginates with jellyfying, thickening and stabilising properties that it holds. It is then sold in the form of a white powder and can be found in many industrial products as well as cosmetics and processed food (codes E400 to E405). Today, it has even started being used in the medical field.

TWO MAIN CATEGORIES OF LAMINARIA CAN BE HARVESTED IN THE IROISE SEA

Laminaria digitata, or oarweed, is called « tali » in britain. It can be found in the archipelago of Molène and near the isle of Sein. It is recognisable to its flexible and smooth stipe (a kind of stem). It can live between three and five years and grows from the start of winter to the middle of summer. It grows on rocky underwater soil. Invisible from above the sea most of the time, it can still be seen above water during king tides.

The harvest

Laminaria digitata is harvested from boats, called goémoniers, equipped with one or two steel hooks, called « scoubidou ». Attached to a hydraulic arm, the scoubidou catches laminaria and rips them from the underwater soil. Laminaria digitata is mainly exploited during spring and summer.

Laminaria hyperborea, or kelp, is called « melkarn » or « tali penn » in britain. It is one of the other species of laminaria that can be found in the Iroise sea. Taller and more durable, it can live up to fifteen years and grow up to three meters. It grows during winter and spring.

The harvest

Located at a deeper level of the sea, laminaria hyperborea is harvested with a « comb ».
With a width ranging from 1.5 to 2.85 meters, the comb is dragged on the sea floor and rips the seaweed between its teeth. Laminaria hyperborea is mainly harvested during spring.

SHORE SEAWEED

Shore seaweed is the name given to the seaweed that becomes visible at low tide. Chondrus crispus and Mastocarpus stellatus, more frequently called Pioca or « small goémon » are two kinds of red seaweed commonly found in the Iroise sea. Measuring around ten centimeters, they can change colour with the amount of time that they spend exposed to sunlight.
Palmaria palmata is a red seaweed common in the Iroise sea, it is commercialised under the name Dulse. It grips onto rocks and other seaweed thanks to a small disk at its base. It tastes a little bit like hazelnut and is used in the making of several breads and cakes.

The harvest : The harvesters by foot of the shore seaweed

The gathering of shore seaweed is a very ancient pratice in the Iroise sea. The harvest is done by foot in the foreshore, at low tide. Today, it is a job with legal boundaries ; around ten harvesters are allowed to harvest in the Iroise sea, they have to declare their harvest and must respect some rules : windows for harvest time, height of cut for some seaweed species...

The uses

These two main species of seaweed are used mainly for cooking.
The Dulse is the seaweed favored by chefs, for its aesthetic as well as for the texture and subtil taste it provides depending on the way it is cooked. It is one of three seaweed species that contribute to the success of the seaweed tartare. This edible specie is ideal to introduce someone to the taste and colour of the seaweed cuisine. The Dulse is rich in protein and in minerals, mainly potassium and iron.
The Pioca is traditionnally used by coastal populations of the north of Brittany to cook flans. It acts as a natural jellyfying agent that can replace eggs, while still having an end product that holds its shape. Its jellyfying powers are stronger than the ones of animal sourced gelatin. This vegetal thickening agent is thus an ideal culinary help in the preparation of recipes such as mousses, sauces and desserts (entremet, panna cotta ...). As are all seaweed species, it is rich in nutrients and oligo-elements.

L'ESTRAN, A SEAWEED-HARVESTING BOAT FROM THE ÎLE DE SEIN

The Estran at work

The Estran (the boat's name means foreshore) was built in 1992 in the Tanguy shipyard in Douarnenez for the fisherman boss (patron-pêcheur) Ernest Cariou. Built by Yves Tanguy with the designs done by his father, Jean-Marie Tanguy, it was the second to last boat built before the closure of the shipyard in 1993, before its reopening in 2003 with Yves Tanguy as manager.

Registered in the maritime district of Audierne in 1992, it mainly harvested goémon (a mix of seaweed) around the isle of Sein. This seasonal activity was supplemented by fishing, both with nets and cage traps, as well as the dredging up of shells in the Brest Bay during winter.

The Estran ended its carrier in the harbour of Tréboul. The end of goémon harvesting around the isle of Sein, the owner's retirement, and the plan to reduce the flotilla condemned it to be destroyed. Saved thanks to the donation made by Ernest Cariou, it joined the collections of the Port-musée in 2009.

With a restoration campaign started in 2026, the goal is to present the boat on the water of the Port-musée's boom, and thus be a physical testimony of the jobs that gravitate around the goémon, especially in the less well-known area of the isle of Sein.

Characteristics

First year of use: 1991
Matriculation: AD815532
Length: 9.85 m
Width: 4.13 m
Motorisation: 92 kw
Owner (fisherman boss) : Ernest Cariou

The flotilla of goémoniers (boats used to harvest the goémon) working in the area of the isle of Sein, unloading their harvest in the hold of the Mylène (AD 333228), which will then carry the harvest to the transformation factories. We can see the Estran on the far left. © Pierre Arzel

The goémoniers boats

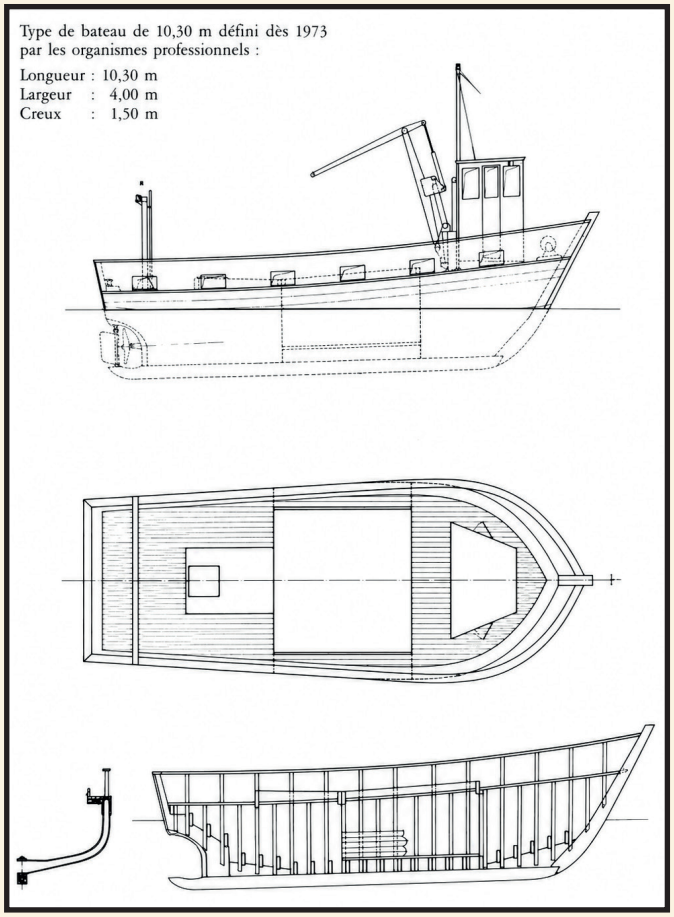
The Estran is a goémonier ship, mechanised with a crane on the back cabin. Despite belonging to a later generation of the goémonière fleet, it fully belongs to the tradition of wooden naval construction.

The goémon harvest has long been a side business for the coastal population. Lots of different types of boats were used. But as time went on, from the beginning of the 20th century, a specific type of boat emerged. The smaller ones used oars, while the bigger ones, from 6 to 7 m, were rigged like a sloop.

The motorisation of the goémoniers started late, in the 1950s, and from there they progressively lost their rigging. The true revolution took place at the end of the 1960s with the first cranes and hydraulic 'scoubidous.' Mechanising the harvest transformed the work of the goémoniers and rendered boats inadequate.

Between 1971 and 1984, the traditional hand-operated flotilla slowly disappeared. The old boats were modernised, then completely replaced. The professional organization sought to modernize the flotilla by creating reference boats of 10.3 m, and then of 12 m.

Thus the modern goémonier was created, well represented in the Estran, with its squat silhouette, its stocky shape and its strong build.



The Frère et Soeurs (BR 7605), was mechanised in 1972. This photograph is a testimony of the crossroad between two worlds: mechanisation made its way onto the boat, leaving behind the rigging in favour of the crane and the hydraulic scoubidou. But traditional elements persist, the unloading is still done by horse, with a stretcher and a wagon.