

Traditional eel fishing on Røsnæs and in the Kattegat region, Denmark

(Based on the essay "Åletøj og Røsnæsdragter" – copyright Lisbeth Pedersen - printed in the periodical Jul i Kalundborg 1992)

By Lisbeth Pedersen

Eel fishing and sheep farming provided farmers on Røsnæs with supplementary income in the late 18th and 19th century. They invested some of this surplus in clothing and with that created the economic foundations for a unique female costume tradition for which Røsnæs is renowned. Røsnæs costumes are today one of the cornerstones of the Kalundborg Museum's collections.

Eel fishing does not, however, feature anywhere in the museum's exhibitions. This situation will be rectified in the following, because the museum also has a number of artefacts and records which, together with recent ethnological studies, can reveal how this niche activity was undertaken.

The eels were caught in so-called *ålegårde* – eel weirs – which were large, post-built structures with woven wattle panels that were fitted close together. These structures were constructed so they extended out into the fjord from the coast, forming a barrier that deflected the stream or shoal of eels into the eel pot, which was attached at the outer end on the structure. In addition to being called *ålegårde* in Danish, these structures were also known as *åletøj* or *landtøj* (-tøj, old Danish word for tool or implement, often a number of these used in conjunction).

The museum's collections also include a model of one of these eel weirs. It was made in 1945 by fisher Ebbe Larsen from Ulstrup, who was 75 years of age at the time. It shows how eel weirs were built during his childhood in the 1880s. Another fisher, Peter Hildebrandt from Røsnæs, has also described, in the journal for Denmark's fishing association of 1894, how eel fishing on Røsnæs developed through the second half of the 19th century.

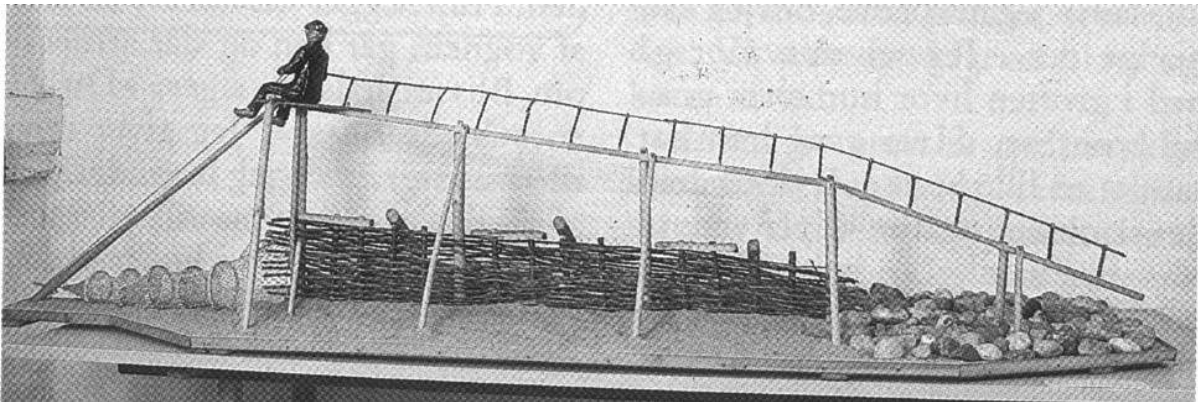


Figure 1. Ebbe Larsen's scale model (1:6) of the caisson-like eel weir from Røsnæs. The fisher sits on the so-called potfjæl (old Danish word for the board at the end of the weir superstructure), while the eel trap is being emptied. He is wearing clothes typical of the time around 1865. All the eel weirs along the south coast of Røsnæs had their catching side, shown here facing the reader, to the east, towards Kalundborg Inderfjord, in order to catch eels as they were finding their way back to their migration routes in the Kattegat region. Photo: Per Christensen.

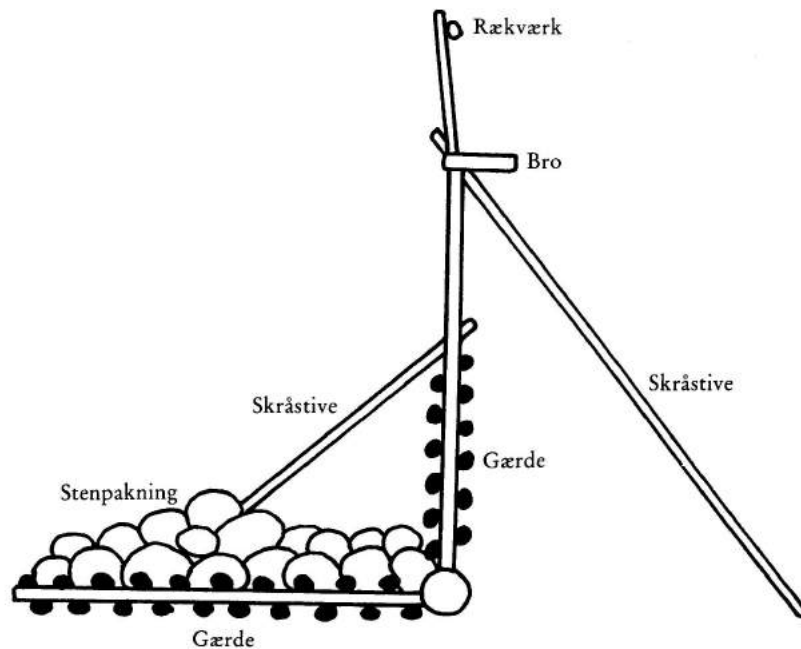


Figure 2. Cross-section of a section of an eel weir. Each winter, all components that could be reused were taken ashore. The eel weirs were rebuilt each spring and the fishing places carefully cleared of stones, so the horizontal mats could be laid out completely flush with the seabed. Drawing: Kurt Petersen.

Stenpakning = Stone packing

Gærde = Wattle panel

Skråstive = Brace

Bro = Gangway

Rækværk = Railing

Fishing was exclusively for silver eels, and up into the 20th century this form of fishery was undertaken in Denmark using two types of eel weir. There were caisson-like eel weirs, as on Røsnæs, and bottom-anchored fish weirs, as employed in the more sheltered coastal or inner Danish waters, for example in the south Funen archipelago and the fjords of eastern Jutland and southern Zealand. The bottom-anchored eel weirs were of slighter construction, with bottom posts hammered down into the seabed in closely-spaced pairs. Wattle panels were wedged between the paired posts. A lath or batten was also bound to the top of these posts so the fisher could manoeuvre himself out to the eel pot without getting his feet wet.

The caisson eel weirs were employed on the open and exposed coasts of the Kattegat region and in the northern part of the Great Belt, including on Røsnæs, Asnæs and Reersø. These were solid structures with both vertical and horizontal wattle panels made from woven hazel rods, mortised into thick beams. These fishing structures were made in sections on land. They were then pushed out and sunk at the fishing places. They were weighted down with heaps of stones that were placed on the horizontal panels so they were held tightly flush with the seabed. The fishing structures were further secured with sloping buttress posts

or braces, which also supported a gangway. This meant that the fishers could reach the outer eel pot to empty it without getting their feet wet or using a boat.

In both types of eel weir, it was very important that the wattle panels were erected in continuation of one another with tightly-fitting crossed joints, so they fitted closely to the seabed and made eel-proof fences that prevented the eels from escaping through or under the structure. The surface of the panels had also to be completely smooth and even so they did not catch and accumulate seaweed, which could block the passage of the eels into the trap. Similarly, it was important that the structures did not break the surface of the water so that drifting seaweed was able to float over them.

The caisson eel weirs in the Kattegat region were all constructed according to the same basic principles, but they varied in their details, and there were often very different terms for the individual components from area to area. Even the Røsnæs and Asnæs peninsulas, lying only 4-6 km apart across Kalundborg Fjord, had different names for the various elements of these eel weirs.

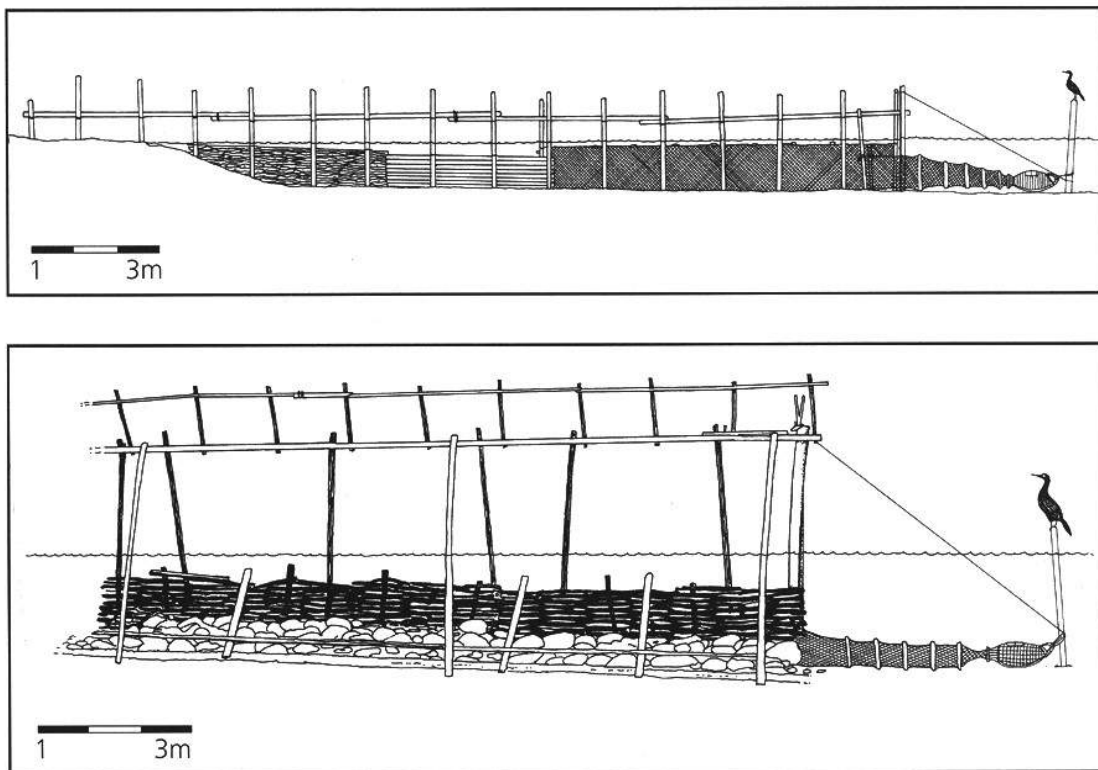


Figure 3. Sketches showing the construction of a caisson eel weir (upper) and a bottom-anchored eel weir (lower).

The caisson eel weir is seen from the side that faced east, in the case of those stretching out from the south coast of Røsnæs, and it was partially covered with stones in order to weigh down the horizontal wattle panels on to the seabed.

The sketch of the bottom-anchored eel weir, also seen from the side, shows the different materials that have, over time, been used to make the vertical panels. Out by the actual eel trap there is modern fish netting, while in the middle of the weir boards have been used, as was the practice in the 19th century

before the use of netting became fully established. Closest to land the ancient technique of woven wattle panels is shown. These panels were wedged between the bottom posts that were rammed down close together in pairs. This is evident on the lower sketch which gives a bird's-eye view of a bottom-anchored eel weir. Drawing: Kurt Petersen.

Large quantities of materials were required to build the caisson eel weirs. Each section was 12-14 *alen*, i.e. approximately 8 m, in length and it was common to have four to five sections, extending out to a water depth of 8-9 feet, i.e. c. 3 m. As much timber was often required to construct a caisson eel weir as was needed to build a small half-timbered house. From Helgenæs on the Djursland peninsula, where the farmers built their caisson eel weirs in a very similar way to those on Røsnæs and Asnæs, we know that, every year, each eel-weir owner needed one to two loads of beech or alder rods for bottom posts and one to two loads of hazel rods for wattle panels. The fisher-farmers were therefore very careful to take components that could be used the following year ashore before the storms and ice movements of winter began in earnest.

At times, it was a problem to obtain sufficient building materials for the eel weirs, as illustrated here by examples from Røsnæs and Asnæs in the Kalundborg area. An enclosure agreement in 1796 secured peasants in the village of Ulstrup a piece of land where they could develop and manage a vigorous understory, a coppice, in order to produce materials for their eel weirs. It is also known that fishers from Røsnæs and Asnæs later obtained materials from as far inland as Løjtved and Jyderup, located more than 20 km from the fishing places.

Then, as now, silver-eel fishing was best in dark and stormy weather. It took place during the dark nights, around new moon, from August to November. During this period, the eels migrate especially at night through Danish waters, on their way to the Sargasso Sea, thousands of nautical miles away, in order to breed. This migration appears to take place across a broad front. As a consequence, many stretches of Danish coast act as barriers that the eels have to negotiate. To do this, the eels tend to follow the coast, and this is also what happens around the Røsnæs and Asnæs peninsulas.

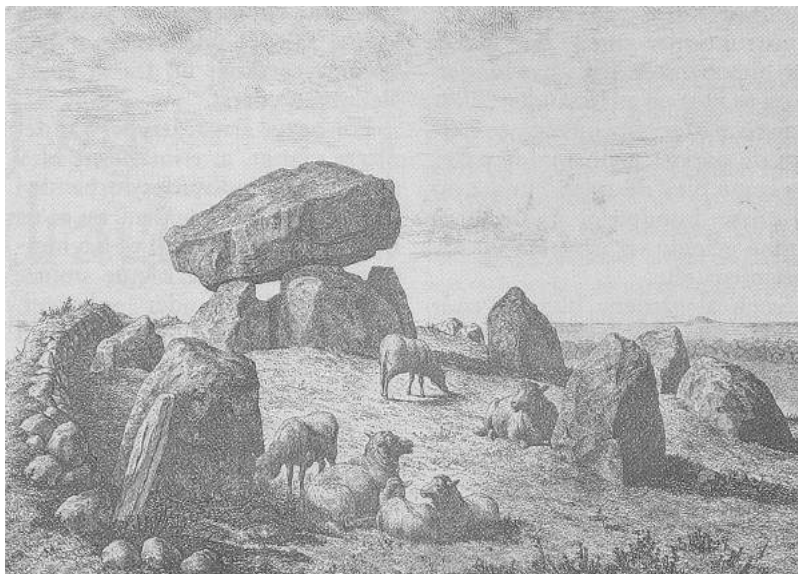


Figure 4. Sheep farming was, like eel fishing, a niche production that provided the farmers on Røsnæs with extra income. Grazing sheep also feature on many of the landscapes of Røsnæs that were painted and

drawn in the 19th century. Sheep leave an open, short-cropped and barren landscape, as seen here at the Nyrup dolmen, as drawn by the artist A.P. Madsen in 1868.

In 1894, fisher Peter Hildebrandt gives an account of how, during severe stormy autumn weather, the eels entered Kalundborg Fjord in large numbers from the west; there were also good catches when the wind was in the north or south. Best of all was when the current flowed in the same direction as the wind, so large numbers of eels were washed and swirled into the fjord. When the eels then followed, for example the south coast of Røsnæs to leave the fjord again, they were halted by the eel weirs (as shown in the above figure) and led out into the eel pots by the rows of wattle panels. There were often large catches in all the eel weirs, even when these stood close together. Eels that were led in behind a fish weir were then caught in the weirs that stood further on in the direction of travel, i.e. to the west on the south coast of Røsnæs.

According to Hildebrandt, the smallest eels were caught in the first dark nights around new moon at the end of August. At that time, there were four to five eels to the pound. In the next dark period, the eels were rather bigger, with about two to three eels to the pound, while in the final dark period, the eels were largest and weighed on average $\frac{3}{4}$ pound each.

Hildebrandt's information was based on a lifetime of experience as a fisher. It was not until the early 20th century that the mystery of the eels' movements through Danish waters, heading for the Sargasso Sea, thousands of nautical miles away, was solved. What Hildebrandt could not have known back then was that it is the small male eels that migrate first out of Danish waters. They are smaller than the females and take longer to travel the many nautical miles to the Sargasso Sea.

A considerable investment of materials, time and effort was required to build these fishing structures. They also stood for long periods in fixed locations and thereby hindered other movements along the coast.

The private right of ownership of the stationary coastal eel traps also gave rise to conflicts all across Denmark over the years. Further problems arose with the Fisheries Act of 1888, which opened up fishing in Danish waters to all citizens of the realm. The many stationary structures along the coast now became a hindrance to other forms of fishing by the coast and for ship and boat movements.



Figure 5. The tradition and technology of fishing with fish weirs were developed more than 5000 years ago. Here is a woven wattle panel and a multitude of bottom post and stakes (marked with white labels on

bamboo sticks) from the first and, so far, oldest structure that has been almost fully excavated in Denmark (status 1992). It has been dated to c. 3250 BC and was excavated in 1998 at Halskov by Kalundborg Museum. A similar, slightly later structure was excavated jointly by the museum and the Danish Nature Agency, now the Danish Agency for Culture and Palaces, off the southwestern tip of Nekselø. Length of ranging rod: 2 m. Photo: Lisbeth Pedersen.



Figure 6. Fisher Tyge Olsen from Asnæs Sønderstrand still knows how to build a gangway like on the old eel weirs. The structure here is, however, only used to hang a hose on. Boats, motors and structures with pound nets, like those seen in the background, have in the course of the last century completely broken with thousand-year-old practices. Photo: Anders Fischer.

In 1867, the first fishers from Kalundborg began to set out free-standing eel traps with leaders by the tip of the Røsnæs peninsula. These were constructed in almost the same way as the stationary eel weirs, but nets had replaced the wattle panels and these were suspended from a row of poles. Later, other commercial fishermen followed suit in using free-standing eel traps, including Peter Hildebrandt and his brother Thomas. They also developed new methods of setting up the free-standing traps, which brought them catches of twice the normal size for this kind of fishing.

Around 1874, the fisher-farmers on Røsnæs also began to set out free-standing eel traps, in addition to their stationary structures. By then, the railway had also reached Kalundborg and with it came swift transport and efficient marketing possibilities and good money for fresh eels for the fisher-farmers on Røsnæs, for example in Copenhagen. Eel drifters from Kiel also bought up a good number of eels.

Eel-weir rights were finally abolished in 1956, when the state expropriated the private right of ownership, with payment of compensation. By this time, the eel-weir rights had become an anachronistic exception to the general freedom that prevailed on fishing grounds on the open sea.

The art of building large wattle-panelled eel weirs has now more or less been forgotten. Most of the eel fishing that is registered today is undertaken as pound netting. Eel fishing with pound nets was first introduced in the 20th century, thereby making a decisive break with the more than 5000-year-old tradition of building coastal eel weirs with bottom posts, woven wattle panels, traps and eel pots.

Translated in 2016 by:

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