

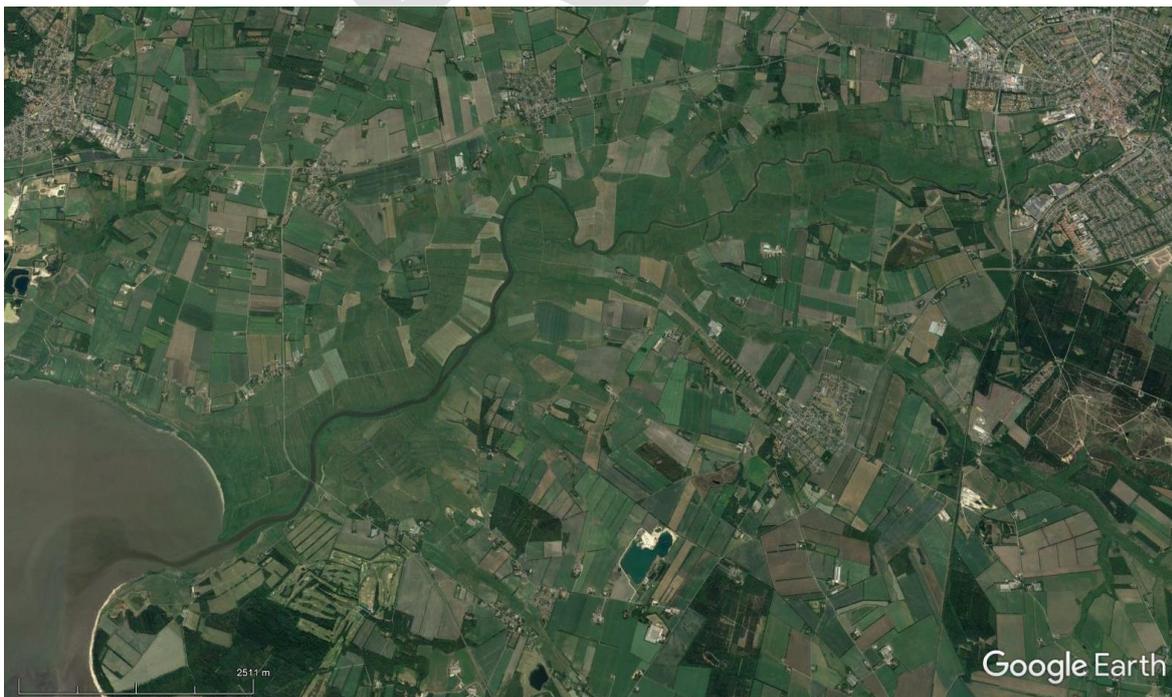
Landward solutions Varde Å



The Varde Å is a river in open connection to the Wadden Sea in Jutland, Denmark, which has been restored and renatured. The Varde is the only major tidal river in Denmark whose outlet is not regulated with dykes and sluice gates. As a result, the river remains under the influence of natural forces. Tides in the Ho Bugt bay affect both water level and flow rate far upriver. The opening of a river to the sea is a possibility to trap fine-grained mud in the mouth of the river.



With a length of approximately 40 kilometers it is the third longest watercourse in Denmark. Its catchment area is 1,088 square kilometers. The river flows through the municipalities of Varde and Esbjerg, forming the boundary between them along parts of its course. The river empties into Ho Bugt bay, north of Esbjerg. The Varde Å estuary is supplied with material from two sources: the drainage area itself and the turbidity maximum in the N-part of Ho Bugt. The first supplies bed load and suspended material, whereas the latter supplies fine-grained, flocculated material only.



Varde A between the Ho Bugt Wadden Sea and Varde (upper corner left), situation 2006

Situation 1990

Approximately 300 meters downstream of the confluence of the Grindsted and the Ansager, 90% of the river's flow was diverted in 1945 by a weir into the Ansager Canal. The canal led to a reservoir, Lake Karlsgårde, to be used for hydroelectric power generation by the Karlsgårde Hydroelectric Plant. In the 1950s, the section of the river between Hessel and Nørholm was dredged and straightened. Originally 10 kilometers long, with 35 bends, this stretch was reduced in length to a straight channel 5–6 kilometers long with four concrete sections. Since 2006, the plant operator, Sydvest Energi, has given up its rights to dam and divert watercourses in the Varde drainage. The plant was completely closed down by the end of 2015. In its lower reaches the Holme river wind past the estate of Nørholm, and at Sig, past Sig Fiskeri, one of the largest fish farms in Denmark. The fish farm draws water from the river, because the owner believes the groundwater contains too much iron oxide. The Holme then flows into the Varde, bringing with it the water from Lake Karlsgårde.

Restoration

A large part of the straightening of the river has been reversed beginning in 2009 in a land restoration project supported by the Actions for Houting project of the European Union LIFE Programme. The Varde Å now flows past Hodde, bypassing the reservoir, which is now fed only by the Holme river.

The lower river valley, west of Varde, was previously under intensive cultivation. Beginning in 1994/95, farmers have modified their practices, no longer using fertiliser and keeping vegetation cut, which it is hoped in association with the higher water table will restore habitat for birds, in particular the endangered corncrake. In 1997–2002 more than 250 voluntarily signed 20-year agreements under Operation Engsnarre (Operation Corncrake), also supported by the EU LIFE Programme.

The Varde River is home to many species of fish, including brown trout, grayling, pike, houting, salmon and sea trout, which attract many sport anglers. Fishing in the river is managed by the Grindsted Sportsfiskerforening (sport fishing association), Varde Sportsfiskerforening and Sydvestjysk (South-west Jutland) Sportsfiskerforening. The river is also the only habitat in Denmark of the freshwater pearl mussel. The Varde River together with the lower reaches of the Ansager and the Grindsted has been designated an EU Special Area of Conservation. The designation also covers most of the existing lowlands in the river valley. In the designation, the houting and the freshwater pearl mussel were identified as priority species; especial weight is to be given to fulfilment of provisions relating to their habitat.

The Varde A area is nowadays presenting them as an area offering exciting nature, rich in flora and fauna where one can enjoy long walks, canoeing or fishing. Canoeing is possible over a large stretch of the area from Varde to the Nordholm Gods and Sig Fiskeri. As for fishing, the stream houses river trout, pike and grayling and in recent years, the stock of salmon and sea trout has increased considerably. The EU has appointed Varde Å as an important habitat for inter alia pearl-producing river mussels and houting. It is not only the many different species in the water that make Varde Å an interesting area. The bird life around the stream is also very exciting and the many footpaths, bridges and observation towers of the area contribute to a fun experience for bird lovers in the beautiful area around Varde Å.

Discussion Points

The open nature of the Varde A allows for estuarine circulation patterns to bring in fines from the open Wadden Sea. This is an approach which has led to a major impulse for the whole area with large participation of farmers.

Literature

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Houting project: <https://www.youtube.com/watch?v=YJ0J6a9kva0>