

INTRODUCTION TO THE HO BUGT AREA

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The bay Ho Bugt is the northernmost part of the European wadden sea, to the E bounded by old glacial deposits and to the N and W by saltmarsh deposits, see fig. 1. The western saltmarsh is part of the peninsula Skallingen which is the northernmost barriere island of the wadden sea. This peninsula is a relatively young formation which not until the diking in 1930 offered an effective sheltering against the North Sea.

Formerly, the western coastline of this area went from Grærup, via Gjedbjerg to the dune-marsh island Langli. The proximal part of the old peninsula Langli was later flooded, and the subsequent formation, Skallingen, divided Ho Bugt into two tidal areas: one bounded by Skallingen, the Langli ebb-road and Langli, and the other made up by the rest of the bay. The two tidal areas are connected with the North Sea by two separate inlets, Hobo Dyb and Hjerting Løb.

Today Ho Bugt is a 12 km long and 4 km broad estuary with its length axis orientated NNW-SSE; it covers roughly an area of 57km² with semi-diurnal tides. The average tidal range is about 1.3 m, ranging from 1,6 m at spring tide to 1.1 m at neap tide; the average tidal prism is about 70 mio. m³.

When reaching the northernmost part of the bay the tidal wave has diminished in range a few per cent only, but already 1 km upstream the river Varde Å a diminishing of roughly 30% has taken place.

During the last part of the postglacial transgression the sedimentation kept pace with the rising sea level, and a bar was formed outside the river mouth. This formation represents the transition zone between two estuarine systems: the Varde Å estuary and the Ho Bugt estuary. The main difference between these systems is that only the latter is influenced by lateral inhomogeneities.

The catchment area belonging to Varde Å is 1055 m²; the precipitation distributes with highest values in the eastern part of the area, near the N-S going watershed through Jutland which follows the main stationary line from the last glaciation. At an average, the catchment area receives an annual precipitation of 750 mm which gives rise to an average water discharge at the river mouth of about 13 m³/sec., ranging from 100-5 m³/sec. The freshwater run-off from the Varde Å drainage basin represents almost all the freshwater supplied to Ho Bay.

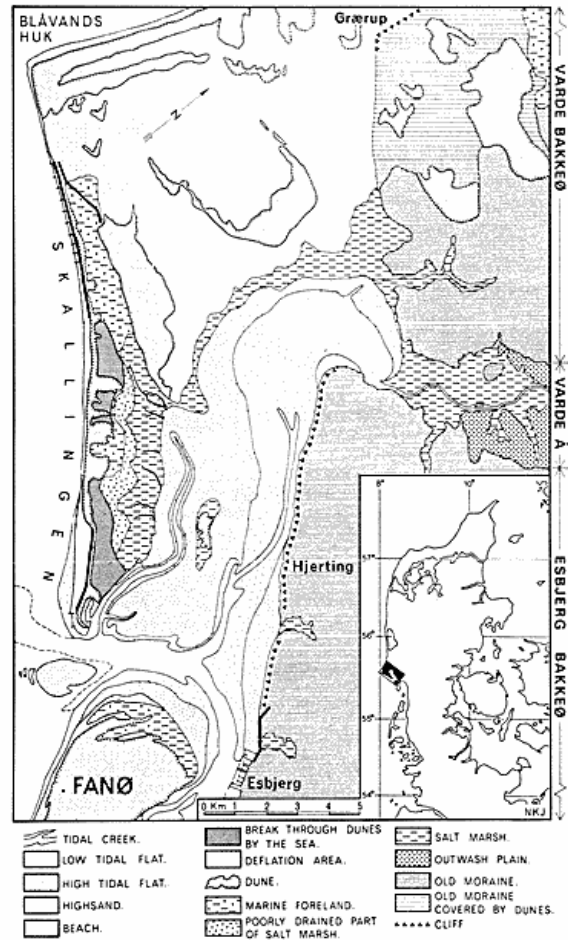


Fig. 1.: Geomorphological map of the area.
Fig. 1: Geomorfologisk kort over området.

The catchment area is covered by 5-30 m thick quaternary deposits, mainly consisting of till from Saale and glaciofluvial deposits from the Weichel ice age. Moreover, there are several inland dunes in the area formed during late Pleistocene and early Holocene. The prequaternary surface consists of micaceous sand and clay from Miocene, apart from the SW-part of the area where ferruginous sandstone, presumably from Pliocene, has been found.