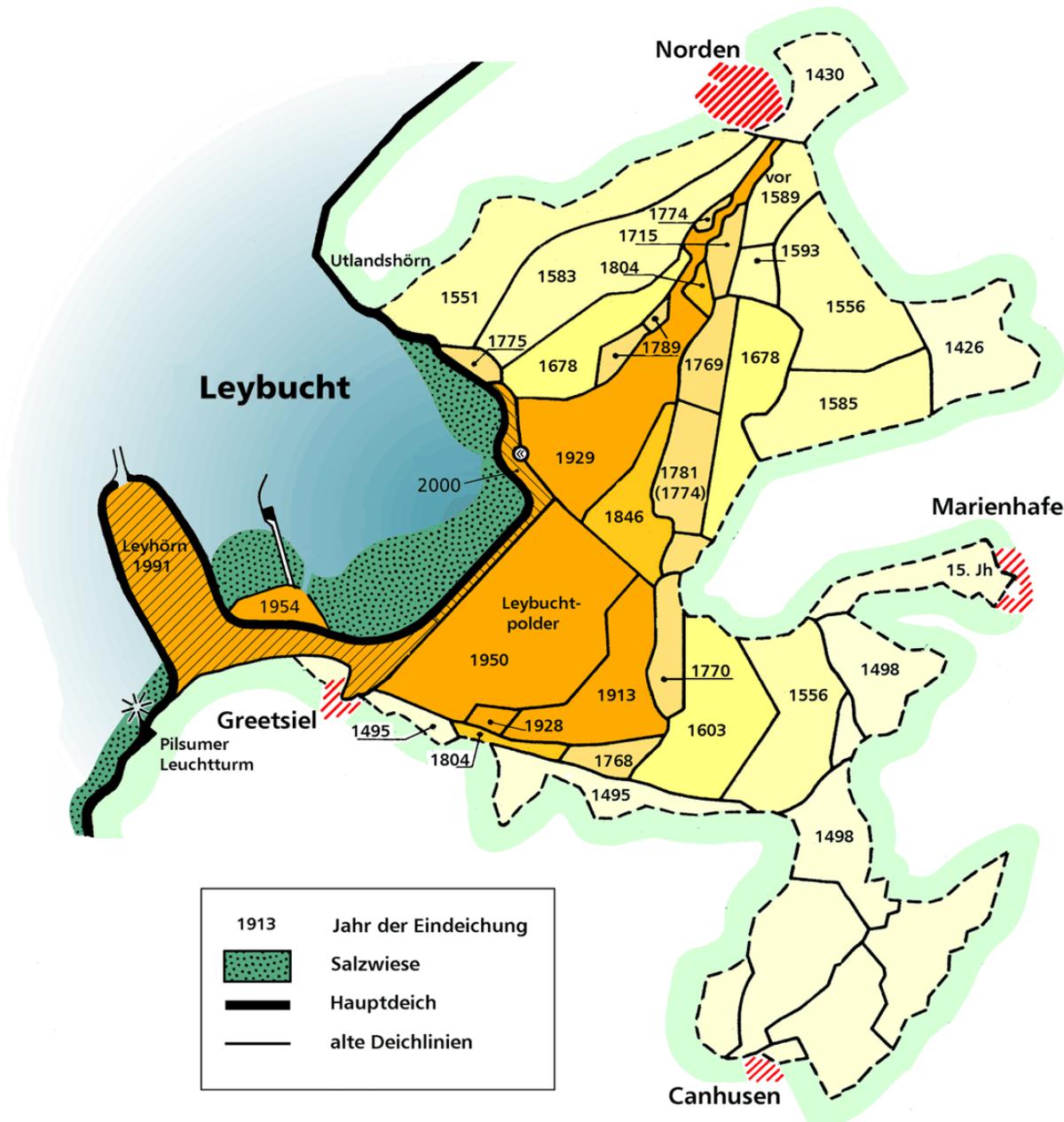


Seaward Solution Factsheet Leybucht



The Leybucht has formed due to flooding of the mainland. Thereafter strong sedimentation of fines resulted in a rapid silting up and poldering of the area. It is thus a great example of strong mud deposition capabilities in the Wadden Sea area.

With an area of about 28 km², the Leybucht is the third largest bay in Niedersachsen after the Jade Bight and the Dollard embayment. The area consists of 30 ha subtidal area, 1800 ha tidal flats, 690 ha tidal marshes and 280 ha summer polders. It is situated between the port of Greetsiel and Norddeich, about 18 kilometers north of Emden. The Leybucht was probably formed during the storm surge of 26 December 838. Later storm surges such as those of 1374 and 1376 enlarged the bay to its maximum extent with an area of 130 km², stretching from Greetsiel in the west to Marienhaf in the east and Canhusen in the south. In the following centuries, mud sedimentation led to heightening so that areas could be poldered.

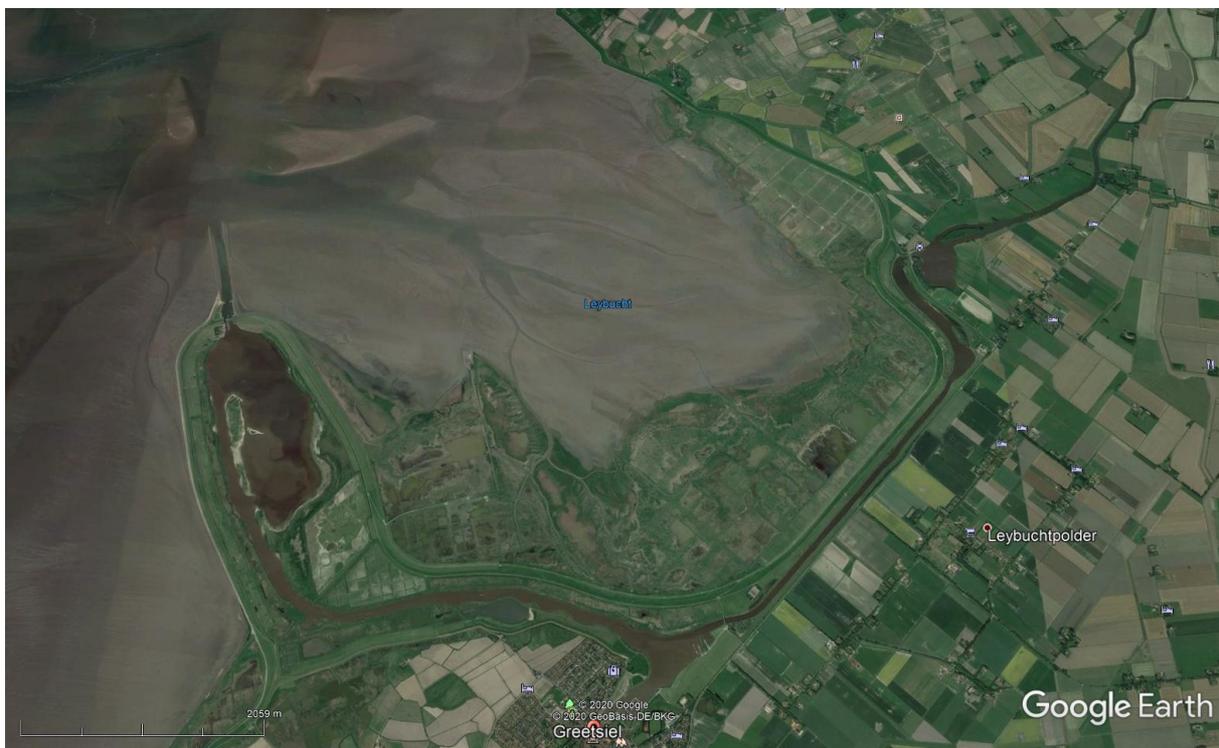


By 1950 the bay had been reduced strongly by the construction of the Störtebeker dyke, which enclosed the Leybucht Polder and straightened the coast line. Although there were plans in the following years to reclaim the entire bay in order to shorten the line of dykes significantly and to improve coastal protection, these ideas were rejected on nature conservation grounds. In March 1984, an amended plan was submitted in order to reconcile requirements of coastal protection, nature conservation, drainage requirements and the village of Greetsiel. Already at the beginning of the planning there was a lot of resistance from nature conservation associations and Leybucht residents against this construction project, but - probably because of the extensive information - there were relatively few complaints. In total some 740 hectares of the Ramsar site would be affected. To reinforce the dyke system the first preparations began in October 1985 to build the New Störtebeker Dyke. It was completed in October 2000, and was built in front of the old dyke. A large part of the salt marshes could thus be saved, but some 100 ha were lost. In 1991 the Leyhörn was reclaimed. In 1994 the 650 ha Leyhörn became a nature reserve. As compensation for about 130 hectares of salt marshes which were enclosed in the Leyhörn, the summer polder Hauener Hooge has been opened to the old Greetsieler Aussen Tief. About 80 hectares of the previous area can develop back into salt marshes due to the renewed tidal influence.

Since 25th June 1976 the area was protected as a Ramsar Site. As of the start of 1986 the Leybucht got special protection by Lower Saxony as part of the national park „Niedersächsisches Wattenmeer“. In July 1989, the Ramsar Bureau received a document from WWF Germany, indicating that the operations at the Leybucht violated both the Ramsar Convention and the EC Bird Directive. Ramsar Bureau made the following recommendations:

(a) The future dyke line along the Störtebeker Deich should not enclose any existing areas of saltmarsh.
(b) Compensation measures for the 740 hectares affected by construction of the “nose” should include at least:

- establishment of a legal nature reserve over the whole area outside the dyke;
- establishment of a nature reserve covering the whole area inside the dyke;
- breaking down of the Sommerdeich in two places, within Leybucht and beyond Norddeich.



Leybucht area

By 1990 WWF Germany had complained to the European Commission. The Commission considered the complaint justified and forwarded it to the European Court. The Court ruled that Member States are only allowed to decrease an area of special designated protection zones if there are extraordinary reasons in the general public interest which exceeds the environmental interests. Economic and recreative interests are not qualifying.

Research

Knaack & Niemeyer (2004) looked into the changes for the period between 1960 and 1999. The major morphodynamical change was from a two-gully system into a single tidal gully. The intake area below mean high water in the Bay decreased by 40 % from 1960 to 1999, due to the silting up in the inner parts of the bay. Ongoing silting up is expected as a dynamical equilibrium has not yet been reached.

Lessons learned

The economic development of such bay-areas is difficult without influencing the great natural values. The jurisprudence of the EU indicates that basically it is forbidden to decrease the areal extent of a designated nature area. Furthermore, the ongoing infill of the Leybucht suggests that the changes may have furthered mud sedimentation. Due to the process natural values are reduced which is not recommendable. Such long-term effects should be considered when large-scale measures are undertaken.

Stakeholder process

A vivid discussion between the EU, NLWKN and nature conservation associations such as WWF and the local community clearly has led to some jurisprudence giving stronger direction to future initiatives.

Discussion points

In general, the approach to see the special designated protection zones of the Wadden area as a commons which can be used to further economic and touristic development by reducing its surface area appears to be a no-go. Reversely it may be asked if managed realignment for economic and touristic development would be allowable, since -if the scale is sufficiently large- also in that way, long-term morphological developments might be triggered.

Literature

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