

ECORD Summer School 2012

North Sea Field Trip

Saturday 8th September

08:00	Bus pick up near hostel
08:20	Bus pick up at MARUM
08:20-10:00	Drive to Ems Barrier
10:00	Break with food & refreshments
10:30-12:00	Guided tour of the Ems tidal barrier
12:00-13:30	Drive to Dangast
13:30-14:15	Lunch break in Dangast
14:15-15:45	Visit in relation to Wadden Sea dynamics & coastal protection
15:45-16:20	Drive to Kleinensiel (just before Wesertunnel)
16:20-16:40	Estuarine processes along the Weser
16:40-17:30	Drive to Bremen
17:30	Stop at MARUM
17:45	Stop near hostel

1. Ems tidal barrier

The Ems barrier is a major water management structure at the lower Ems near Emden. It was built between 1998 and 2002, has an overall length of structure 476 metres with seven flow openings and the distance between both sides is 1040 metres. The tidal barrier has two functions. First, it improves the storm surge protection on the river Ems because its height of 3.70 metres above sea level ensures a much higher level of protection than the main dikes along the lower Ems. From December 2005 to March 2008, the barrier was closed seven times due to storm surges.

Second, the storage function of the barrage ensures the flexibility of the shipping lane Ems between Papenburg and Emden and thus the preservation of the economic power of the region. The maximum water level of 2.70 meters above mean sea level allows the transfer of vessels with a draft of up to 8.50 meters and a length of up to 300 metres.

2. Wadden Sea dynamics and coastal protection

The Wadden Sea is the intertidal zone situated between the coast of northwestern continental Europe (the Netherlands, Germany and Denmark) and the range of Frisian Islands, forming a shallow body of water with tidal flats and wetlands. It is rich in biological diversity and belongs to the UNESCO's World Heritage List. The Wadden Sea is one of the world's seas whose coastline has been most modified by humans via systems of dikes and causeways on the mainland and low lying coastal islands. The Jade Bay (German: Jadebusen) is a large intertidal bay about 180 km² in area that is part of the Wadden Sea. It was largely created by storm floods during the 12th and 16th centuries and since the early sixteenth century a number of dikes were built against the floods and to preserve arable land. We will stop at Dangast for lunch and will then walk along the beach and dykes. The formation of the Jade Bay will be explained and the salt marshes observed. The height of notable storms will be seen and the use of dykes will be described.

3 Estuarine processes along the Weser

A final stop along the Weser will allow us to have a closer look at estuarine processes.

!!!Weather on the North Sea Coast is unpredictable, have warm clothes with you!!!