

## Flint

### Greetings from Scandinavia

Witness from the North Sea  
as it was 150,000 years ago

During the Saale ice age about 150,000 years ago the glaciers moved huge amounts of stones and boulders from Scandinavia in a southwestern direction.

Flintstones were eroded from their original place by the ice and carried away with the moving glacier.

Where the glacier melted, the stones were deposited.



## Fossil Carpet Shell

### Victim of the ice

Witness from the North Sea  
as it was 120,000 years ago

About 120,000 years ago, during the Eemian interglacial warm period, the fossil carpet shell occurred in the North Sea. It is similar to the present carpet shell, but more triangular.

When the North Sea fell dry during the following Weichselian ice age, the fossil carpet shell became extinct.



## Mammoth's Bone

### Walking from Denmark to England

Witness from the North Sea  
as it was 45,000 years ago

During the Weichselian ice age large parts of the North Sea basin fell dry. Wild horses grazed on the vast plains between Denmark and England.

Mammoths, reindeer and woolly rhinoceroses also lived on the tundra of today's North Sea floor.



## Arrowhead

### Huntsman's greetings from the Stone Age

Witness from the North Sea  
as it was 12,000 years ago

Arrowheads prove the presence of Stone Age hunters in the North Sea basin's tundra.

Weapons of stone, bone, antlers and wood facilitated the hunt for big mammals even as large as the mammoth.



Until today, numerous stones can be found on the Wadden Sea coast that were created during the different aeons in Scandinavia.



Today, shells of the fossil carpet shell can occasionally be found on the beach. Especially where sand supplementation takes place, they are washed ashore with the sand from the deeper North Sea floor.



Bones like this of a Przewalski-horse are still found by fishermen today. Sometimes even an entire tusk of a mammoth is caught.



At the end of the ice age, as the climate changed the landscape changed and hunters wiped out the woolly rhinoceros, mammoth and cave bear. Reindeer and wild horses retreated to the North and East and survived.

## Amber

### Resin turns into North Sea gold

Witness from the North Sea  
as it was 9,000 years ago

Amber developed about 50 million years ago from the resin of coniferous trees in today's southern Sweden.

Rivers brought the young amber southwards to Lithuania, where it remained 45 million years. Then, glaciers moved the amber as far south as Berlin.



## Sphagnum Moss

### Water built up at the Geest's rim

Witness from the North Sea  
as it was 6,000 years ago

The long chain of sandbanks that had developed along the coast slowed down the drainage of water from the mainland. Freshwater built up behind the dune islands and vast peat bogs developed.

After several thousand years, the bogs were reached by the continuously rising sea level and covered with marine sediments.



## Cockle

### Hurrah, the tidal flats are here!

Witness from the North Sea  
as it was 1,500 years ago

About 1,500 years ago, the again rising sea level flooded the former peat bogs behind the chain of islands.

Between the dune islands and the main land marine sediments were deposited with every flood and tidal flats developed.



## Frisian Salt

### White gold from the Wadden Sea

Witness from the North Sea  
as it was 700 years ago

About 650 years ago large parts of the coastal marshes were inhabited. One of the most profitable economic activities was the extraction of salt from peat.

The clay covered, sea water soaked peat was extracted and burned. The remaining ashes contained about 25 times more salt than the sea water.



The melt water currents at the end of the ice age washed it via the Elbe river into the North Sea.  
During heavy storms, amber is washed ashore from the North Sea floor and deposited in the driftline, often together with parts of black peat.



Layers of peat from these bogs are still the last remaining coastal bog. It gives the "swimming bog" in the Jade Bay is an impression of the former landscape.



Marine animals like cockles and lug mark the "habitat noticed at a second rhythm of the tides and henceforth onto the tidal flats, adapted to the worms migrated from the North Sea



With the intensive exploitation of peat the Frisians dug their own grave. Thousands of people drowned during the "First Great Drowning of Men" in 1362. This happened not only because of high floodwaters but because they themselves had lowered the land that was only poorly protected by dikes.

# Sandbag

## Embank or back off!

Witness from the North Sea  
as it was 400 years ago

While being protected by further advanced dikes, cattle trade and agriculture flourished and brought wealth to the inhabitants of the fertile coastal marshes. At the beginning of the 17<sup>th</sup> century, however, pest and wars reduced the population and the maintenance of the dikes suffered.



# Tape Measure

## The measure of coastal protection

Witness from the North Sea  
as it was in 1992

Since the “Second Drowning of Men” much land has been reclaimed by continuously improving coastal protection measures and there have been no more dike breaches since 1962.

Today’s coastal protection in Schleswig-Holstein uses the coastline of 1992 as its reference base. Sand supplementation, brushwood



In 1634 the “Second Great Drowning of Men” destroyed many dikes and totally disrupted or tore apart the area around the islands and Hallig islands. Those who did not succeed in rebuilding the dikes had to leave the land. Many farmers from today’s island of Nordstrand were expropriated after the Second Drowning and the duke settled experienced Dutch dike constructors instead. Until the end of the 19<sup>th</sup> century the sermon was held in Dutch and even today there is an “Old Catholic” community on the island of Nordstrand just as in the Netherlands.



fences and strengthening of dikes hold the coastline at this stage. New land is no longer reclaimed. Every square metre of new land for human use would mean the loss of one square metre of tidalflat. Today because the Wadden Sea is a World Heritage Site and National Park it is been decided to maintain and protect this area in its entirety.