Natural sea-level indicators recording the fluctuations of the mean high tide level in the southern North Sea, Germany

R. Pott, H. Streif & H. Freund

Due to coastal erosion on the seaward side of the East Friesian Islands, horizons of subfossil tidal flat and salt marshes are exposed which embrace the time span of the last 2000 yrs. These deposits are natural sea-level indicators. By the use of palaeoecological techniques it has been possible to reconstruct tidal fluctuations.

Facies analysis
(sedimentology, geochemistry, pollen- and diatom analysis, macroremains)

Botanical macro remains

Although salt marshes look uniformly flat, there are recognizable differences which find expression in vegetation zoning. This zoning reflects frequency and duration of inundation and soil salinity.

On the basis of facies analysis and radiocarbon dates, patterns of sea-level fluctuations were reconstructed for the southern North Sea.

Reconstruction of sea-level fluctuations in the southern North Sea (Germany)

Minimum
Maximum
Best estimate

Due to coastal erosion on the seaward side of the East Friesian Islands, horizons of subfossil tidal flat and salt marshes are exposed which embrace the time span of the last 2000 yrs. These deposits are natural sea-level indicators. By the use of palaeoecological techniques it has been possible to reconstruct tidal fluctuations.

Facies analysis
(sedimentology, geochemistry, pollen- and diatom analysis, macroremains)

Botanical macro remains

Although salt marshes look uniformly flat, there are recognizable differences which find expression in vegetation zoning. This zoning reflects frequency and duration of inundation and soil salinity.

On the basis of facies analysis and radiocarbon dates, patterns of sea-level fluctuations were reconstructed for the southern North Sea.

Reconstruction of sea-level fluctuations in the southern North Sea (Germany)

Minimum
Maximum
Best estimate

Due to coastal erosion on the seaward side of the East Friesian Islands, horizons of subfossil tidal flat and salt marshes are exposed which embrace the time span of the last 2000 yrs. These deposits are natural sea-level indicators. By the use of palaeoecological techniques it has been possible to reconstruct tidal fluctuations.

Facies analysis
(sedimentology, geochemistry, pollen- and diatom analysis, macroremains)

Botanical macro remains

Although salt marshes look uniformly flat, there are recognizable differences which find expression in vegetation zoning. This zoning reflects frequency and duration of inundation and soil salinity.

On the basis of facies analysis and radiocarbon dates, patterns of sea-level fluctuations were reconstructed for the southern North Sea.

Reconstruction of sea-level fluctuations in the southern North Sea (Germany)

Minimum
Maximum
Best estimate

Due to coastal erosion on the seaward side of the East Friesian Islands, horizons of subfossil tidal flat and salt marshes are exposed which embrace the time span of the last 2000 yrs. These deposits are natural sea-level indicators. By the use of palaeoecological techniques it has been possible to reconstruct tidal fluctuations.

Facies analysis
(sedimentology, geochemistry, pollen- and diatom analysis, macroremains)

Botanical macro remains

Although salt marshes look uniformly flat, there are recognizable differences which find expression in vegetation zoning. This zoning reflects frequency and duration of inundation and soil salinity.

On the basis of facies analysis and radiocarbon dates, patterns of sea-level fluctuations were reconstructed for the southern North Sea.

Reconstruction of sea-level fluctuations in the southern North Sea (Germany)

Minimum
Maximum
Best estimate

Due to coastal erosion on the seaward side of the East Friesian Islands, horizons of subfossil tidal flat and salt marshes are exposed which embrace the time span of the last 2000 yrs. These deposits are natural sea-level indicators. By the use of palaeoecological techniques it has been possible to reconstruct tidal fluctuations.

Facies analysis
(sedimentology, geochemistry, pollen- and diatom analysis, macroremains)

Botanical macro remains

Although salt marshes look uniformly flat, there are recognizable differences which find expression in vegetation zoning. This zoning reflects frequency and duration of inundation and soil salinity.

On the basis of facies analysis and radiocarbon dates, patterns of sea-level fluctuations were reconstructed for the southern North Sea.

Reconstruction of sea-level fluctuations in the southern North Sea (Germany)

Minimum
Maximum
Best estimate

Due to coastal erosion on the seaward side of the East Friesian Islands, horizons of subfossil tidal flat and salt marshes are exposed which embrace the time span of the last 2000 yrs. These deposits are natural sea-level indicators. By the use of palaeoecological techniques it has been possible to reconstruct tidal fluctuations.

Facies analysis
(sedimentology, geochemistry, pollen- and diatom analysis, macroremains)

Botanical macro remains

Although salt marshes look uniformly flat, there are recognizable differences which find expression in vegetation zoning. This zoning reflects frequency and duration of inundation and soil salinity.

On the basis of facies analysis and radiocarbon dates, patterns of sea-level fluctuations were reconstructed for the southern North Sea.

Reconstruction of sea-level fluctuations in the southern North Sea (Germany)

Minimum
Maximum
Best estimate

Due to coastal erosion on the seaward side of the East Friesian Islands, horizons of subfossil tidal flat and salt marshes are exposed which embrace the time span of the last 2000 yrs. These deposits are natural sea-level indicators. By the use of palaeoecological techniques it has been possible to reconstruct tidal fluctuations.

Facies analysis
(sedimentology, geochemistry, pollen- and diatom analysis, macroremains)

Botanical macro remains

Although salt marshes look uniformly flat, there are recognizable differences which find expression in vegetation zoning. This zoning reflects frequency and duration of inundation and soil salinity.

On the basis of facies analysis and radiocarbon dates, patterns of sea-level fluctuations were reconstructed for the southern North Sea.

Reconstruction of sea-level fluctuations in the southern North Sea (Germany)

Minimum
Maximum
Best estimate

Due to coastal erosion on the seaward side of the East Friesian Islands, horizons of subfossil tidal flat and salt marshes are exposed which embrace the time span of the last 2000 yrs. These deposits are natural sea-level indicators. By the use of palaeoecological techniques it has been possible to reconstruct tidal fluctuations.

Facies analysis
(sedimentology, geochemistry, pollen- and diatom analysis, macroremains)

Botanical macro remains

Although salt marshes look uniformly flat, there are recognizable differences which find expression in vegetation zoning. This zoning reflects frequency and duration of inundation and soil salinity.

On the basis of facies analysis and radiocarbon dates, patterns of sea-level fluctuations were reconstructed for the southern North Sea.

Reconstruction of sea-level fluctuations in the southern North Sea (Germany)

Minimum
Maximum
Best estimate

Due to coastal erosion on the seaward side of the East Friesian Islands, horizons of subfossil tidal flat and salt marshes are exposed which embrace the time span of the last 2000 yrs. These deposits are natural sea-level indicators. By the use of palaeoecological techniques it has been possible to reconstruct tidal fluctuations.

Facies analysis
(sedimentology, geochemistry, pollen- and diatom analysis, macroremains)

Botanical macro remains

Although salt marshes look uniformly flat, there are recognizable differences which find expression in vegetation zoning. This zoning reflects frequency and duration of inundation and soil salinity.

On the basis of facies analysis and radiocarbon dates, patterns of sea-level fluctuations were reconstructed for the southern North Sea.

Reconstruction of sea-level fluctuations in the southern North Sea (Germany)

Minimum
Maximum
Best estimate