## Tidal, diel and lunar changes in estuarine marsh nekton

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The utilisation of a brackish estuarine marsh by nekton was investigated over a lunar cycle in August 1994. The nekton migrating in and out of the intertidal creeks of the marsh 'Het Verdronken Land van Saeftinghe' in the Westerschelde estuary, SW Netherlands, was sampled passively during seven complete tidal cycles. Sampling one tidal cycle yielded three consecutive flood samples and four consecutive ebb samples. Sampling occasions, occurring every two to three days, covering all diel and lunar situations allowed comparing tidal, diel and lunar influences on the composition of the intertidal nekton fauna.

Two different tidal migration modes were observed. The mysid shrimp *Mesopodopsis slabberi* showed maximum abundance around high tide. For the remaining common nekton species: the mysid *Neomysis integer*, the shrimps *Palaemonetes varians*, the amphipod *Corophium volutator*, the crab *Carcinus maenas* and the goby *Pomatoschistus microps*, highest densities were recorded during lower water heights. The fauna assemblage shifts clearly between the different tidal stages. The total amount of detritus was found to be the most important parameter structuring the assemblages.

On two occasions consecutive day and night samples were taken. Total densities were clearly higher during night samples. During full moon a clear difference in community composition was noticed between the night and the day samples. During neap tide, differences between day and night were less clear.

No clear correlation was found between water height and total nekton densities. Except for the two most abundant species *Mesopodopsis slabberi* and *Neomysis integer* of which recorded averages were higher during spring tide and lower during neap tide. A clear shift in community composition was observed between the spring tide and the neap tide with water height as the main environmental factor.