

Patterns and prevalence of marine fish diseases and parasites

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Prevalence data of fish diseases and parasitic infections on wild marine fish were collected on the Belgian Part of the North Sea during the years 1996-2011. The assessment of prevalence focused on externally visible diseases and parasites of the body, skin, gill and fins. In addition to the externally visible diseases, tissue related diseases were evaluated. Therefore, livers were excised and inspected for the occurrence of visible tumours and other external diseases. The assessment of fish diseases was based on guidelines recommended by ICES (Bucke *et al.*, 1996).

In accordance with other national and international monitoring programmes, the wild marine flatfish dab (*Limanda limanda*) was used as sentinel species as it is sediment-inhabiting and abundant. In our study, biological effect monitoring of fish diseases was extended to the pelagic round fish species whiting (*Merlangius merlangus*). Dab and whiting were caught during sampling campaigns with the RV Belgica, using standardised fishing methods. Both species were sampled at different locations of the Belgian Part of the North Sea and pooled into two areas: coastal and offshore area. For dab, this study mainly focused on the prevalence of epidermal papilloma, *Glugea sp.*, *Acanthochondria sp.*, *Stephanostomum sp.*, whereas for whiting the occurrence of *Cryptocotyle sp.*, *Clavella sp.*, *Lernaecocera sp.* was investigated.

Long-term data on fish diseases are used to detect prevalence trends, which can be applied as an indicator for the marine environmental health status. As it is problematic to define background levels or environmental assessment criteria for the examination of fish diseases, long-term prevalence data could be implemented as a guideline. Long-term prevalence data of parasitic infections showed undulating prevalence patterns over the years.

In the present study, temporal and spatial patterns of disease prevalence were quantified during the period 1996-2011, as well as the investigation of possible relationships of fish diseases with the levels of environmental contaminants. Along the Belgian Part of the North Sea, mainly parasitic infections were observed. More severe diseases showed a significant decrease during the last decade.

References

Bucke D., D. Vethaak, T. Lang and S. Mellergaard. 1996. Common diseases and parasites of fish in the North Atlantic: training guide for identification. ICES TIMES 19:1-27.