Mussel dredging: Impact on epifauna in Limfjorden, Denmark

Species composition and population density of epibenthos are described in two areas in Limfjorden, Denmark. Both areas covered both a mussel fishing ground and an area that has been permanently closed for mussel dredging since 1988. Furthermore, mussels were dredged in a part of the mussel fishing grounds in both areas four months before the investigations. The rest of the fishing grounds had not been exploited for at least four years. This study describes the short-term impact (4 mo) and long-term impact (>4 y) of mussel dredging using the permanently closed areas as controls. The data were analyzed by multivariate statistics. In both short-term study areas significant effects of dredging were observed. A number of taxa (sponges, echinoderms, anthozoans, molluscs, crustaceans, and ascidians) had a reduced density or were not observed in fished areas four months after the fishing was ended. In one of the two long-term study areas, significant differences in species composition and density were observed between fished and closed areas, indicating that the fishery may have a long-term impact on the epibenthic community, whereas in the other long-term area no difference was observed between fished and control areas. Significant reductions in the amount of shell debris and gravel were observed in the dredged areas. The impact of the loss of these benthic structural components on ecosystem processes and functions is discussed.

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