

Using Foraminiferal Assemblages to Support Fjords as a Potential Source Region of North Sea Sediments

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Understanding the fossil assemblage of the North Sea is important if we are to distinguish disturbances within the North Sea sediments. It is important to identify these disturbances when dealing with mass bodies of water because disturbances could pose serious threats (i.e. tsunamis) to mankind. The purpose of my research project is to identify and verify the source regions of the fossils from the Rehoboth 13:18 gravity core. We believe there to be a horizon within this core that was deposited by a disturbance in a fjord off the western coast of Norway. This horizon also contains abundant pyrite and a peak in magnetic susceptibility. To determine if this hypothesis is correct we used the foraminifera and diatom microfossils to accumulate information about the sediments. We examined core RE13-18 from the west continental shelf of Norway about 20 kilometers from the shelf. Located in the Norwegian channel it has a water depth of 333 meters. Four benthic foraminiferal species (*Melonis barleeanus*, *Pullenia bulloides*, *Bullimina marginata*, and *Uvigerina peregrina*) constitute 72% of the total assemblage. This is a low diversity assemblage. Foraminifera assemblages from fjords, oxygen minimum zones, and methane vents all exhibit a low diversity of species. As pyrite is not a common constituent of open ocean sediments, fjords are a possible source of the low diversity fossil assemblage. Two minor foraminifera species (*Hyalina balthica* and *Fissurina* sp.) in the assemblage have a shallower water provenance. One species (*Cibicides* sp.) has a deeper water provenance. Their presence is consistent with a transported assemblage.