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Distribution and characteristics of the Triassic sequences in the Barents Sea mega-basin.

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One of the largest delta plains in Earth's history existed in the Barents Sea during the Triassic. It is known that the clastic sediments that filled this basin were sourced from the Uralide Orgeny. Recent studies indicate that the source-areas are more diverse, with one source located in the northern Uralides/Novaya Zemlya, one in Northern Fennoscandia and another in Northern Greenland. Contribution from these sources varied through time.
The subsidence rates were very high in the Barents Sea during the Triassic. Sedimentation rates were particularly high during the Induan, when the largest clastic wedges prograded into the basin. Sedimentation rates were lower during the late Early Triassic and Middle Triassic, when no particular tectonic events took place in the source areas. During the Carnian, sediment supply rates increase and deltas prograded to Svalbard and likely beyond Svalbard. Sediment supply rates during the Late Triassic were not as high as during the Early Triassic, but operated over a longer time and thus has a thickness at the same scale as the Induan succession.
Within the Barents Sea, more than ten third order sequences were mapped delineated by four second order sequences. Regional distribution of sequences varied through time, with different thicknesses and sediment pathways. Our results show variation in sedimentation rates, clinoform geometries and shelf-edge- and shoreline-trajectories. This variation was caused by different forcing factors operating in the source and sink. Information about the large-scale depositional system can potentially increase our understanding of reservoir nature and distribution as well as source rock potential in the basin.