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TITLE: An early footprint of fisheries: Changes for a demersal fish assemblage in the German Bight from 1902?1932 to 1991?2009

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ABSTRACT:

Groundfish survey data from the German Bight from 1902?08, 1919?23, and 1930?1932 and ICES International Bottom Trawl Survey (IBTS) quarter 3 data from 1991 to 2009 were analysed with respect to species frequencies, maximum length, trends in catch-per-unit-effort, species richness parameters (SNR) and presence of large fish (?40), the latter defined as average presence of species per haul with specimens larger than 40 cm given. Four different periods are distinguished: (a) before 1914 with medium commercial CPUE and low landings, ?40 ? 2, high abundance in elasmobranchs and SNR conditions indicating highly diverse assemblages, (b) conditions immediately after 1918 with higher commercial CPUE, recovering landings, ?40 at > 4 in 1919, and SNR conditions indicating highly diverse assemblages, (c) conditions from 1920 to the early 1930's with decreasing commercial CPUE, increased landings, decreasing ?40, SNR conditions similar to later years indicating less diverse assemblages, and a decrease in elasmobranchs. In the IBTS series (d), ?40 remains low indicating an increased rarity of large specimens, and SNR characteristics are similar to the third period. Dab, whiting and grey gurnard have increased considerably in the IBTS series as compared to the historic data. ?40 is suggested an alternative indicator reflecting community functional diversity when weight based indicators cannot be applied.

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