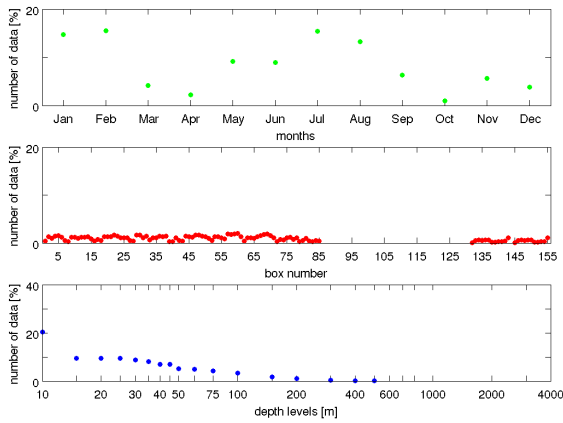
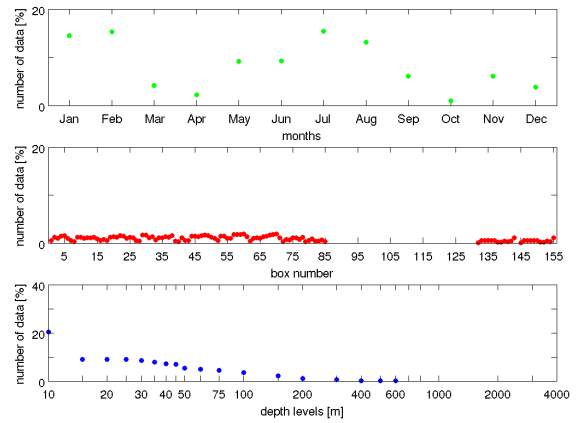


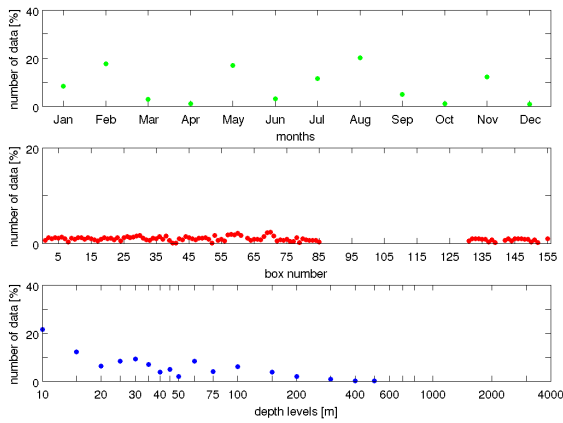
Percentage of total amount of NoD (5537) referring to time, box and depth for Temperature in 9308



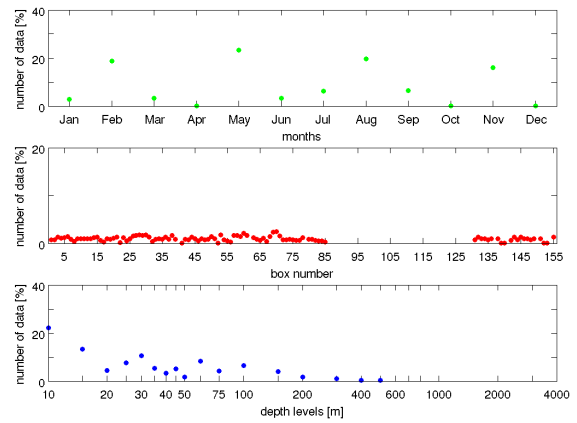
Percentage of total amount of NoD (5740) referring to time, box and depth for Salinity in 9308



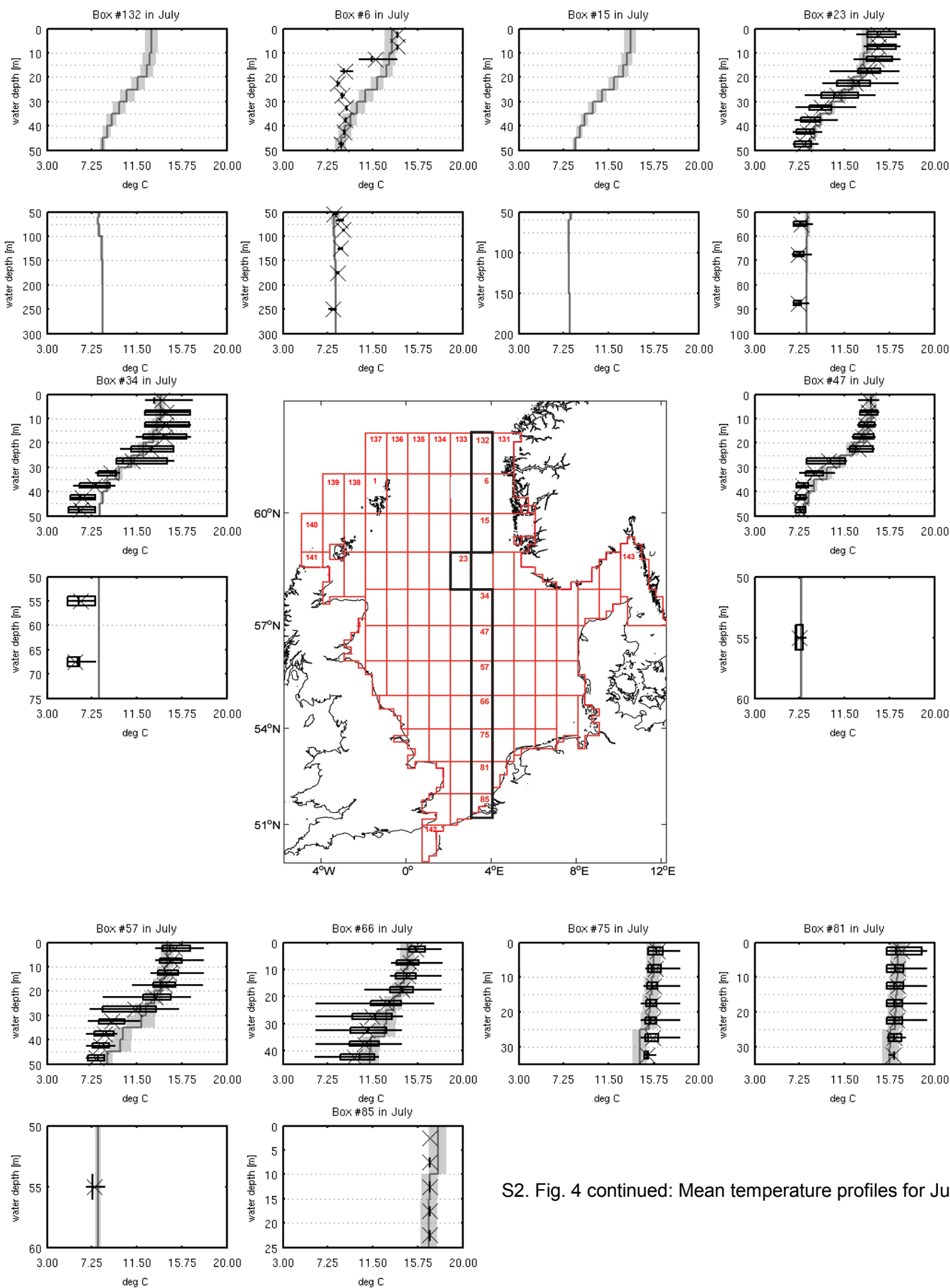
Percentage of total amount of NoD (3529) referring to time, box and depth for Phosphate in 9308

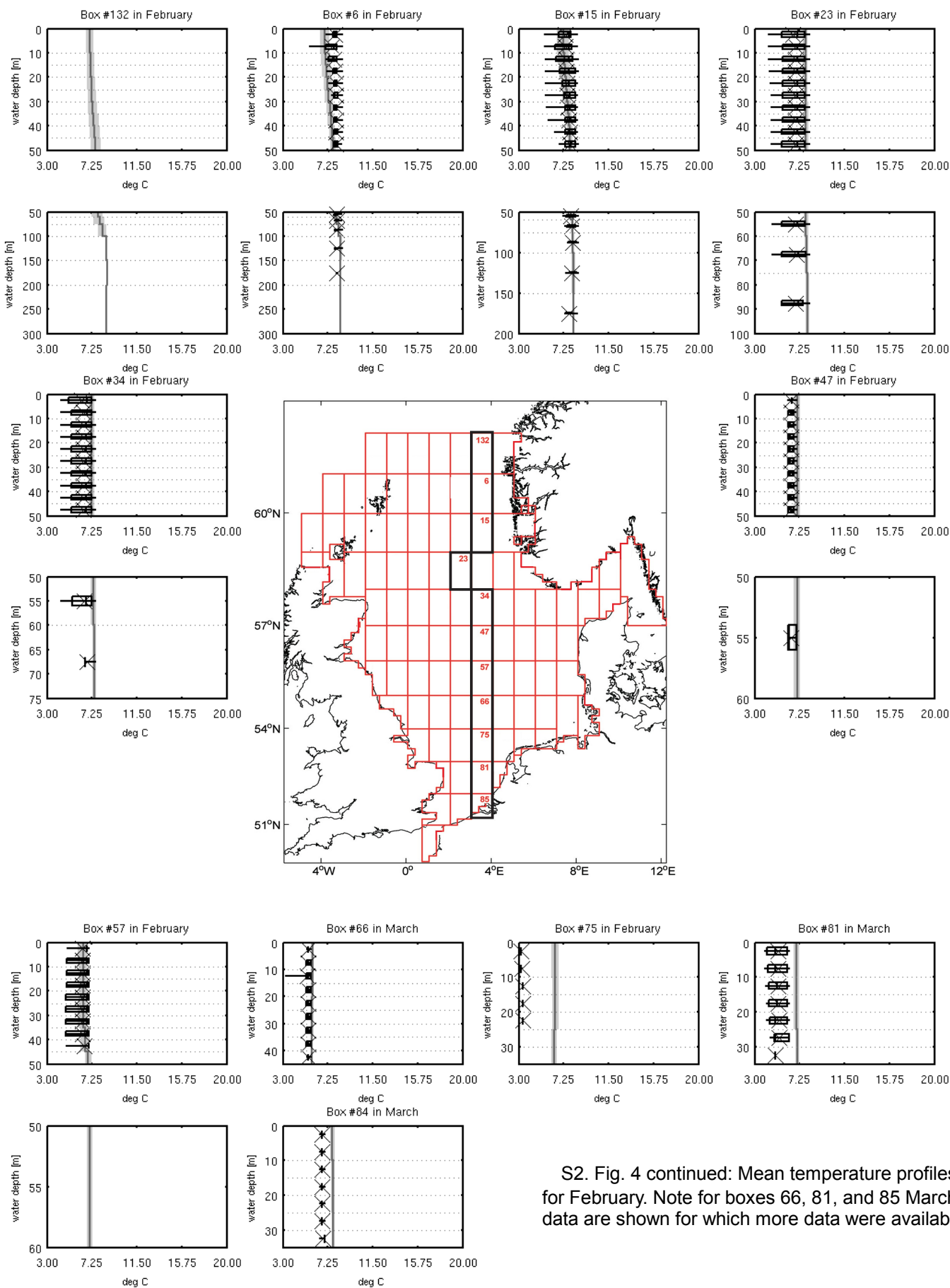


Percentage of total amount of NoD (2536) referring to time, box and depth for Nitrate in 9308

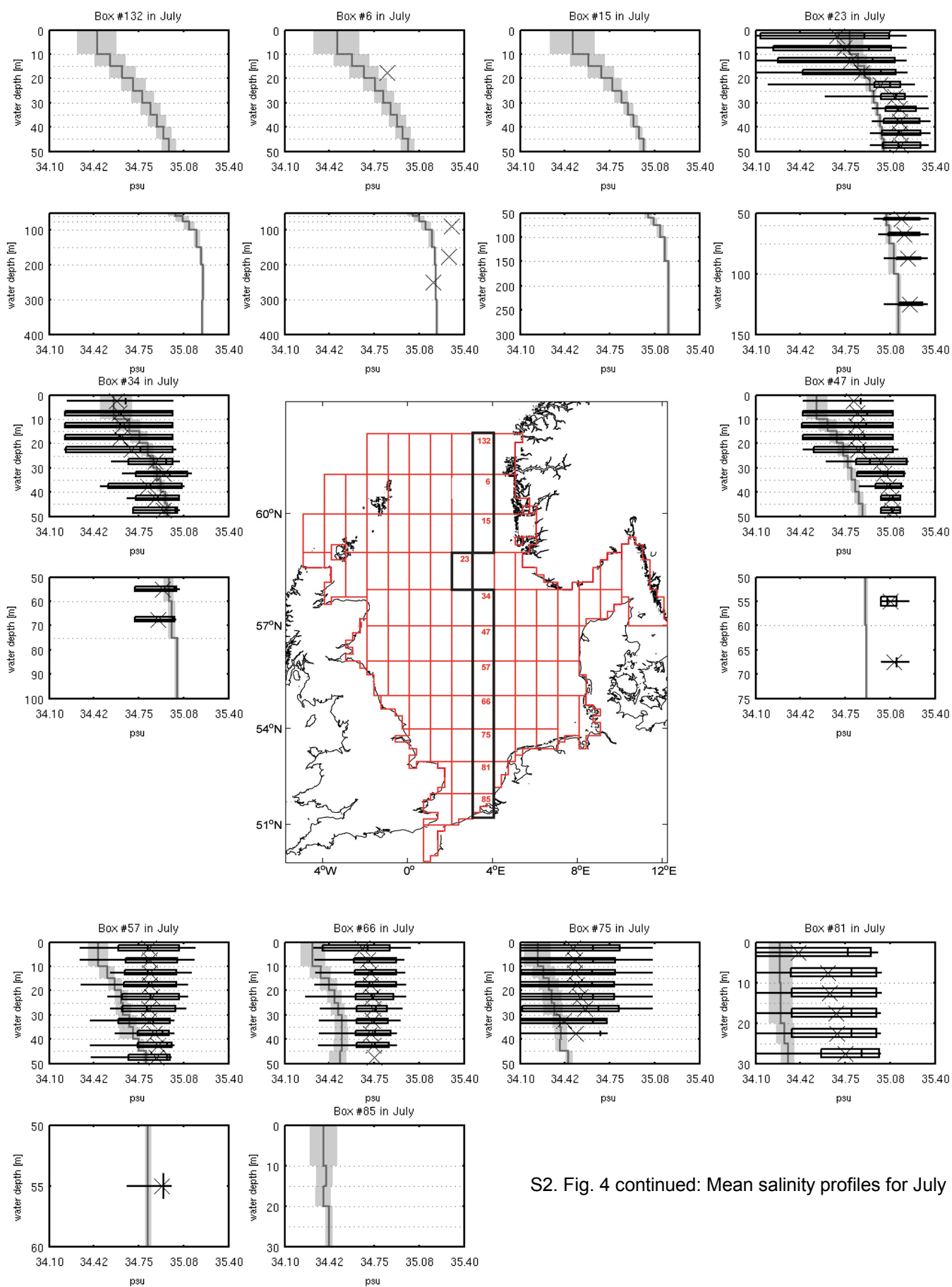


Supplementary material S1. Availability of observational data. Shown is the data distribution throughout the year, depth levels, and boxes defined in Fig. 5. Note: Deep Boxes (>50m) 86-130 are summed up under the corresponding shallow boxes 1 to 85. Also indicated are boxes 131 – 155 outside the North Sea.

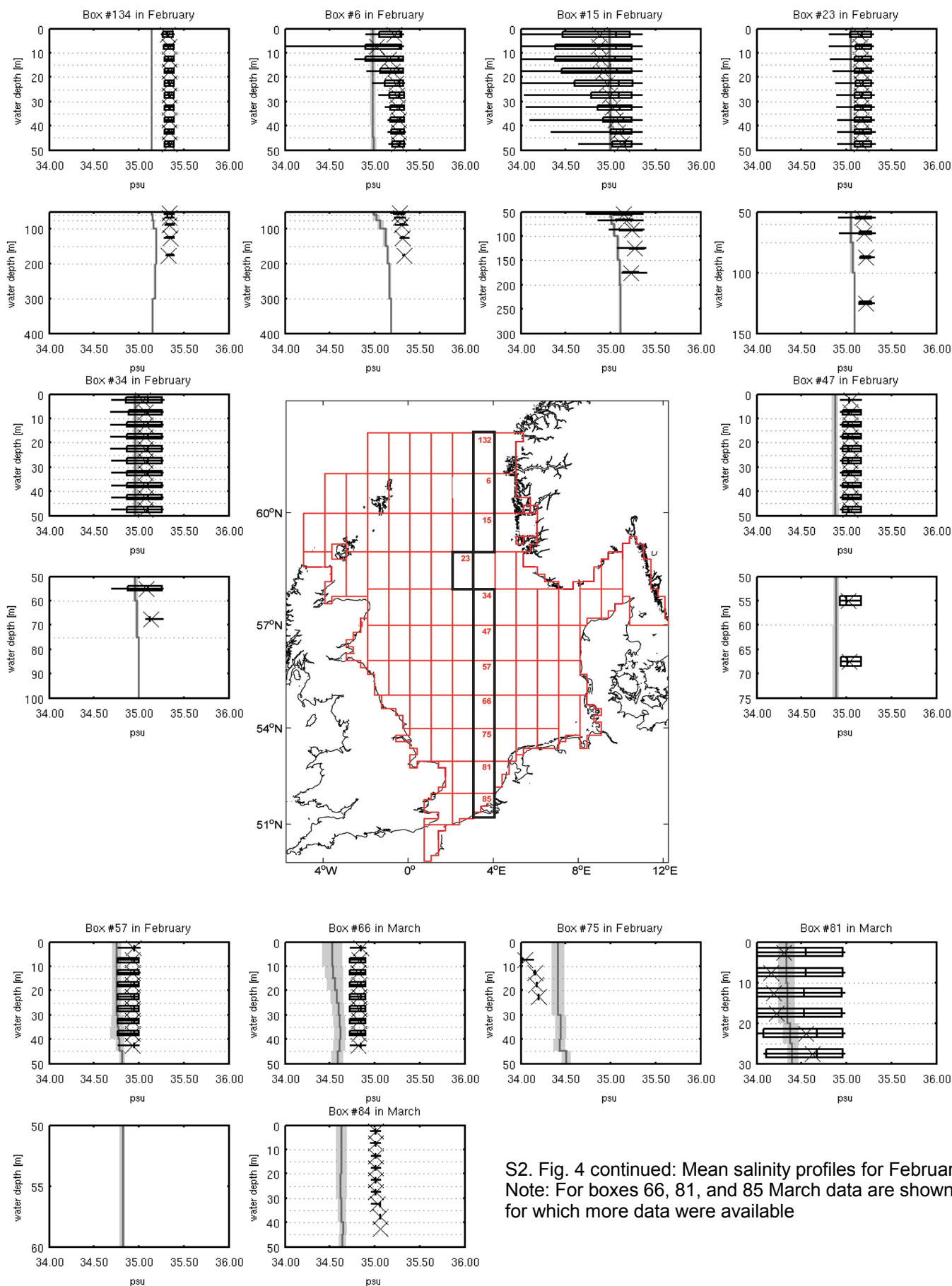




S2. Fig. 4 continued: Mean temperature profiles for February. Note for boxes 66, 81, and 85 March data are shown for which more data were available.



S2. Fig. 4 continued: Mean salinity profiles for July



S2. Fig. 4 continued: Mean salinity profiles for February. Note: For boxes 66, 81, and 85 March data are shown for which more data were available

