

A driftwood-based record of Arctic sea-ice during the last 500 years from northern Svalbard reveals sea ice dynamics in the Arctic Ocean and Arctic peripheral seas

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Introduction

The supplementary information includes four figures to accompany our manuscript. Figure S1 depicts the segment lengths of 59 driftwood samples from northern Svalbard that underwent annual ring width measurements to 1/1000 mm accuracy, using LINTAB tree-ring measurement table and TSAP-Win Professional version 0.89 (Rinn, 2003). Figures S1.1-S1.4 depict the plots of samples cross-dated using TSAP-Win using a variety of parameters to assess correlation between samples. Each plot shows the ascertained best matches for samples collected from the three localities sampled in northern Svalbard – Sjuøyane, Ringhornalden, and Vassfarbukta. Each point represents a sample's best match to a chronology. The colour of each data point displays the associated drainage basin, and the size of the point represents the CDI of the match. The density plots depict the densities of the associated time and

longitude axes, weighted by the CDI of the matches. Dataset S2 includes all best matches for cross-dated TRW measures of each driftwood sample used in the study, including CDI scores and Weighted Scores, with rationale behind match choices. Dataset S3 contains all match distribution plots via the crossdating and matching methodology, with CDI and Weighted Score distribution plots for all samples.

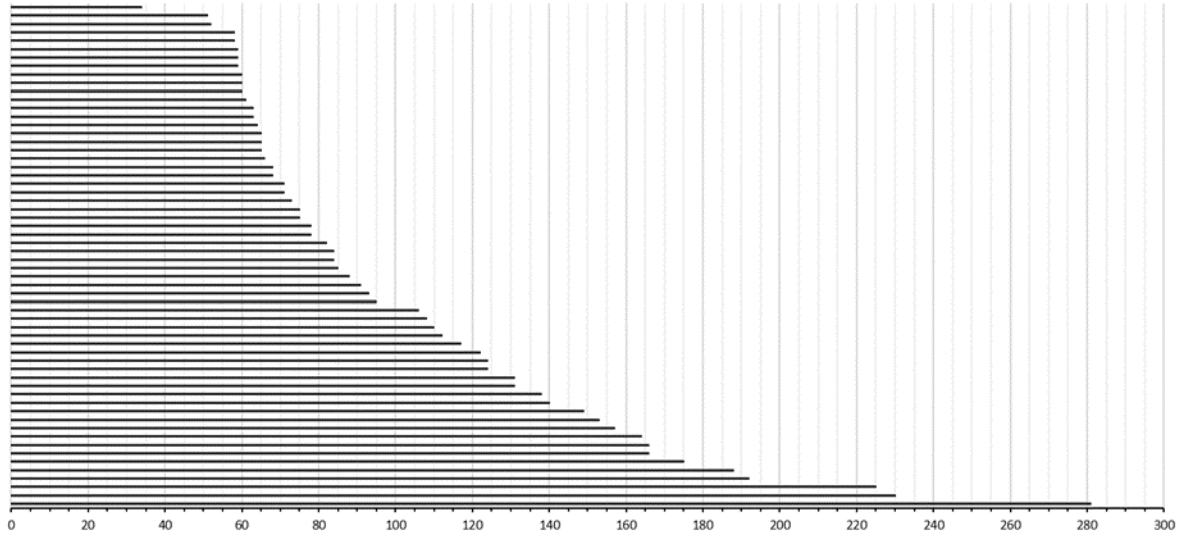


Figure S1.1. Distribution of segment lengths of measured samples, ranging from a minimum of 34 years to a maximum of 281 years.

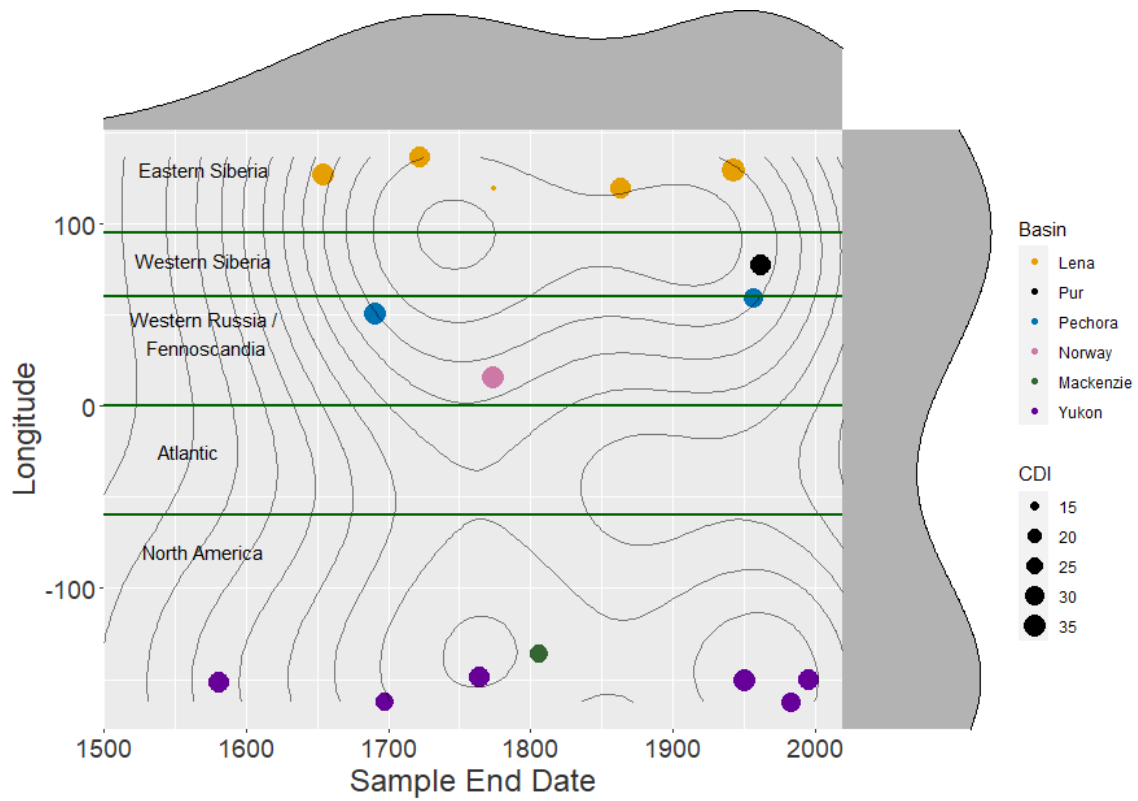


Figure S1.2. Plot of best matches for samples collected from Sjuøyane. Each point represents a sample's best match to a chronology. The colour of each data point displays the associated drainage basin, and the size of the point represents the CDI of the match. The density plots depict the densities of the associated time and longitude axes, weighted by the CDI of the matches.

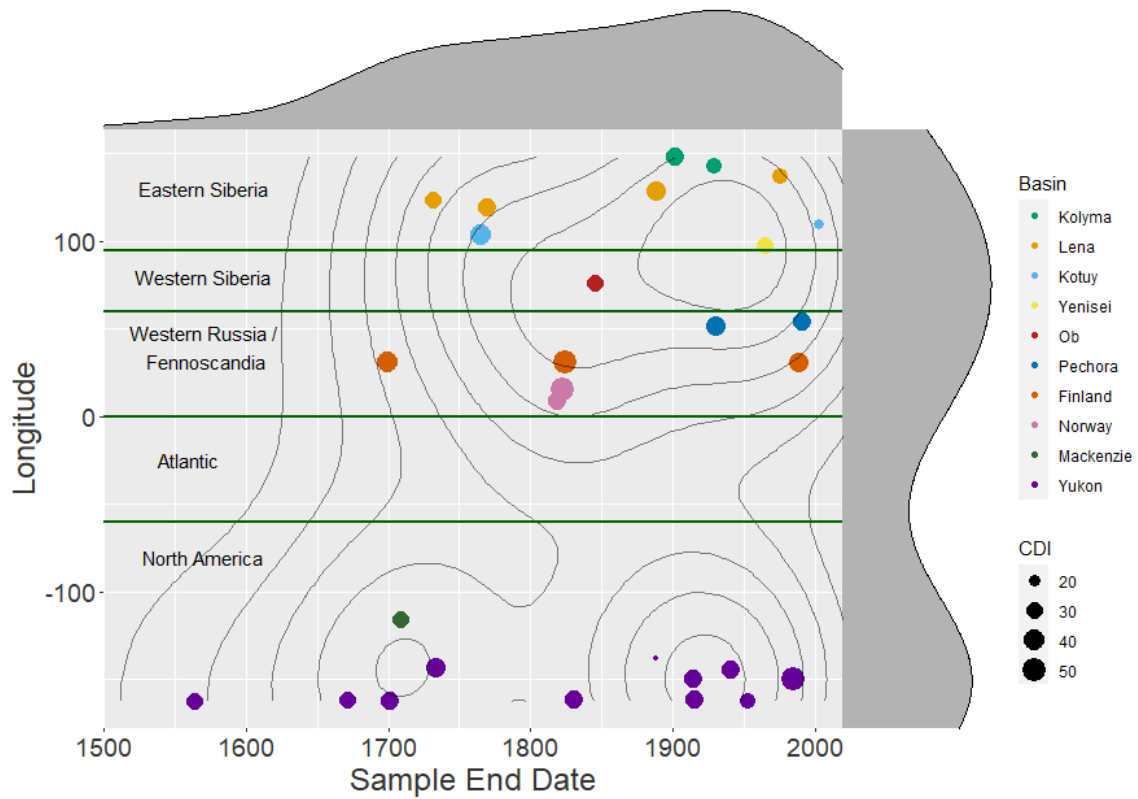


Figure S1.3. Plot of best matches for samples collected from Ringhorndalen. Each point represents a sample's best match to a chronology. The colour of each data point displays the associated drainage basin, and the size of the point represents the CDI of the match. The density plots depict the densities of the associated time and longitude axes, weighted by the CDI of the matches.

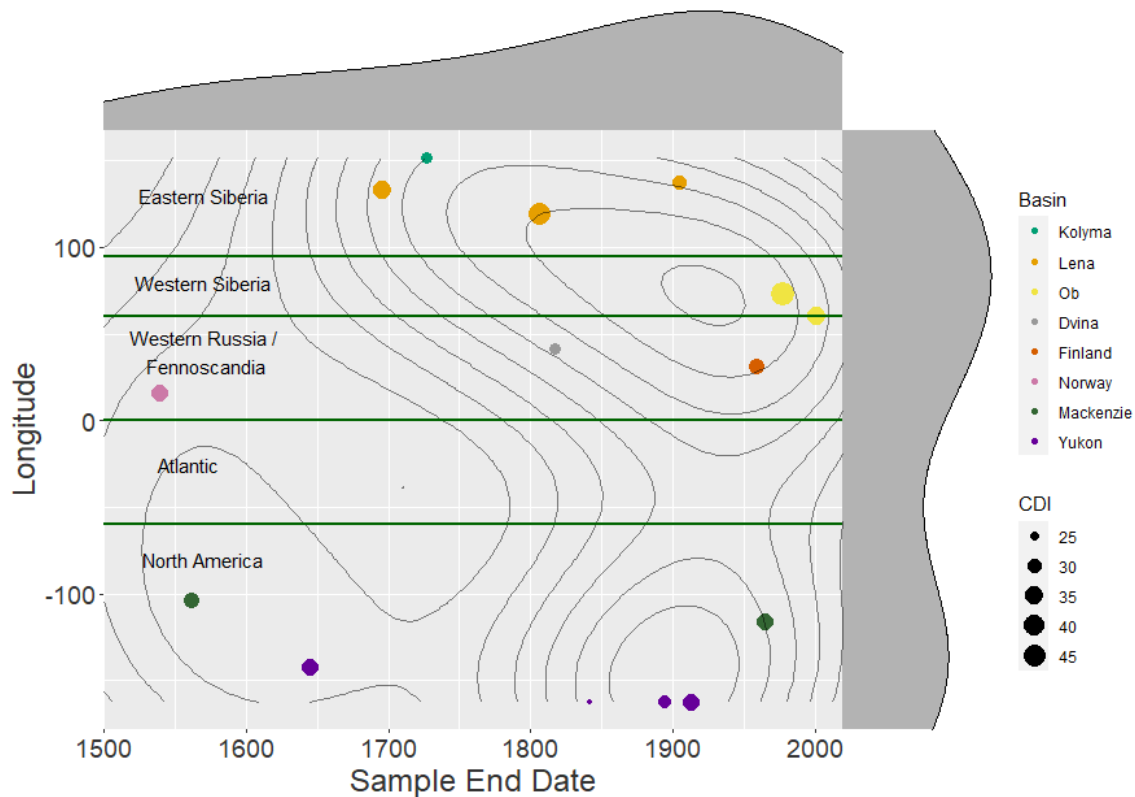


Figure S1.4. Plot of best matches for samples collected from Vassfarbukta. Each point represents a sample's best match to a chronology. The colour of each data point displays the associated drainage basin, and the size of the point represents the CDI of the match. The density plots depict the densities of the associated time and longitude axes, weighted by the CDI of the matches.

Data Set S2. All best matches including CDI scores and weighted scores, with rationale behind match choices via the study methodology, are available in dataset ds01.xlsx

Data Set S3. All match distribution plots for samples can be seen in the dataset ds02.zip. All potential matches are plotted for samples, with plots for the both the CDI scores and Weighted Score. Each point represents a match to a chronology. The colour of the point displays the associated drainage basin, and the size of the point represents either the CDI of the match, or the Weighted Score of the match, respectively. The density plots depict the densities of the associated time and longitude axes, weighted by the scores of the matches.

References

Rinn, F. (2003). TSAP-Win. Time series analysis and presentation for dendrochronology and 409 related applications. *User Reference*.