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### Data S1

### Data and code to reproduce best practice analysis and forecastability comparison

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### File list

Venn diagrams.Rmd

Final import and analysis - for EDI.Rmd

R2\_analysis\_EDI.Rmd

R2\_dataset\_for\_EDI.csv

complete\_dataset\_with\_source.csv

abstract\_review\_all\_papers\_EDI.csv

**Description**

Venn diagrams.Rmd – Code used to analyze abstract review data and create Venn diagrams for Fig. 1.

Final import and analysis - for EDI.Rmd – Code used to analyze matrix analysis results and create five figures: (1) the number of near-term ecological forecasts published per year, (2) a general description of ecological forecasting papers identified in this study, (3) the relationship between time step and time horizon of forecasting papers, (4) the total number of years of data used to develop each forecasting paper, (5) best practice adoption over time.

R2\_analysis\_EDI.Rmd – Code used to process R2 data, create a figure showing forecast performance (R2) over increasing forecast horizons for chlorophyll, phytoplankton, pollen, and evapotranspiration, and conduct a logistic regression to determine how R2 changes with forecast horizon for these variables. File also includes code for basic summary statistics related to R2

R2\_dataset\_for\_EDI.csv – Dataset of R2 values, forecast horizons, forecast variables, model groups, site or year groups, and paper information

complete\_dataset\_with\_source.csv – Dataset of matrix analysis results, including 57 fields of information for each of 178 papers

abstract\_review\_all\_papers\_EDI.csv – Dataset of abstract review results, including whether or not each paper met the criteria of being a forecast, being near-term, and being ecological