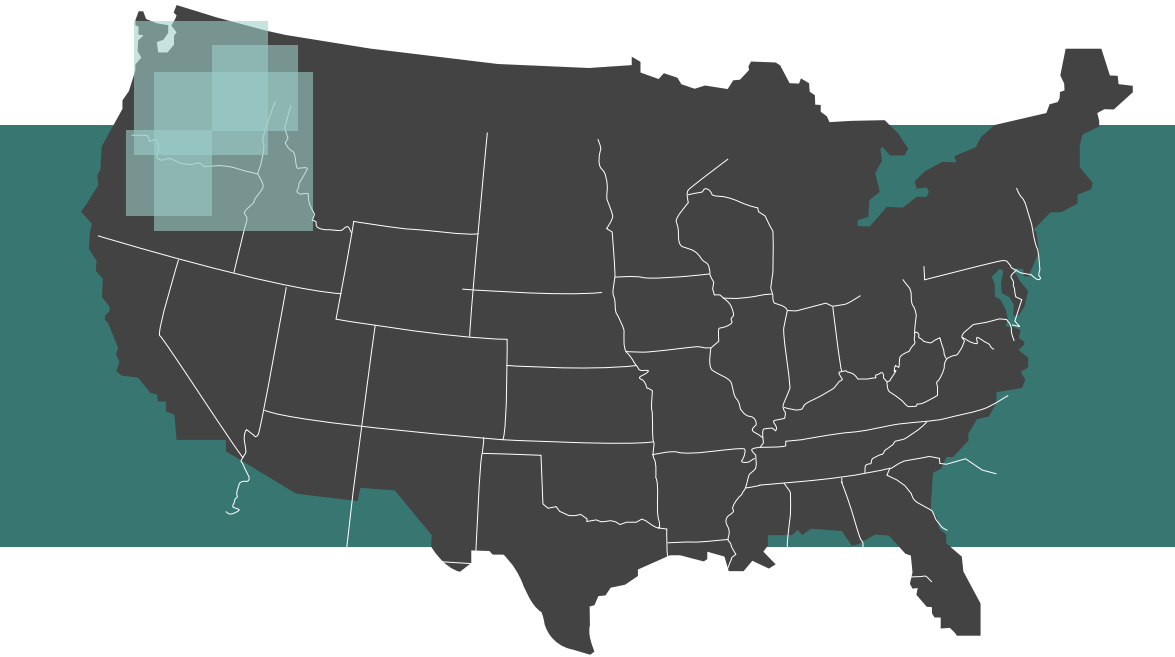
An aerial photograph of a winding asphalt road that curves through a dense, lush green forest. The road is light gray and contrasts with the dark green foliage. The forest appears to be a mix of deciduous and coniferous trees. The overall tone of the image is a deep teal or forest green, which serves as the background for the text overlay.

SNOTEL Water Level Analysis

Samuel Yeager, Grant Hicks,
Kathleen Wang

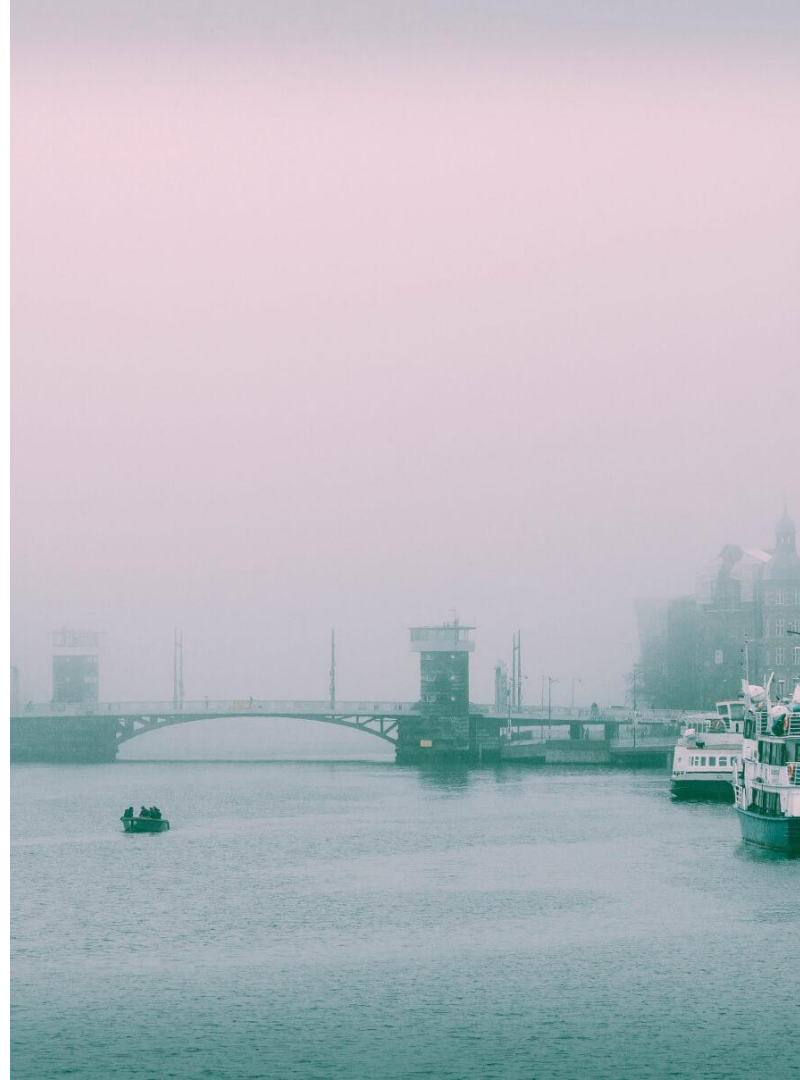


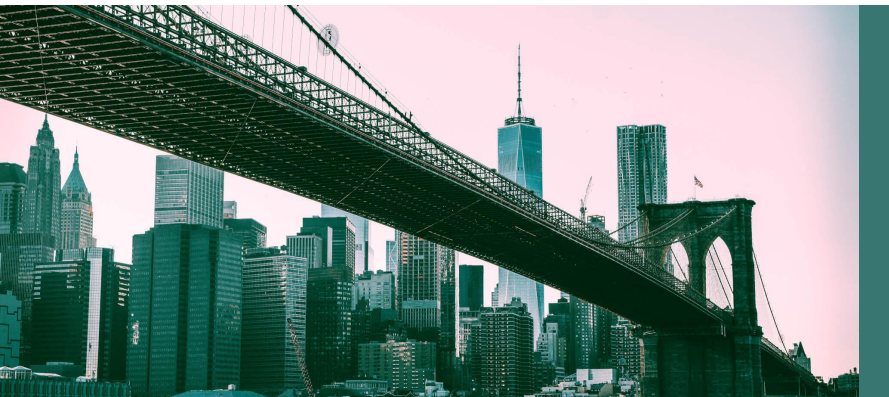
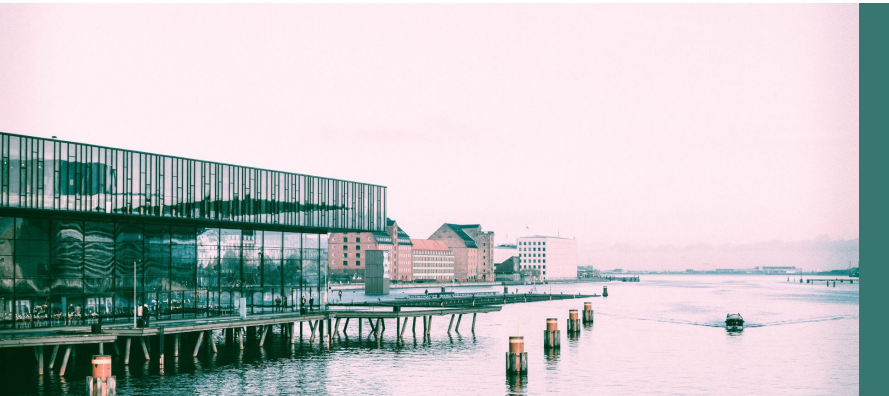
Background

- SNOTEL (SNOwpack TElemetry)
- 730 sites in 11 states
- Data from SNOTEL sites in the Columbia River Basin
- Feb 10, 1990 - 2021

Problem Statement

- Can we produce a model to predict precipitation levels in a water basin using data gathered from NRCS SNOTEL sites?

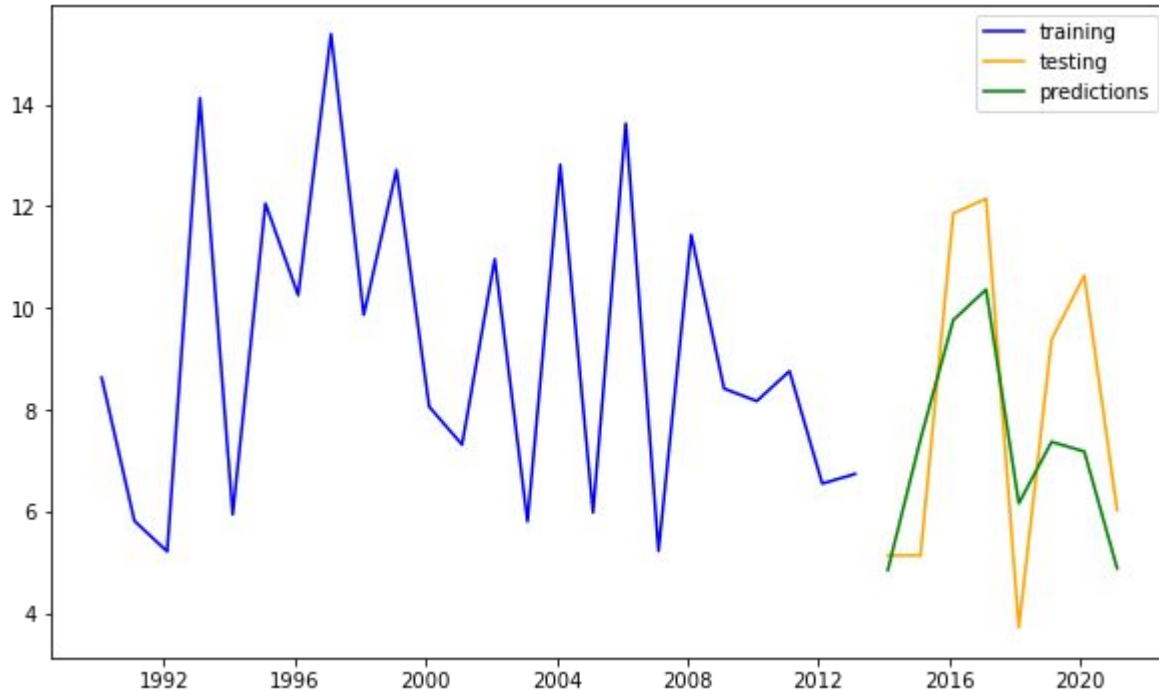




The Process

- CSVs collected from USDA website
- 24 stations in the Columbia River Basin
- Timeseries (ARIMA)
 - Used the model with best AIC

Owyhee Group Snow Water Equivalent with ARIMA(2,1,1) Predictions



Results

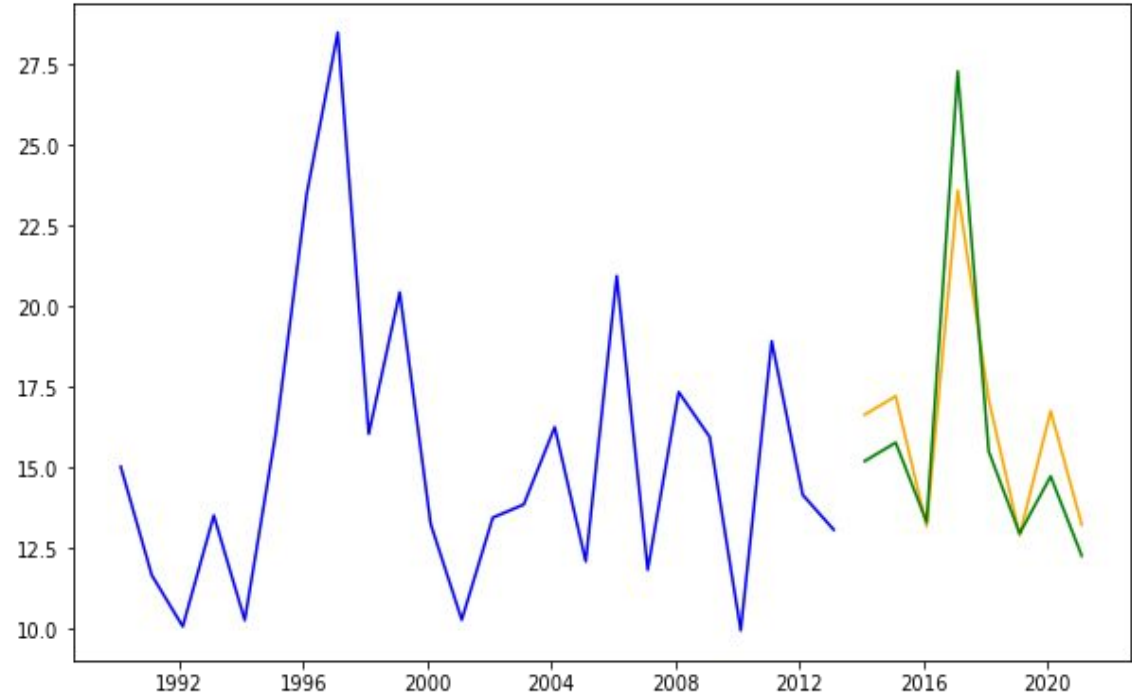
model by Samuel



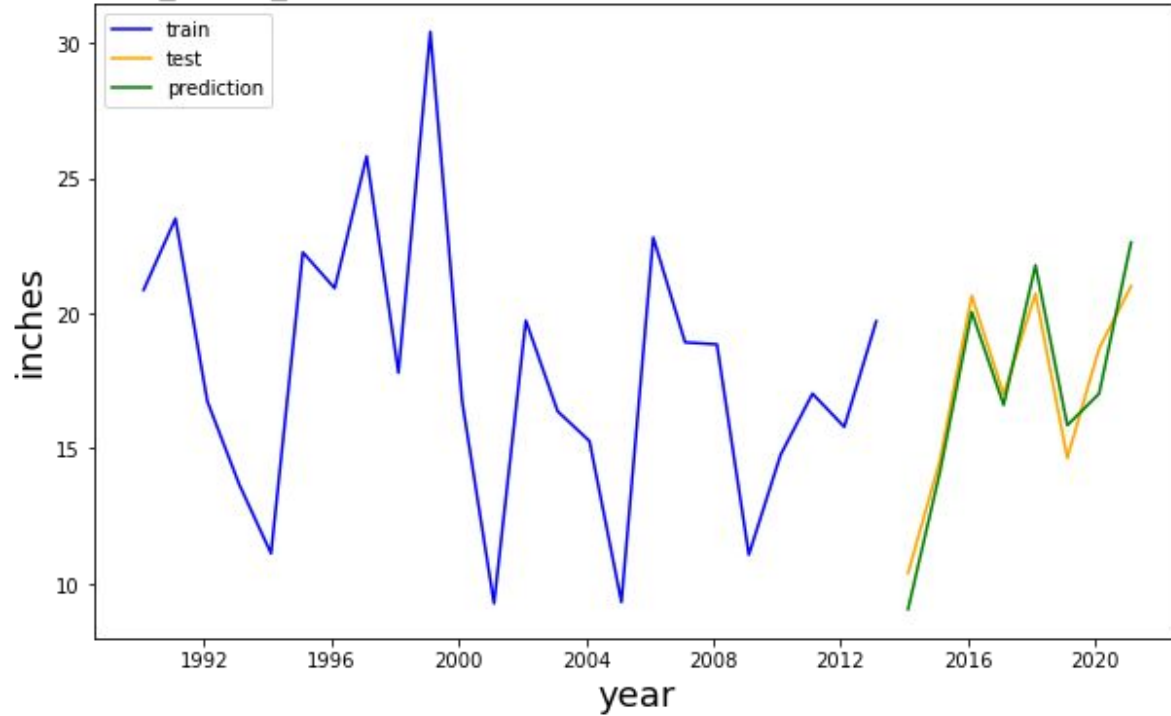
Results

model by Grant

Snake Above Palisades Basin Snow Water Equivalent with ARIMA(0,1,1) Predictions



columbia_above_methow Snow Water Equivalent with ARIMA(0,1,1) Predictions



Results

model by Kathleen





Conclusions

- Overall, the ARIMA model was pretty good at predicting water levels
- Similar results should be seen when testing on other days of the year as well.
- We recommend further testing and use of the full data for every day of the year before implementing a model for short term predictions.

**THANK YOU
FOR LISTENING**

