Forecast Explanation: owyhee_r_bl_owyhee_dam 2023-05-15

The model estimates the following range for naturalized seasonal volume (KAF) of owyhee_r_bl_dam on 2023-05-15, {10th quantile: 455, median: 664, 90th quantile: 882} (Fig 1). This prediction is above historical values for each quantile and is similar for each quantile to the previous prediction due to the lack of fluctuation in the observed feature values (Fig 2, Fig 5-9). The predictions for each month within the streamflow season are also above historical values, as is the observed monthly volume for April (Fig 4). The biggest drivers for this prediction are the SWE estimate (Snotel), which is 2 standard deviations above historical, and a drought measure (PDSI), which is 1.4 standard deviations above historical (Fig 10-13).

Fig 1: Quantile Model Ensemble

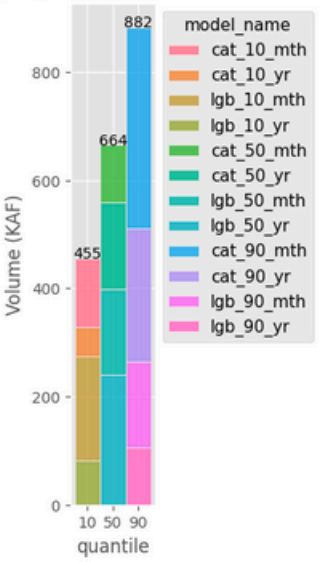

Fig 2: Predicted Volume Quantiles vs Historical Quantiles by Issue Date

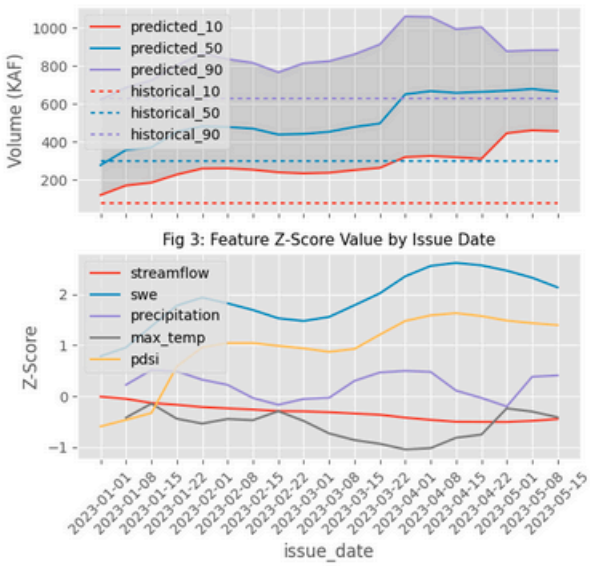

Fig 3: Feature Z-Score Value by Issue Date

Fig 4: Monthly Predicted Quantiles vs. Historical

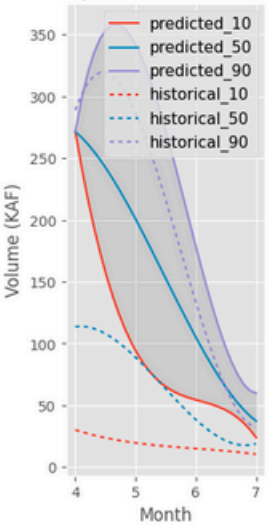

Fig 5: Z-Score Change from Previous Issue Date

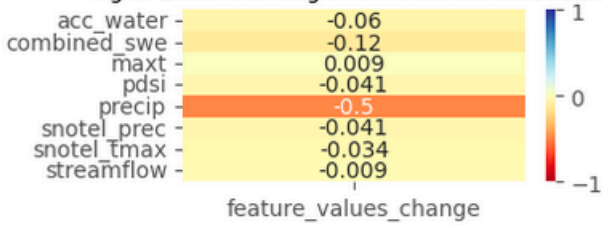

Fig 6: Z-Score Value on Issue Date

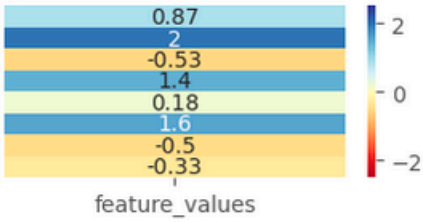

Fig 7: Changes from Previous Issue Date - Monthly Model Ensemble - 10th Quantile

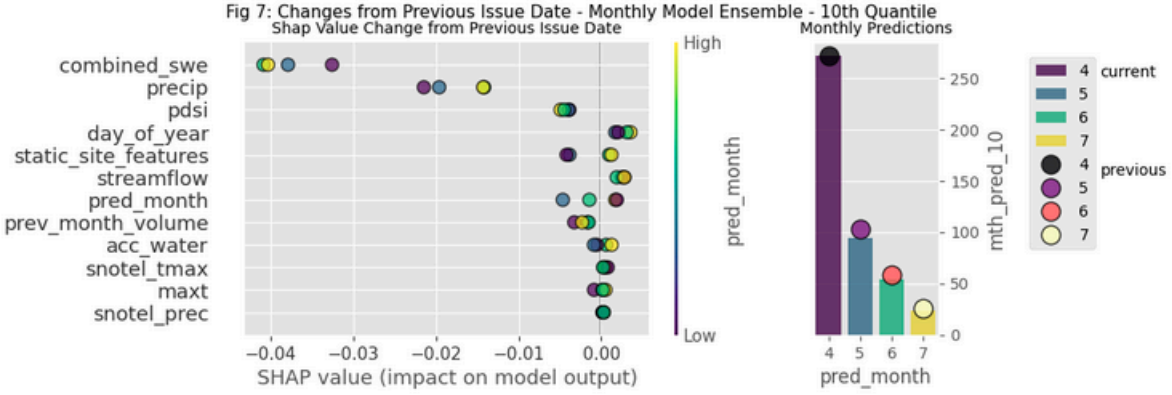

Fig 8: Changes from Previous Issue Date - Monthly Model Ensemble - 50th Quantile

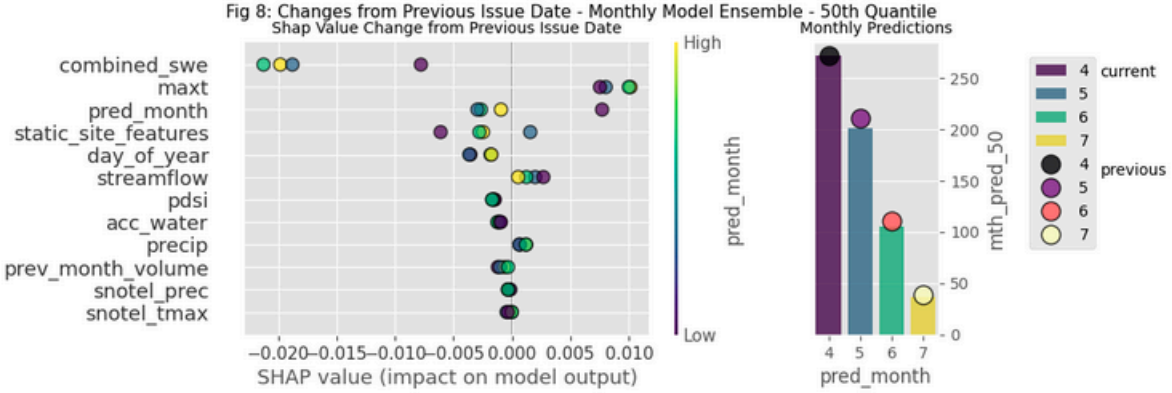

Fig 9: Changes from Previous Issue Date - Monthly Model Ensemble - 90th Quantile

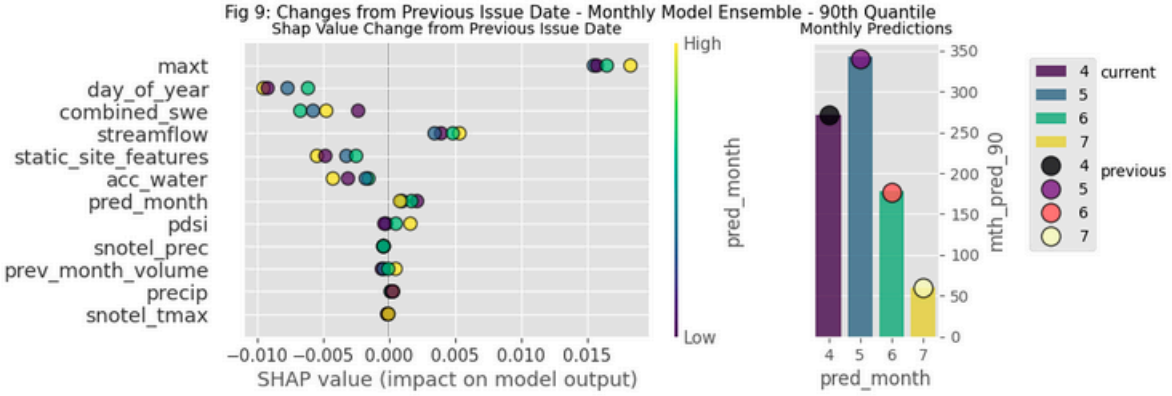

Fig 10: Yearly Model Shap Values - 10th Quantile (log Volume KAF)

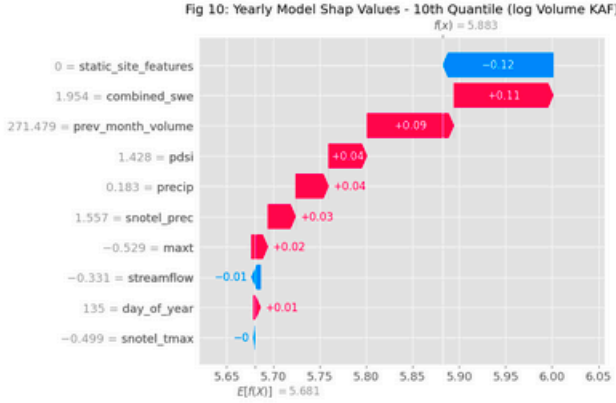

Fig 11: Yearly Model Shap Values - 50th Quantile (log Volume KAF)

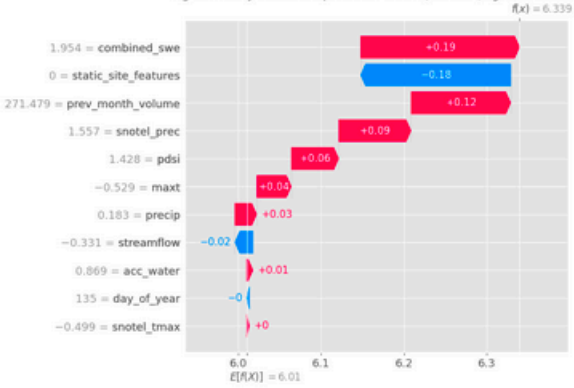

Fig 12: Yearly Model Shap Values - 90th Quantile (log Volume KAF)

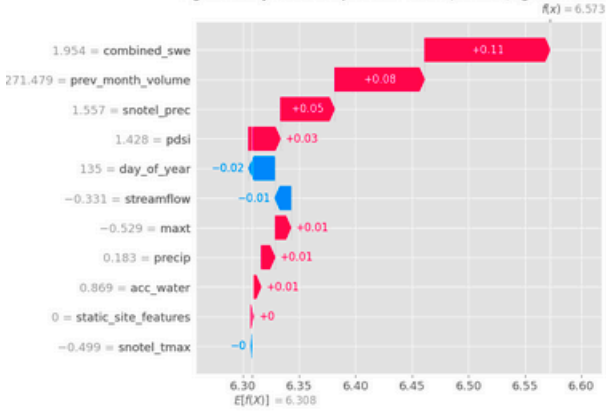

Fig 13: Snotel SWE Deviation (Correlated Stations) on 2023-05-15