

**Supplementary material for:**

*Geographically aware estimates of remotely sensed water properties for  
Chesapeake Bay*

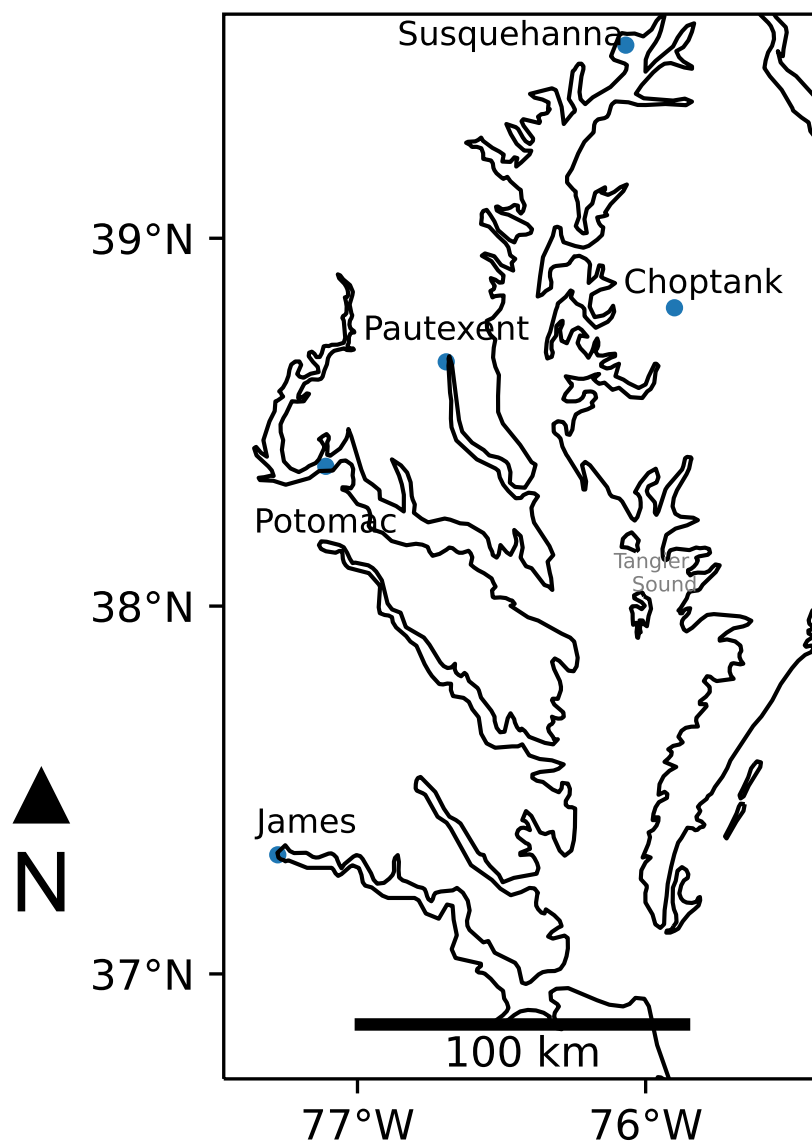


Figure 1: Map of Chesapeake Bay study site.

Table 1: Number of measurements, programs, and stations in the observational dataset.

variable	n_measures	n_programs	n_stations
SST (C)	103015	20	334
SSS (psu)	62116	20	316
turbidity (NTU)	53191	15	153

Table 2: Distribution of values in the observational dataset.

variable	0.0	0.05	0.5	0.95	1.0
SSS (psu)	0	0.1	11.48	22.25	32.7
SST (C)	-1.75	4.07	19.9	29.37	50
turbidity (NTU)	0	1	5.8	36.34	3742.34

Table 3: Random Forest tuning results.

variable	n_estimators	min_samples_leaf	max_features	max_depth
salinity	1810	5	auto	20
turbidity	860	1	sqrt	100
temperature	1430	5	sqrt	100

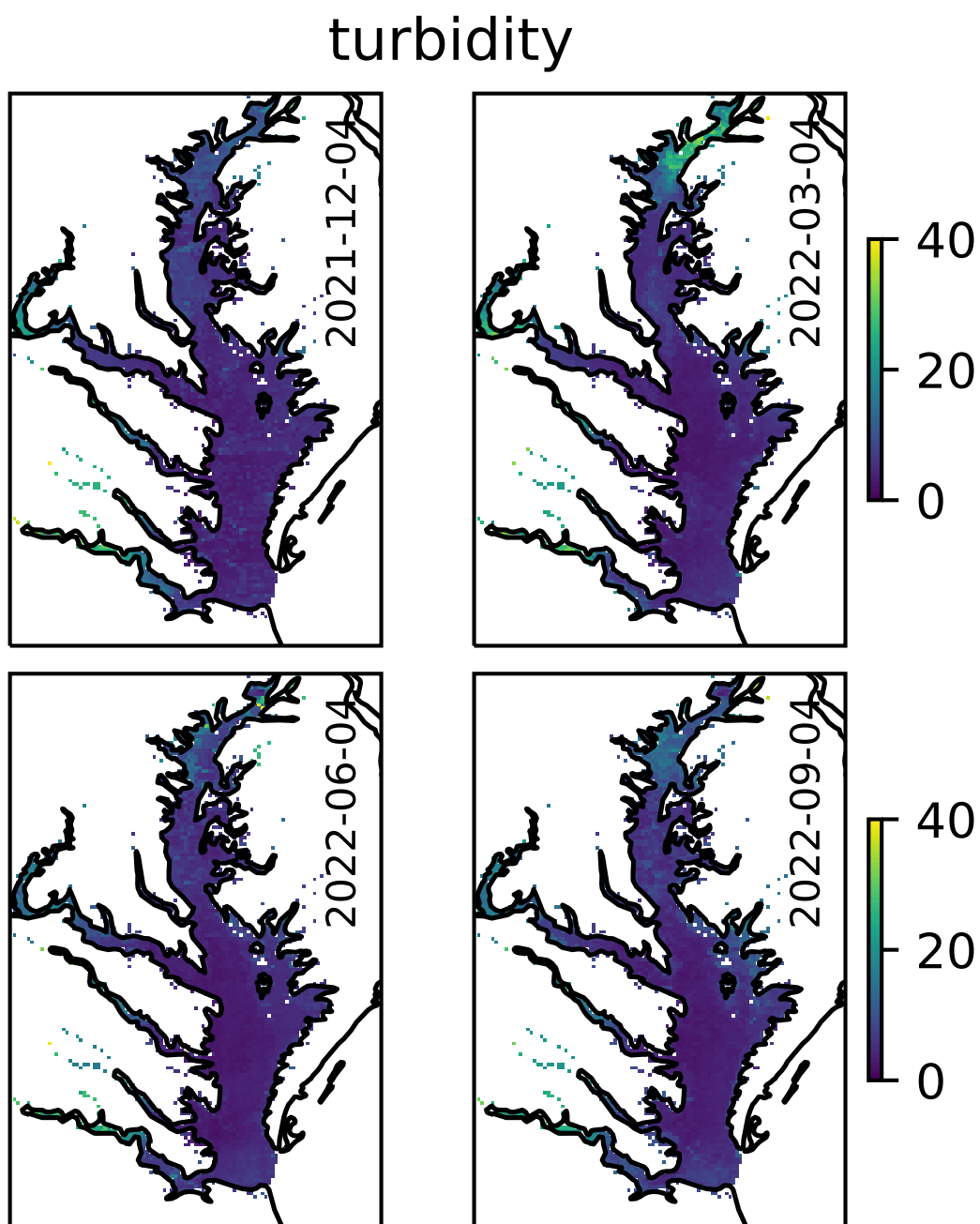


Figure 2: Seasonal Random Forest prediction results for turbidity.

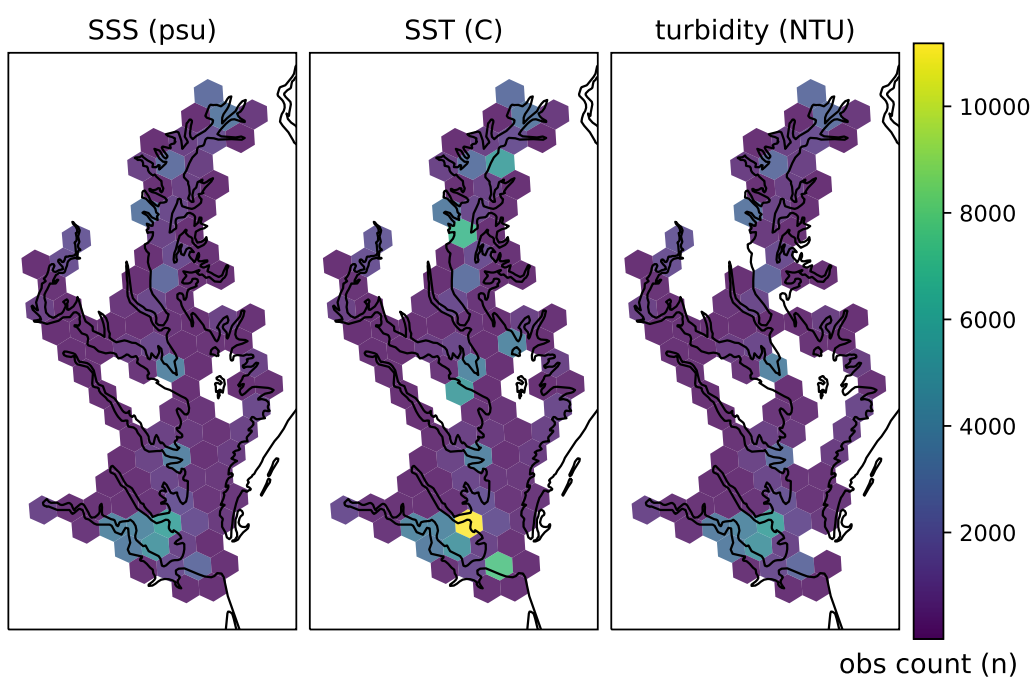


Figure 3: Locations of observational data.

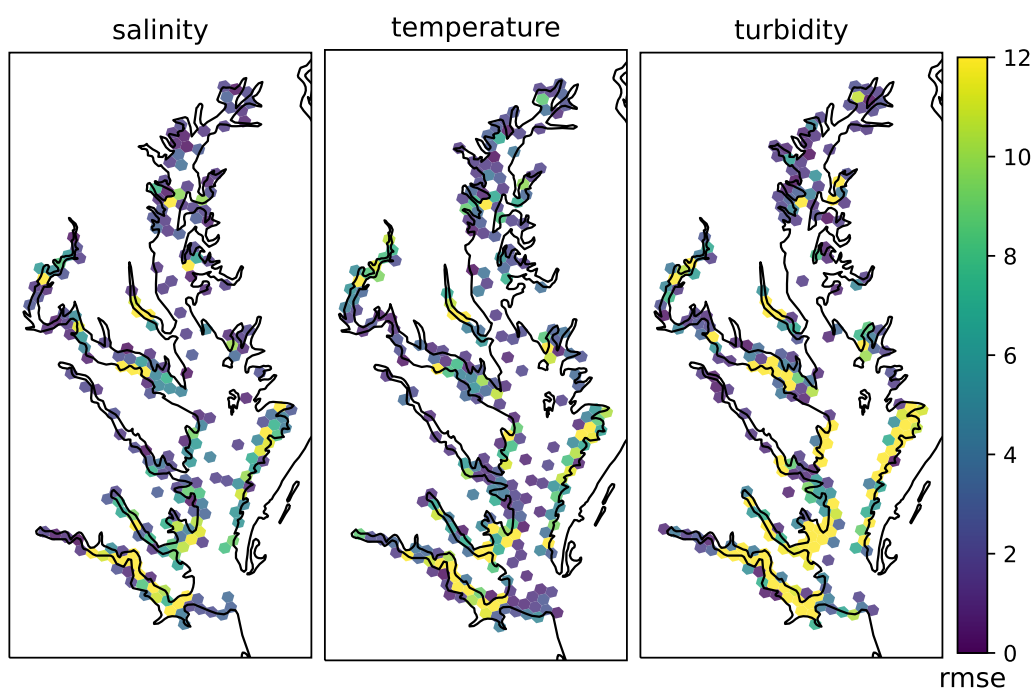


Figure 4: Map of model validation errors.