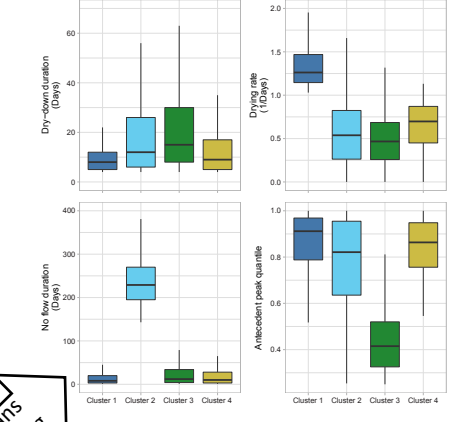
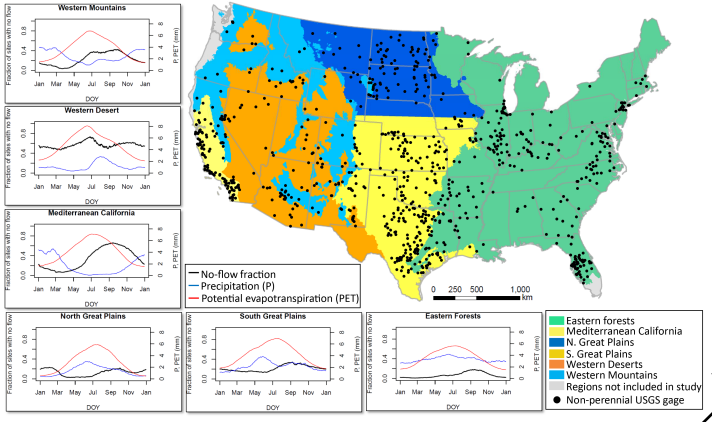


The drying regimes of non-perennial rivers

A.N. Price, C.N. Jones, J.C. Hammond, M.A. Zimmer, S.C. Zipper

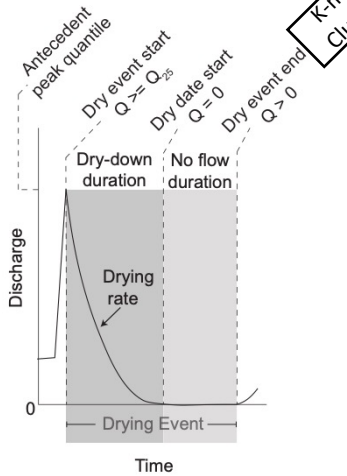


- 4 clusters representing regimes with:
- (1) Faster drying
 - (2) Long no flow duration
 - (3) Low antecedent peak flows
 - (4) Mean characteristics of all metrics

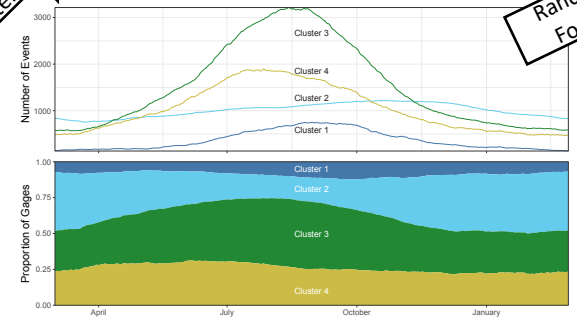
Takeaway: Land use characteristics are more important factors in how fast, how long, and when a stream dries!

Drying event

- 894 CONUS USGS streamgages (GAGES-2)
- Isolated 25,207 unique "drying events"
- $\geq 25^{\text{th}}$ percentile
- >1 day no flow duration
- Calculated 13 metrics* representing frequency, time, duration, magnitude
- *Used 4 for k-means clustering



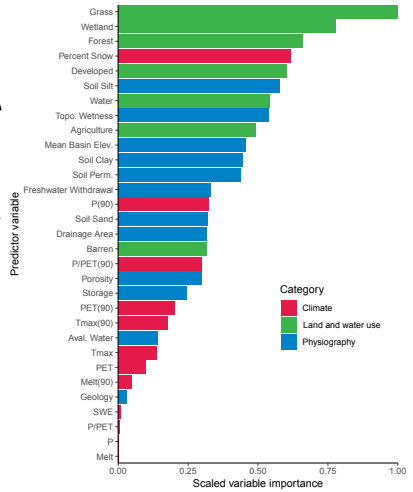
K-means Clustering



- Temporally behavior of clusters:
- (1) Fewest number of events, frequent end of WY
 - (2) Increased events during winter
 - (3) Most number of events, strong seasonality
 - (4) Strong seasonality but earlier in WY

Random Forest

Random Forest



- Constructed random forests to explain cluster membership
- 31 predictor variables (Categories: Climate, LULC, and physiography)
- Top predictors belonged to land cover/use category