River Stream Flow - Clustering and Prediction

Eleanor Barry, Abigail Verschueren, James Hook

University of Bath

January 31, 2018

Data: AMAX records consist of catchment descriptors and annual maximum river flow statistics for 951 different rivers.
We also have access to daily and $1/4$ hourly river flow and local rainfall data for a subset of those rivers.

Challenge:
Predict annual maximum river flow statistics from catchment descriptors for rivers with limited or short records.

Work directions:

- Fancier regression models e.g. Neural Networks.
- Cluster analysis of data e.g. to incorporate random effects.
- Incorporate additional data sources e.g. Google Earth, rainfall/weather data (could model flow as a function of past weather e.g. with Recurrent Neural Network).

Bath river flow 5.5 years