

Divided data collection efforts create muddled picture of the tidal Thames

Julia Lanoue, Thames Estuary Partnership

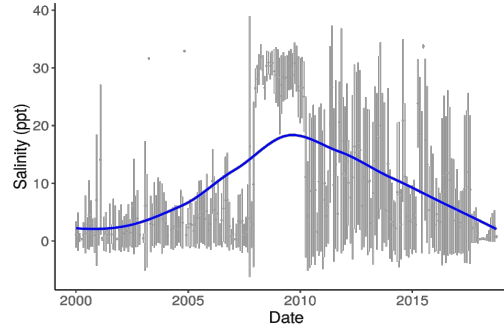
Introduction

- Project began Oct 2018
- Purpose: Identify data holders, collate environmental and fisheries data, analyze trends.
- Data major commodity on Thames → unwillingness to share
- Datasets used: Environment Agency (AQMS, WIMS, Benthic Sampling Survey), DPWorld, National River Flow Archive.

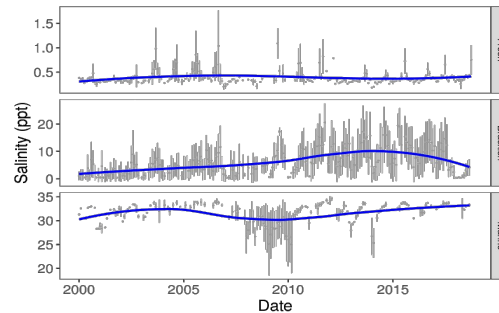
Methods

- Tracking trends in physical data: salinity, temperature, dissolved oxygen, turbidity
 - All factors that impact fish populations
- Analysed trends in each parameter for the estuary as a whole, by salinity category (fresh, brackish, and marine), and by general sampling site.
- Seasonal Mann-Kendall: looks at changes in average values over time

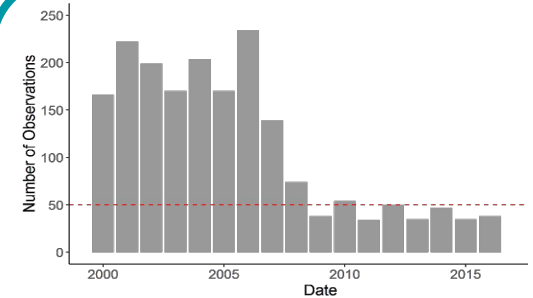
Example: Salinity over Time



Whole estuary trend across time: sharp increase observed



By salinity category: hump seen in brackish category



Each sampling site in brackish category showed decrease in samples collected over time

Conclusions

- Any significant trends were the result of missing data and decreased sampling efforts over time.
- Infrequent sampling cannot capture the natural variability in estuaries.
- This can cause misleading conclusions, as seen in the salinity data.
- Current work: Analyzing fisheries data in context of physical data. Pamphlet and report coming soon!

Divided data collection efforts create muddled picture of the tidal Thames

Julia Lanoue, Thames Estuary Partnership

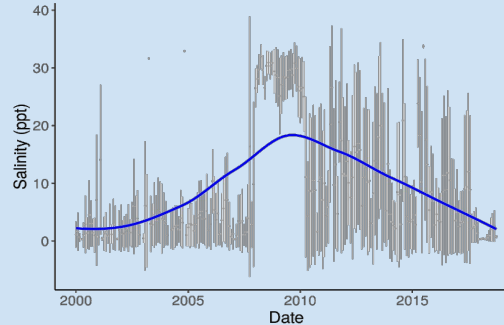
Introduction

- Project began Oct 2018
- Purpose: Identify data holders, collate environmental and fisheries data, analyze trends.
- Data major commodity on Thames → unwillingness to share
- Datasets used: Environment Agency (AQMS, WIMS, Benthic Sampling Survey), DPWorld, Met Office.

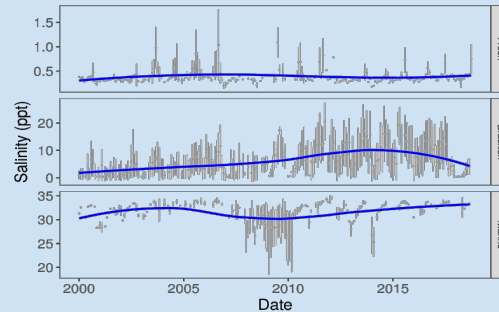
Methods

- Tracking trends in physical data: salinity, temperature, dissolved oxygen, turbidity
 - All factors that impact fish populations
- Analysed trends in each parameter for the estuary as a whole, by salinity category (fresh, brackish, and marine), and by general sampling site.
- Seasonal Mann-Kendall: looks at changes in average values over time

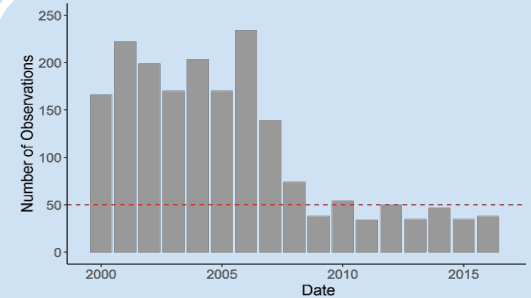
Salinity Trends over Time



Whole estuary trend across time: sharp increase observed



By salinity category: hump seen in brackish category



Each sampling site in brackish category showed decrease in samples collected over time

Conclusions

- Any significant trends were the result of missing data and decreased sampling efforts over time.
- Infrequent sampling cannot capture the natural variability in estuaries.
- This can cause misleading conclusions, as seen in the salinity data.
- Current work: Analyzing fisheries data in context of physical data. Pamphlet of results coming soon!

- The Thames Estuary is a place of social, historical, and ecological significance.
- Many organisations collect data on the Thames, such as private commercial developers, academics, conservation and citizen science groups
- Not all the data is made publicly available, which makes it difficult to track what data is being collected and where gaps may arise