

# Mercury in the Ohio River

Part 2:

Mercury in Fish – Jeff Thomas



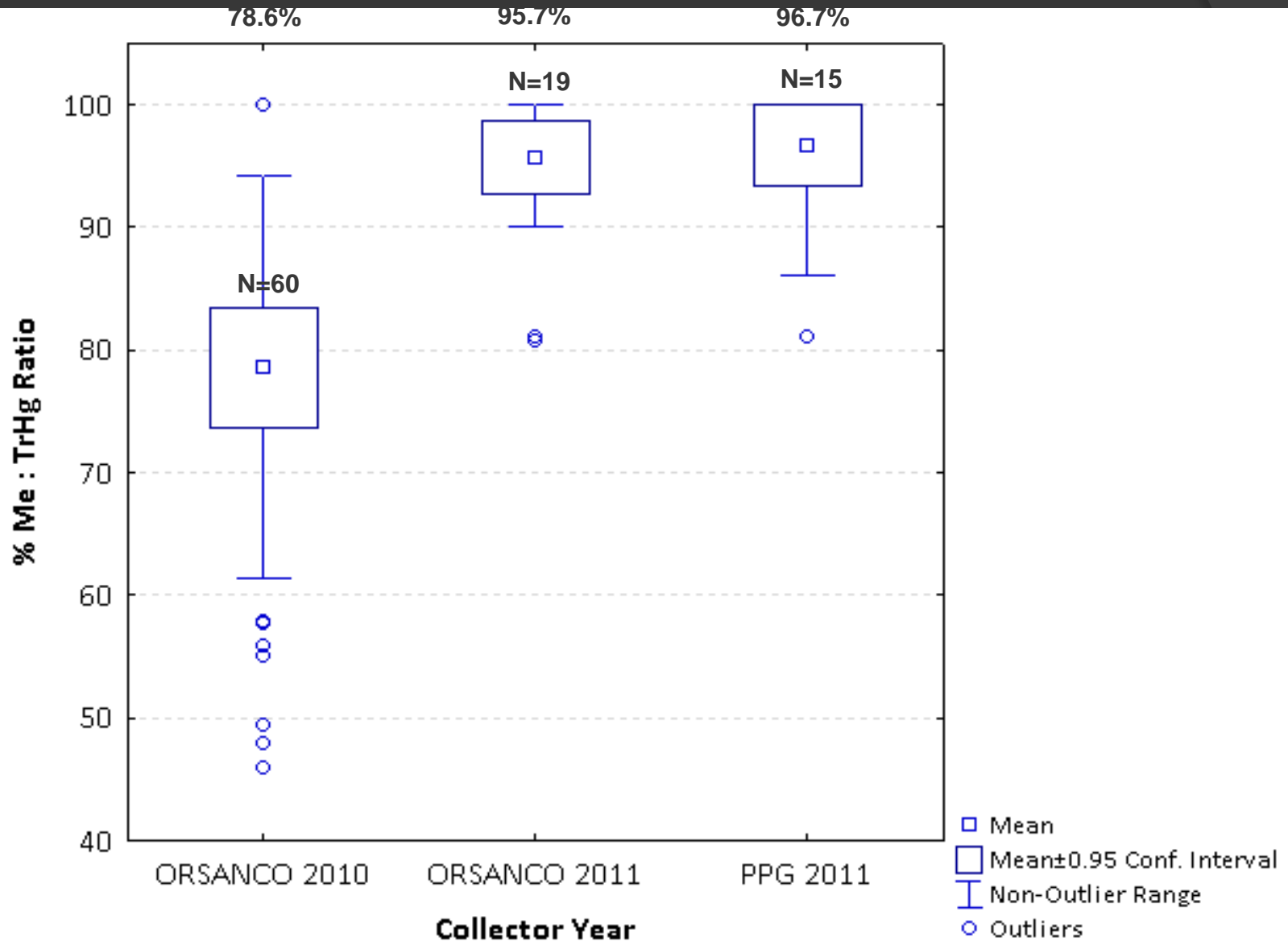
# Outline

- ⦿ Sampling timeline
- ⦿ MethylHg:TotalHg ratios
- ⦿ Methods comparisons
- ⦿ Trophic level & species variability
- ⦿ Length vs concentration
- ⦿ River mile trends
- ⦿ Temporal trends

# Sampling Timeline

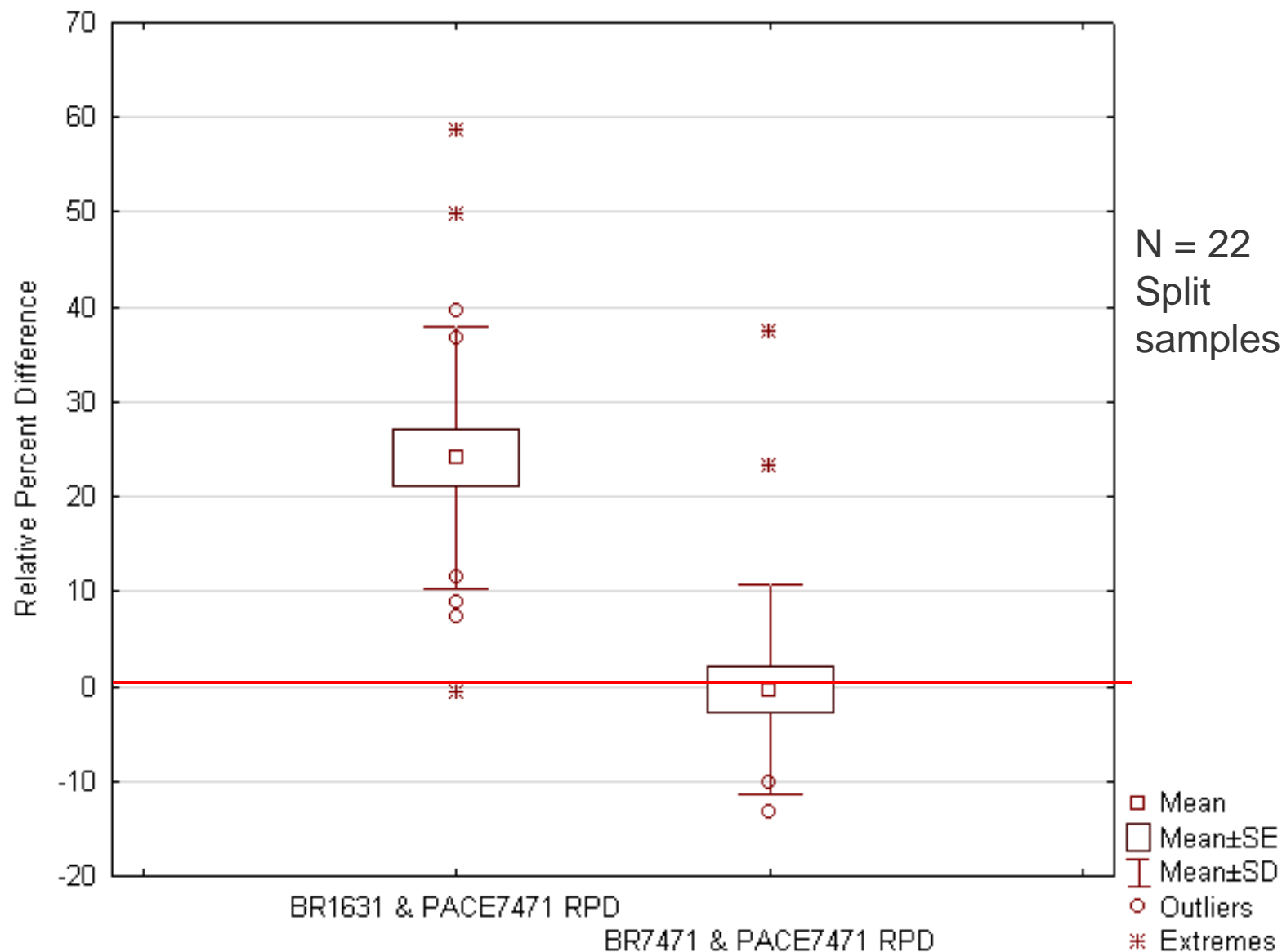
- ◎ 1983-2008 – Total Recoverable Hg (TrHg)
  - Fish collected as encountered
  - Labs used varied; recent method was EPA-7471
- ◎ 2009 – TrHg & MethylHg (MeHg)
  - Targeted worst-case scenario fish only
    - Large Hybrid Striped Bass (>19")
    - Brooks Rand analyzed 4 samples for TrHg using EPA-1631 & MeHg
- ◎ 2010 – TrHg (136 samples) & MeHg (60)
  - Some routine samples, some worst-case (4 species)
  - Many lab/methods comparisons
- ◎ 2011 – TrHg (47 samples) & MeHg(19)
  - Routine samples, no worst-case targeted
  - Brooks Rand using method 1631 for all samples

# % MeHg:TrHg Ratios



# Methods Comparisons

## 7471 vs 1631

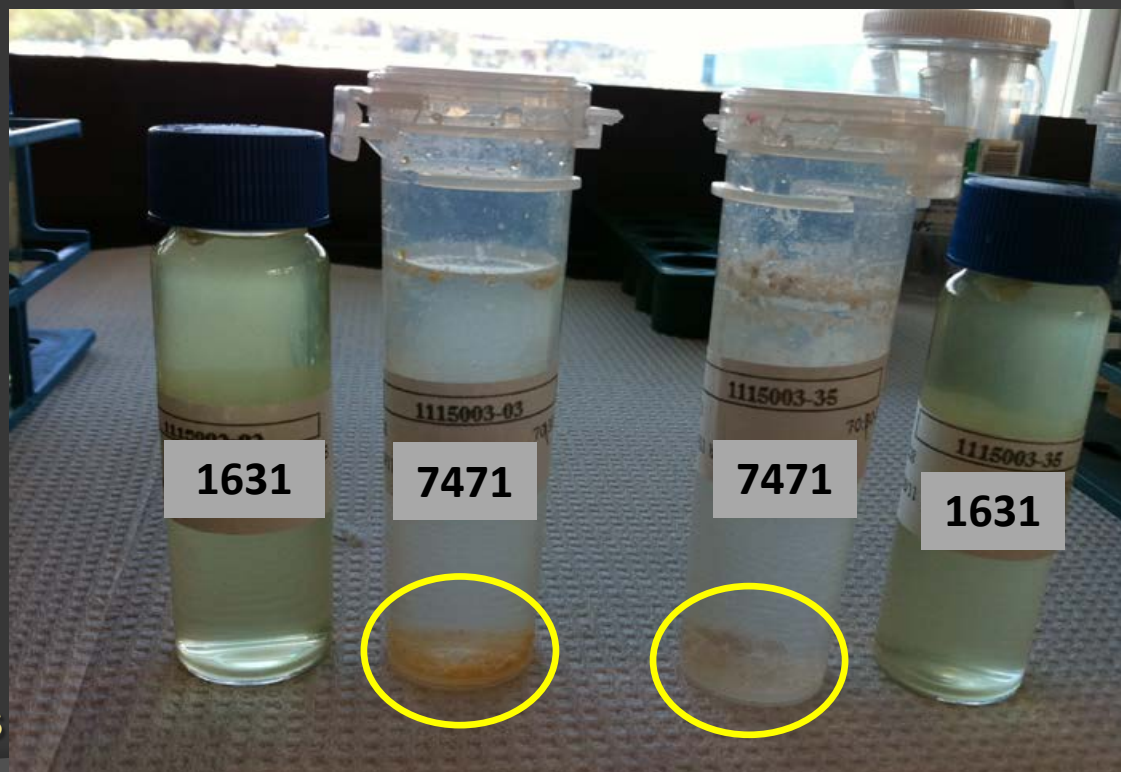


# Methods Comparisons

## 7471 vs 1631

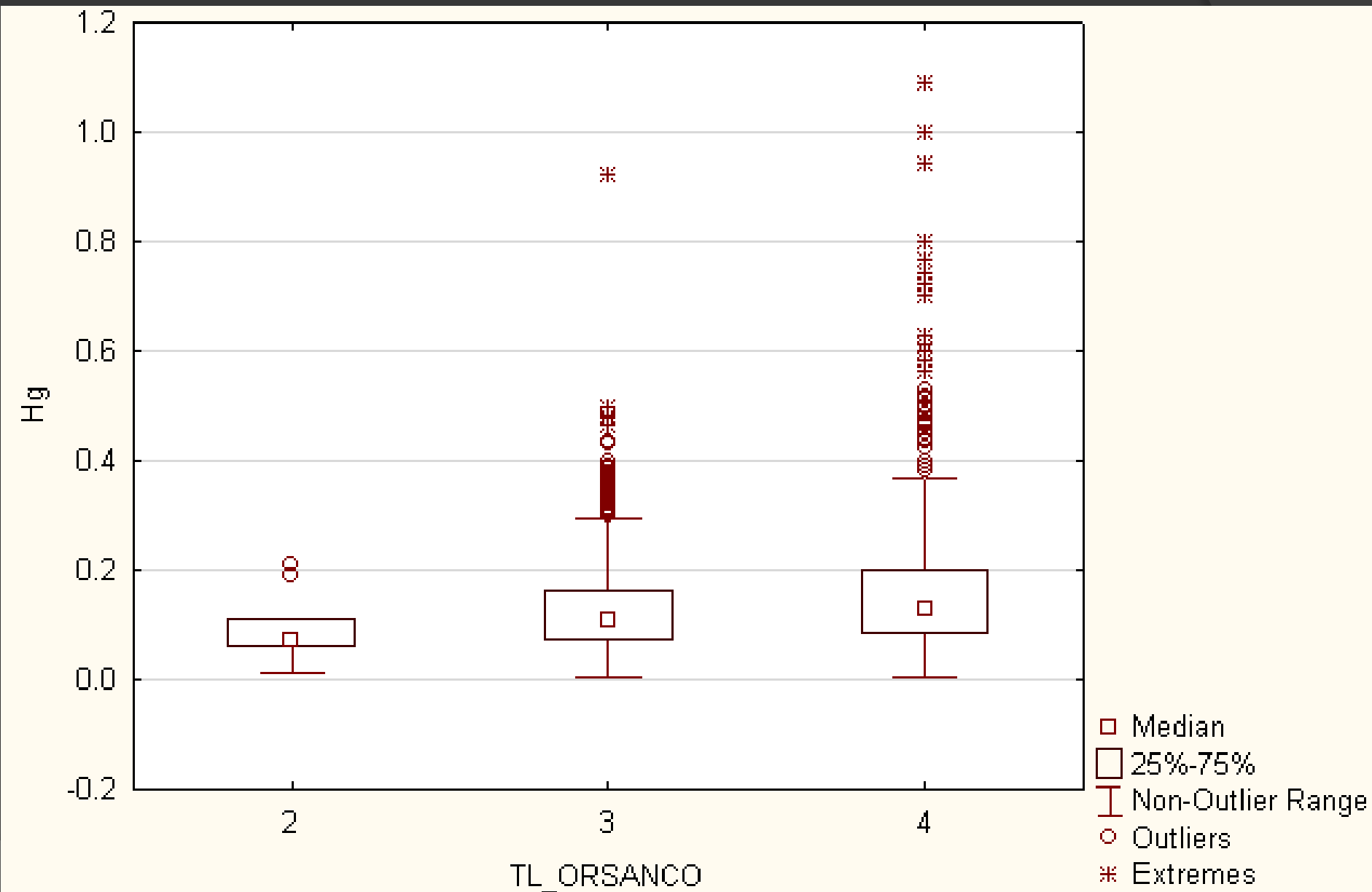
Potential cause(s) of ~20% decreases

- Different Prep Methods
  - Digestion
  - Oxidation

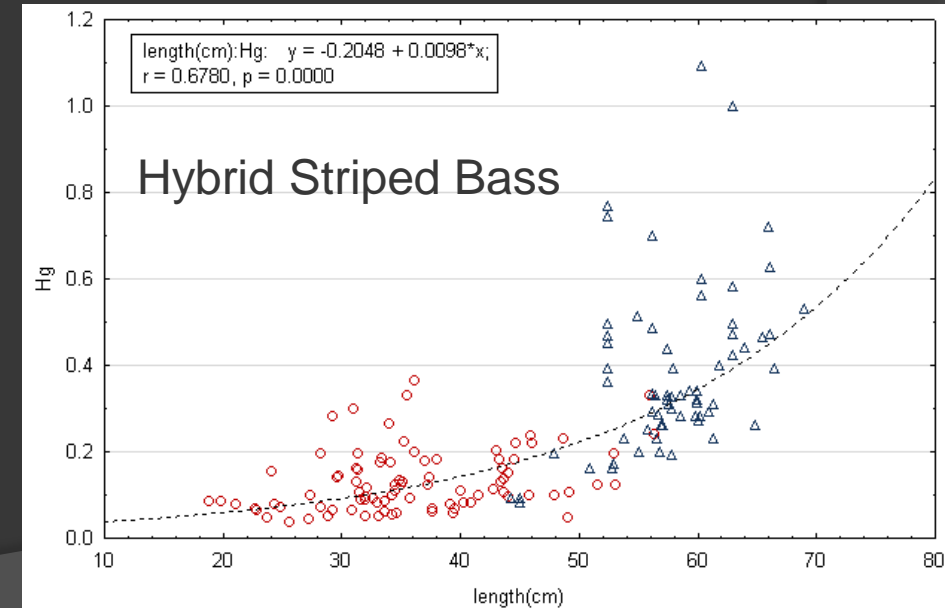
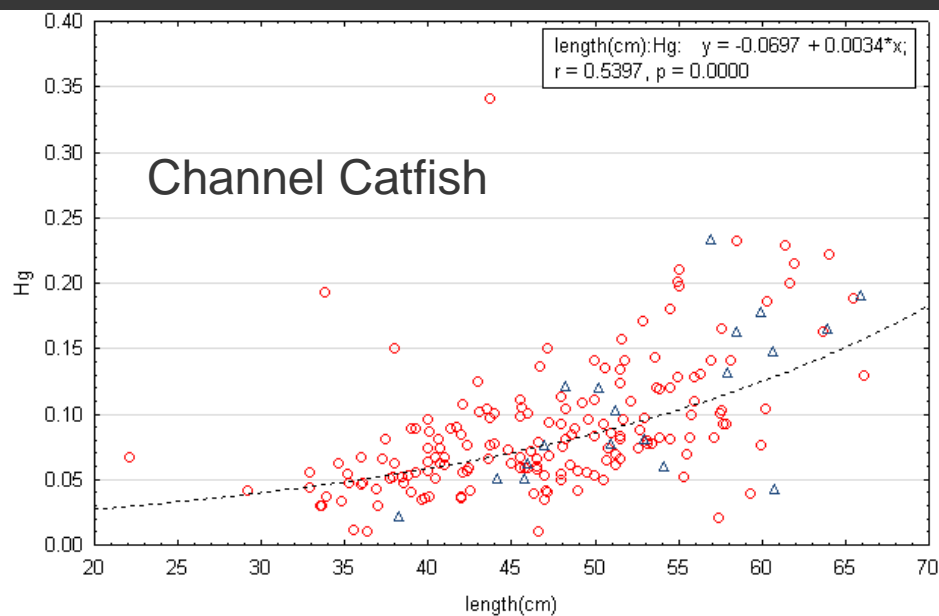
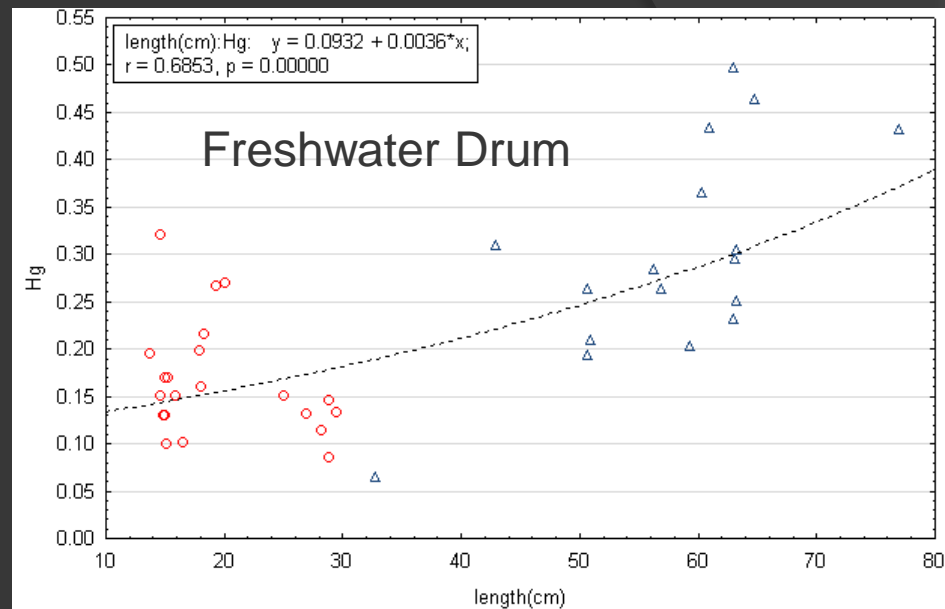
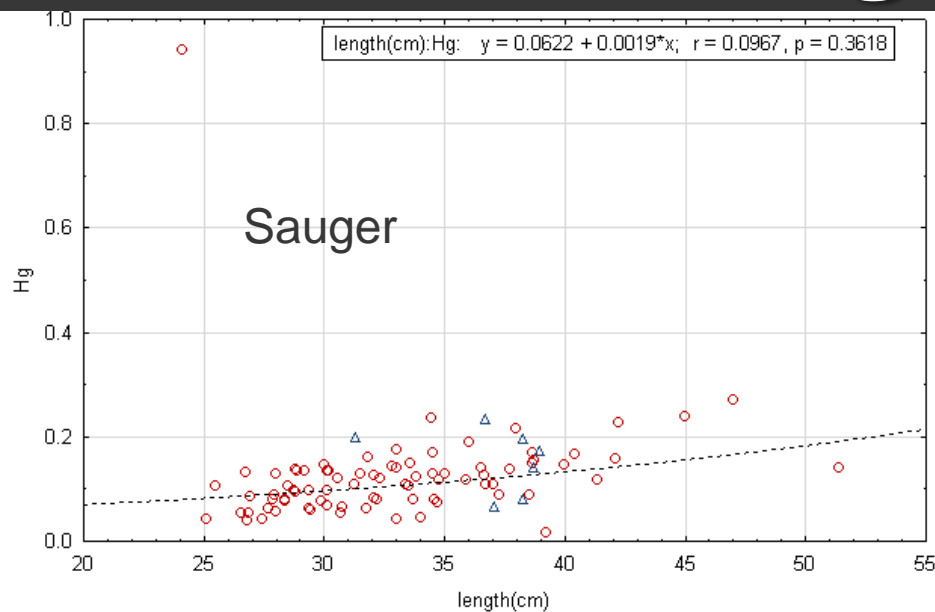


Performed by Brooks Rand Labs

# TrHg by Trophic Level



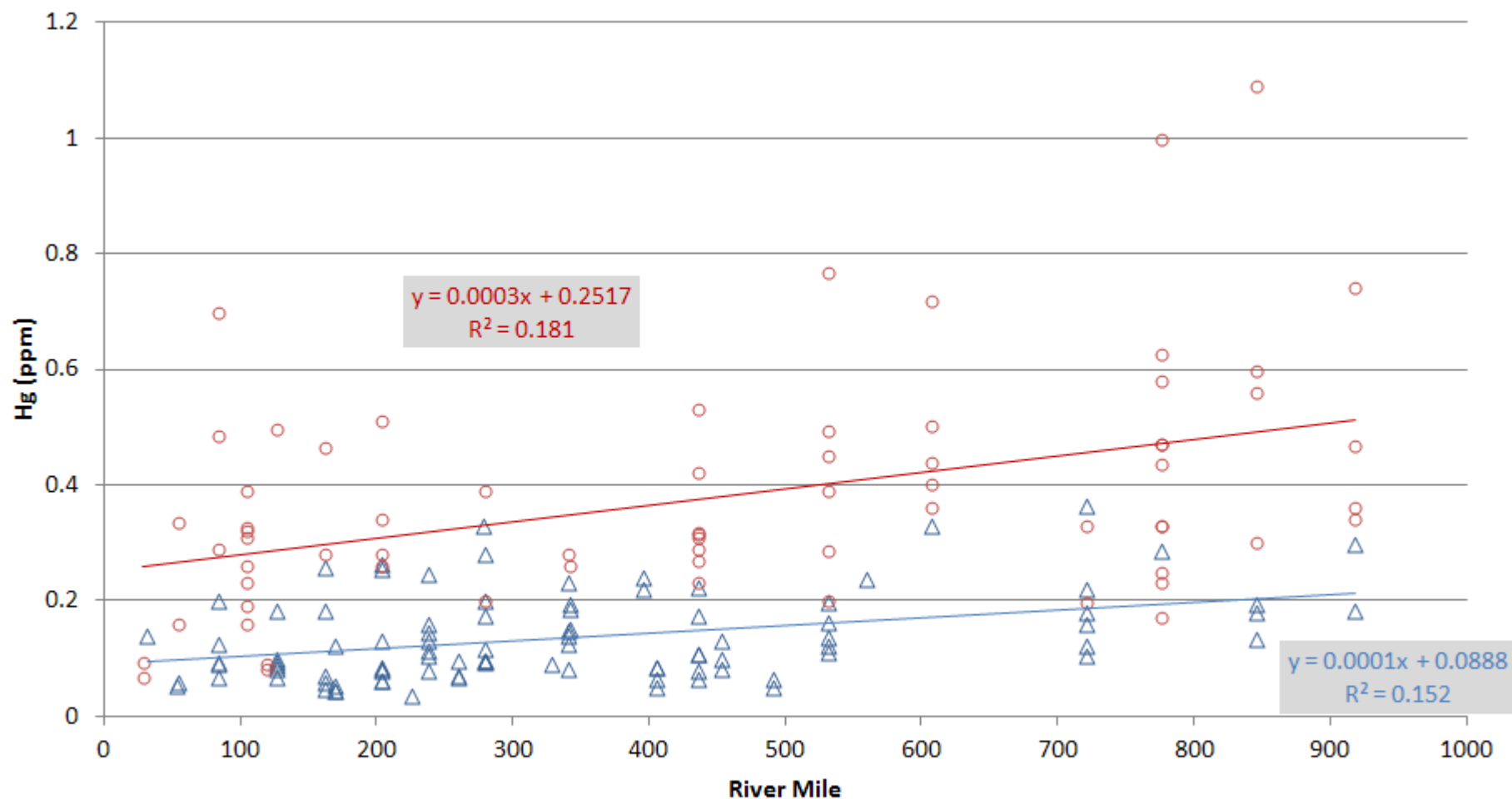
# Size vs TrHg Concentration





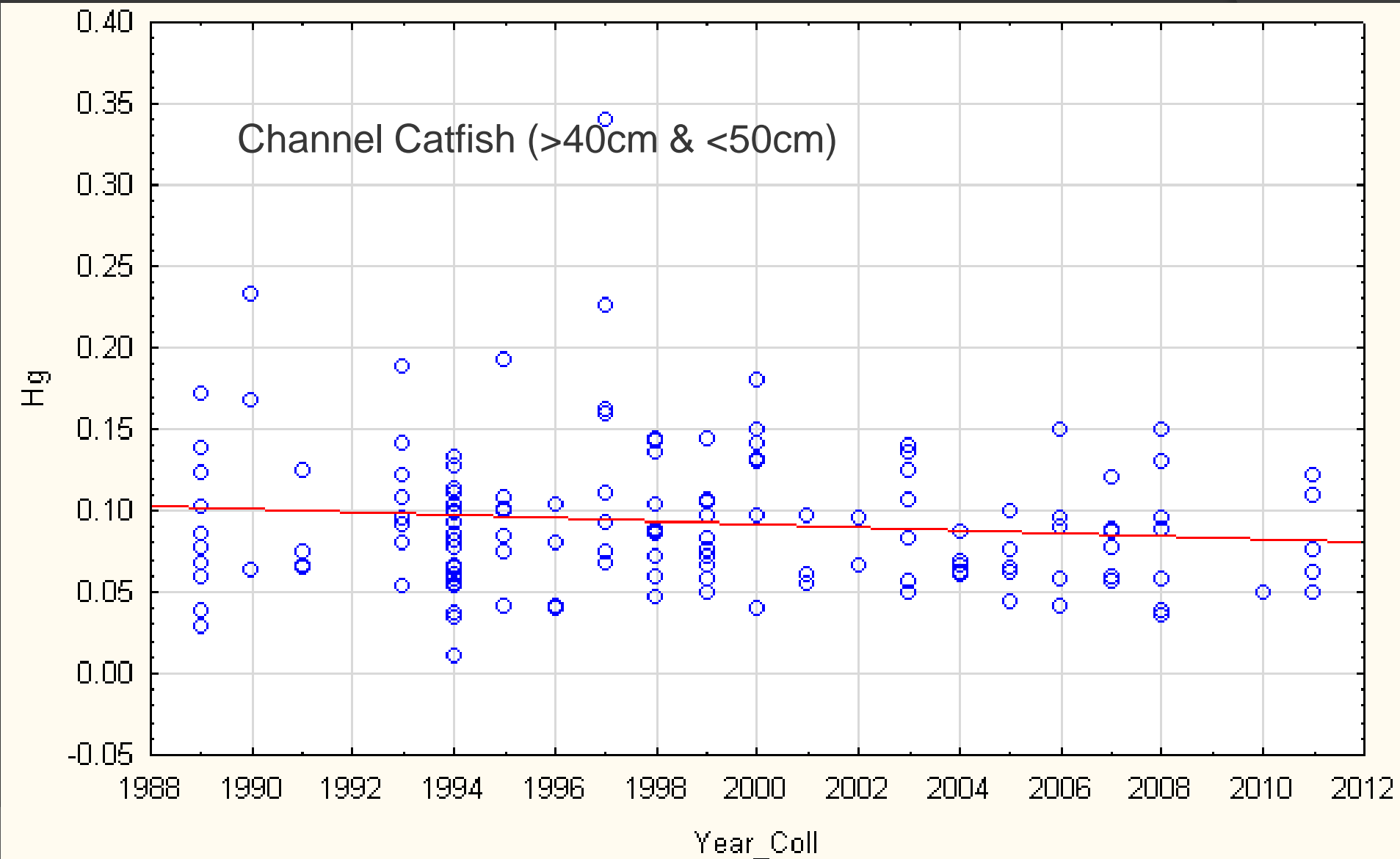
# River mile vs TrHg

Hg in Hybrid Striped Bass  
1993-2011

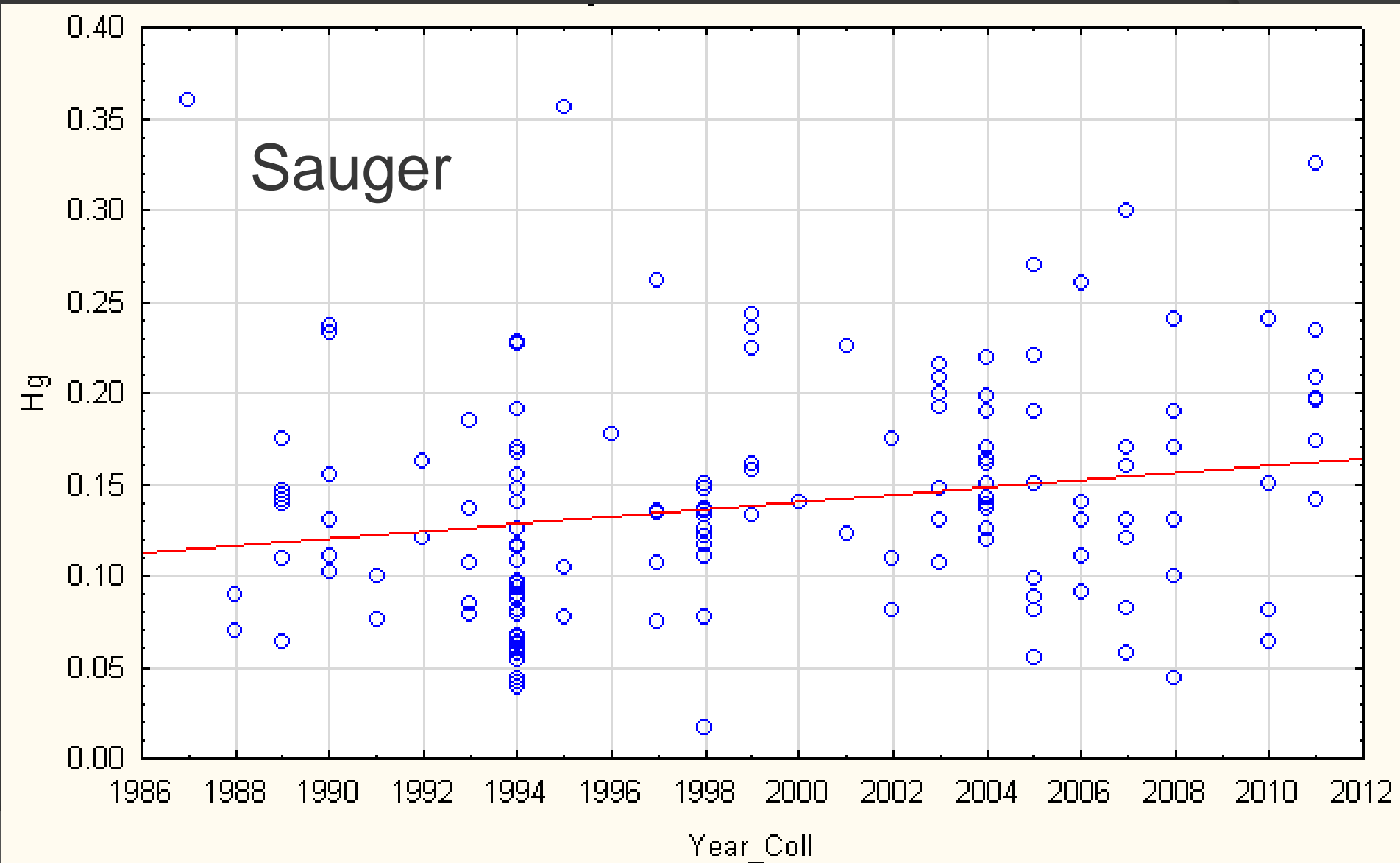


○ 2009-2011  
△ 1993-2008

# Trends over time



# Trends over time



# Summary

- Many confounding factors when considering fish tissue trends
- Depending on the question, TrHg levels in water may be more relevant

## Questions?



# Questions?