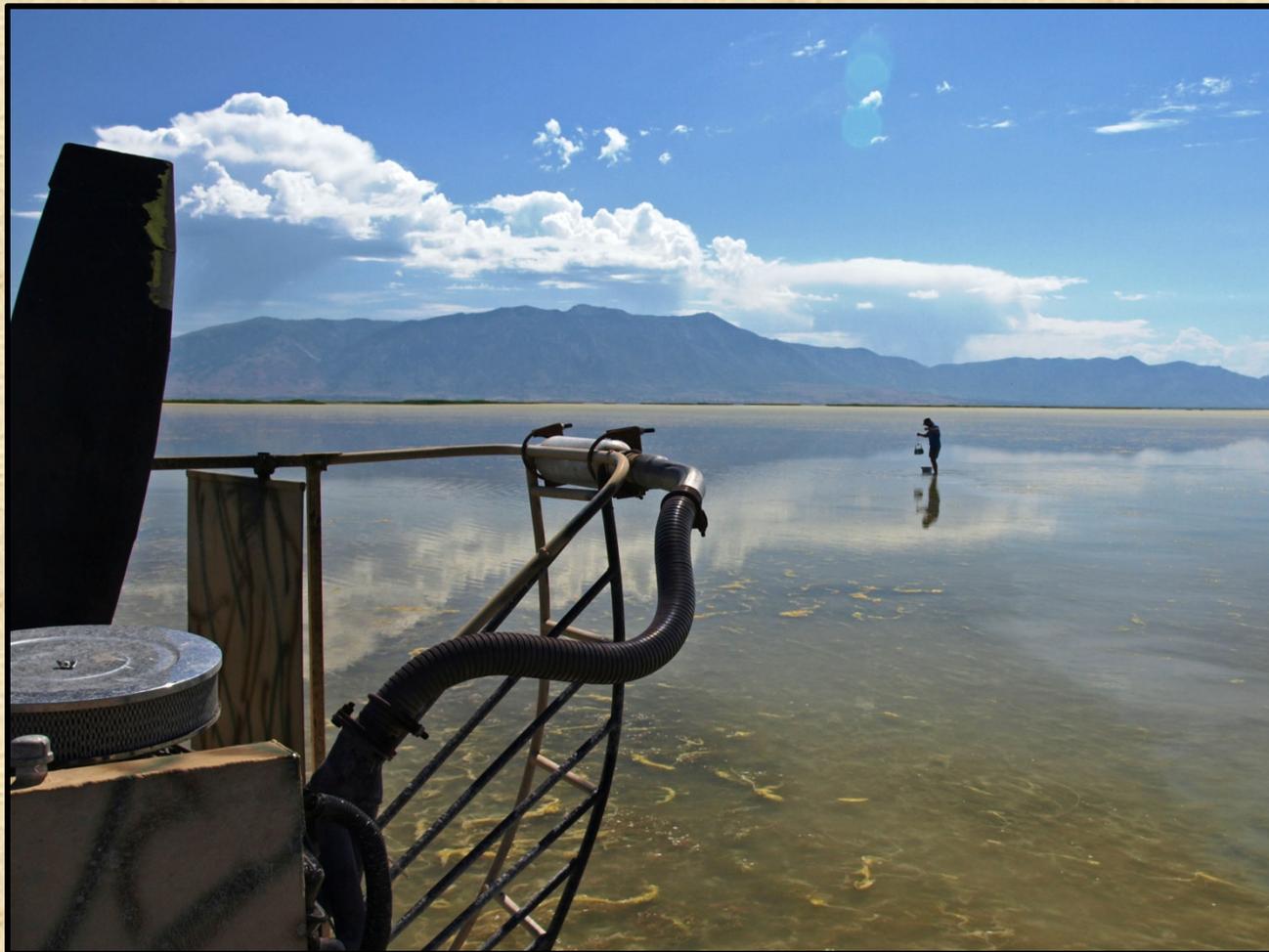
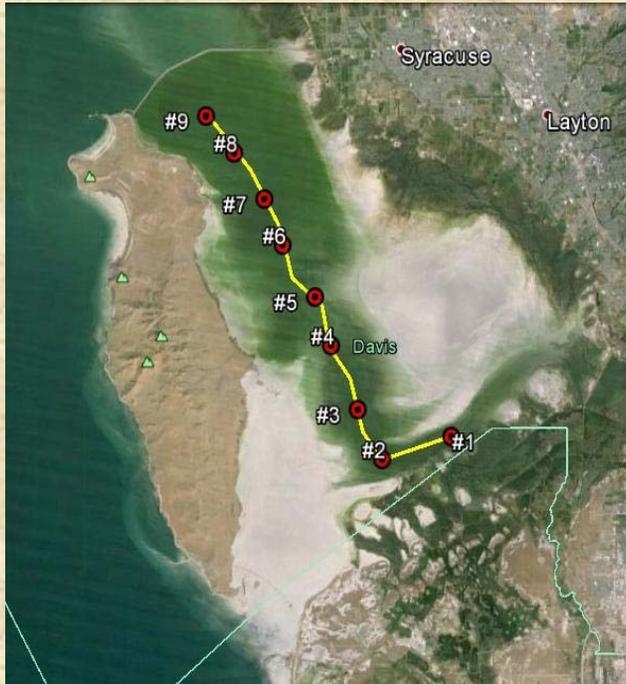


METALS AND METALLOIDS IN FARMINGTON BAY

WAYNE WURTSBAUGH & ERIC MCCULLEY

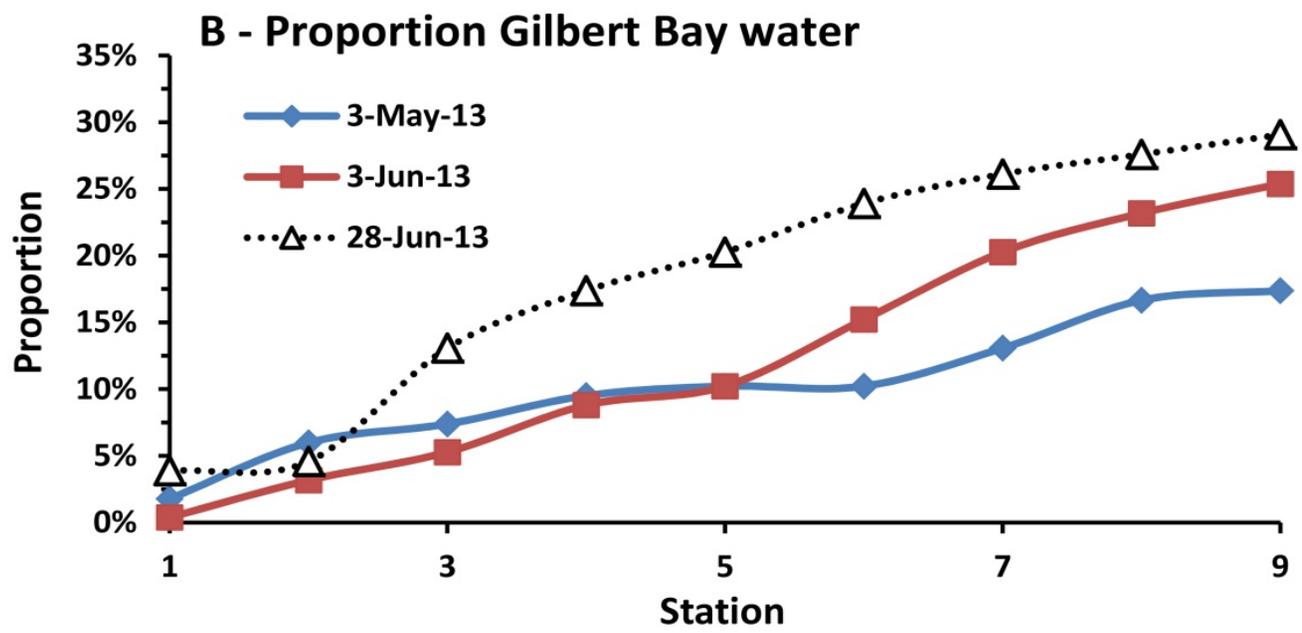
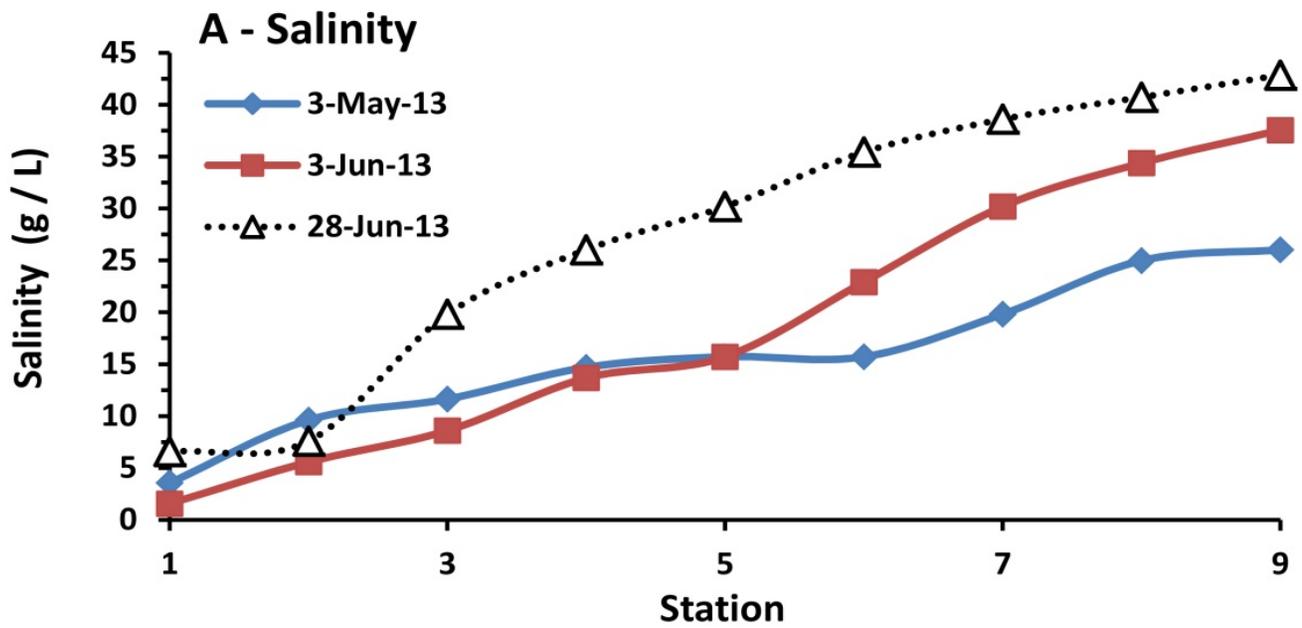


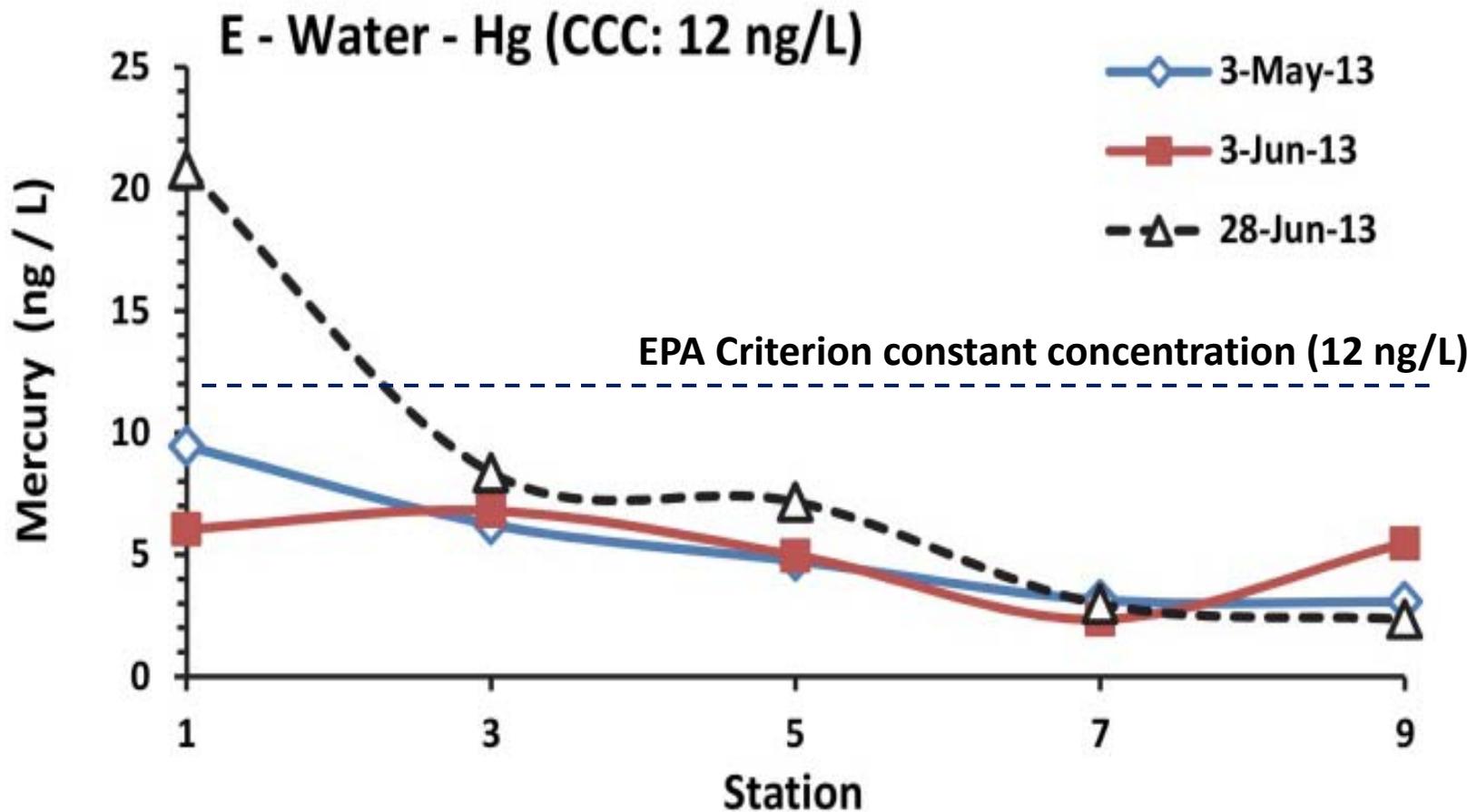
Methods



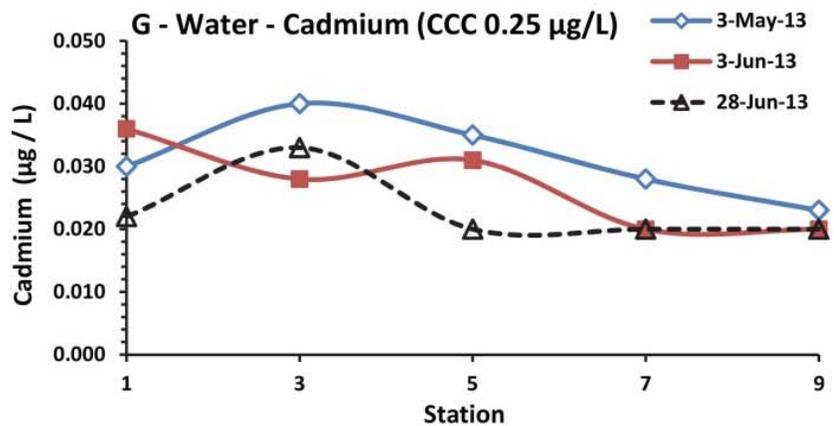
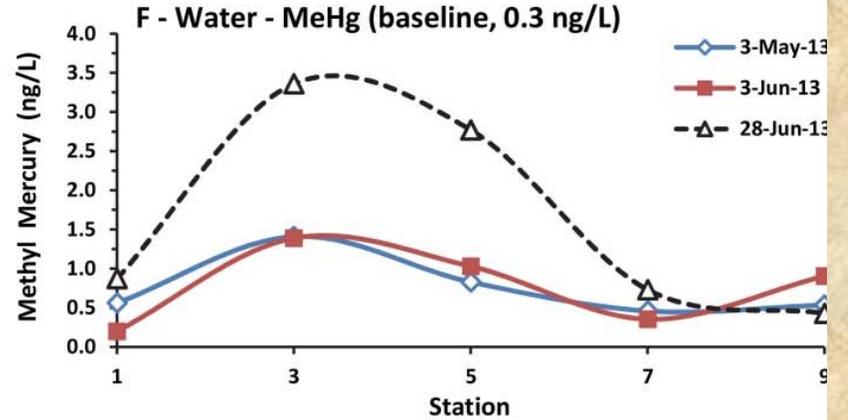
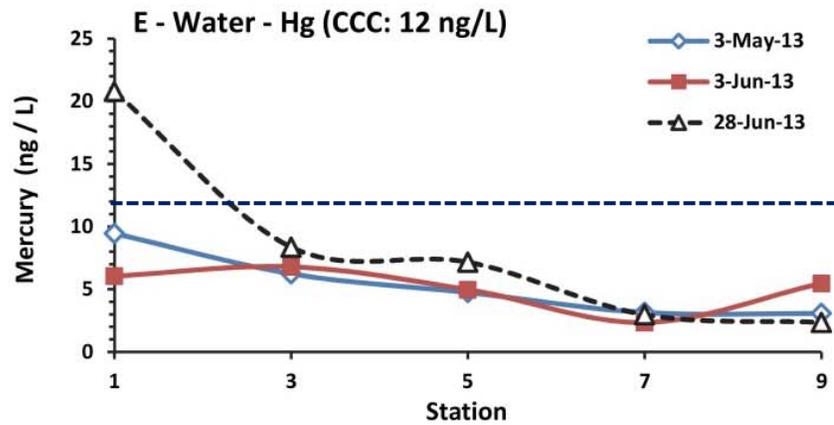
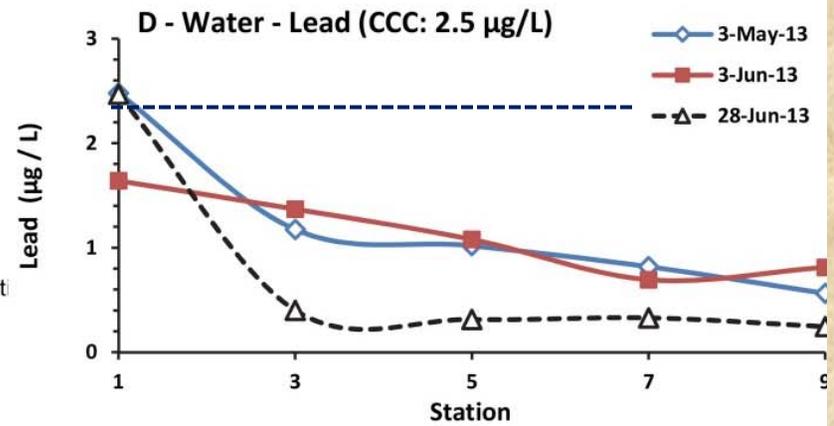
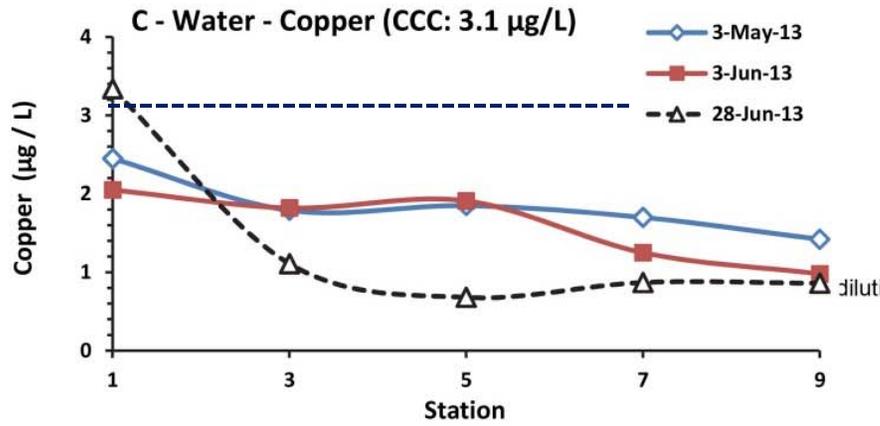
- Three sampling dates in 2013
- 5 Stations along transect
- Se, Cd, Cu, Pb, Ti, Hg, MeHg analyses by Brooks Rand:
 - Water
 - Zooplankton (Se, Hg)
- Metal concentrations in water compared against EPA's Criterion Constant Concentration (CCC)



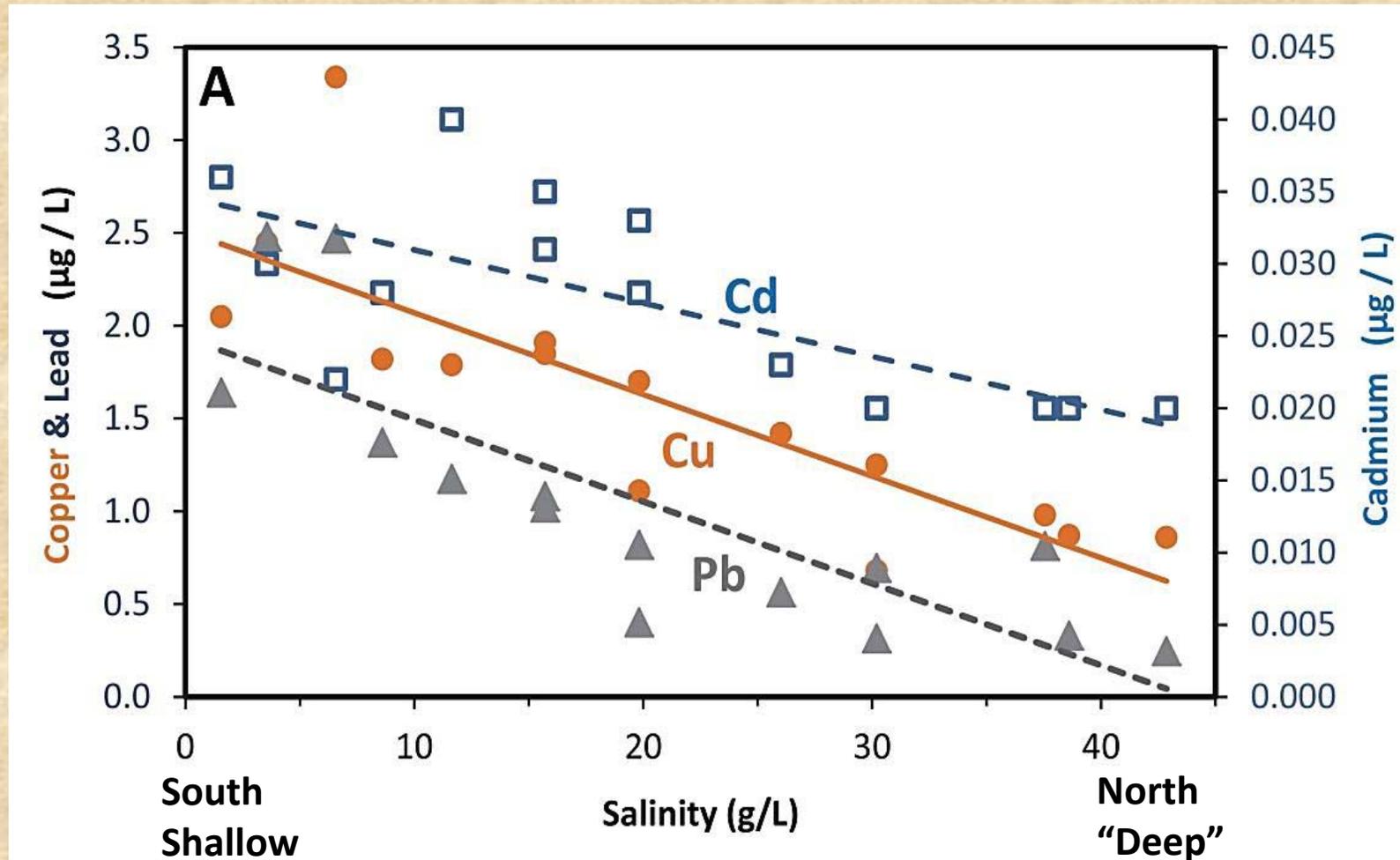




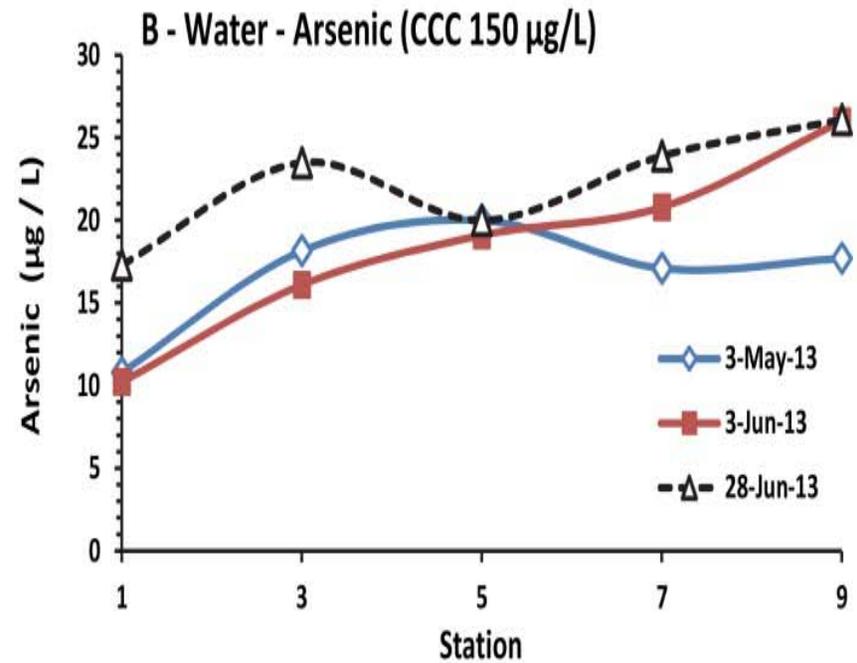
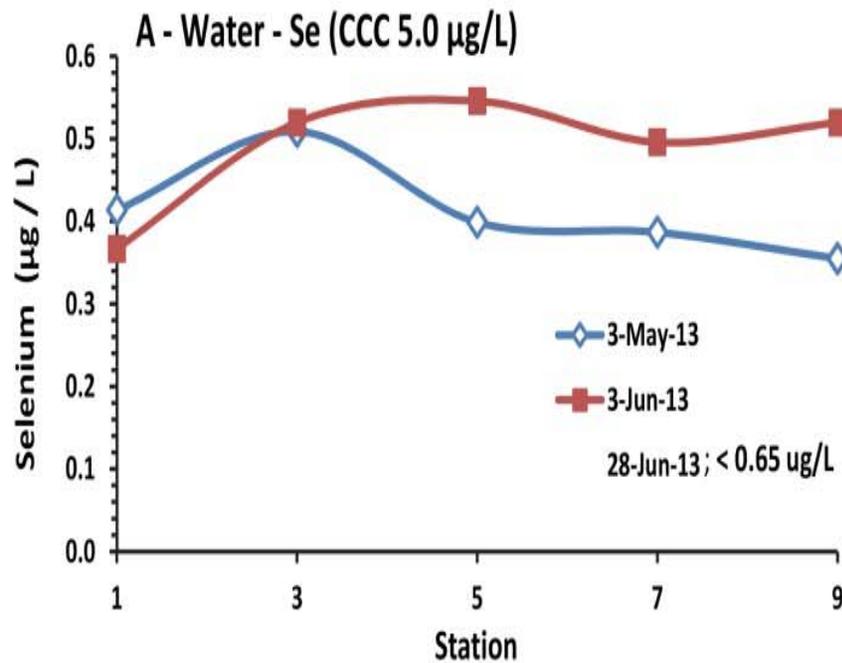
- For many metals, concentrations were higher at the south end of the bay near the discharge of the Northwest Oil Drain (Sewage Canal)
- For mercury, CCC concentration exceeded on 1 date at 1 station

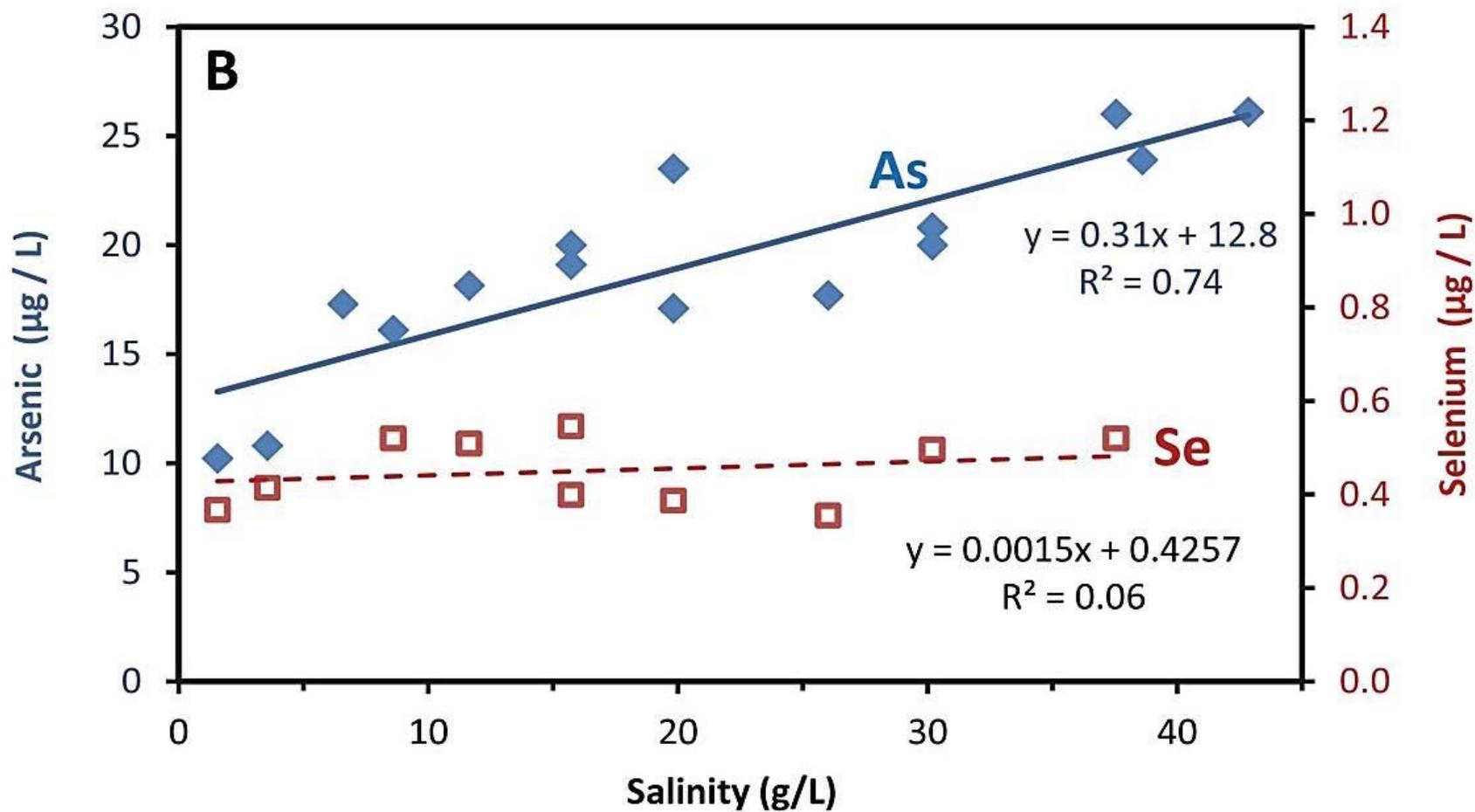


Cadmium, Copper & Lead negatively correlated with salinity levels

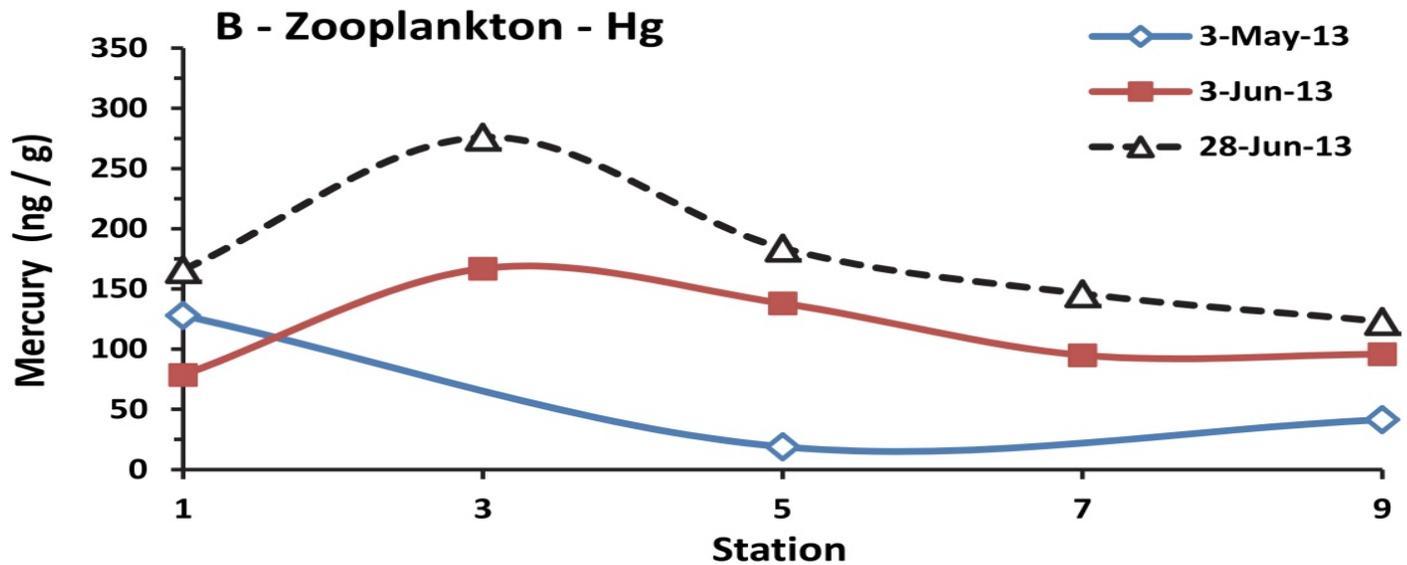
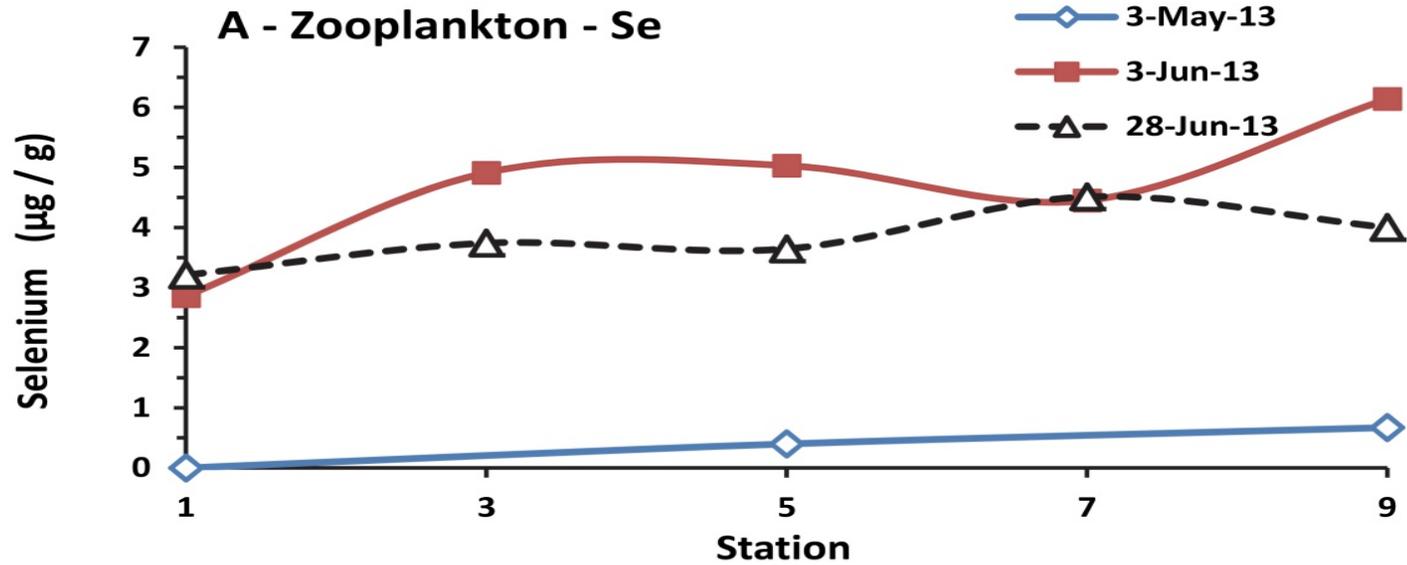


Metalloids, Selenium & Arsenic: Constant or increasing towards north





Zooplankton Se and Hg



Metal Concentrations in Benthic Invertebrates in Farmington Bay (Great Salt Lake) With Respect to Sediments

Carson Richards



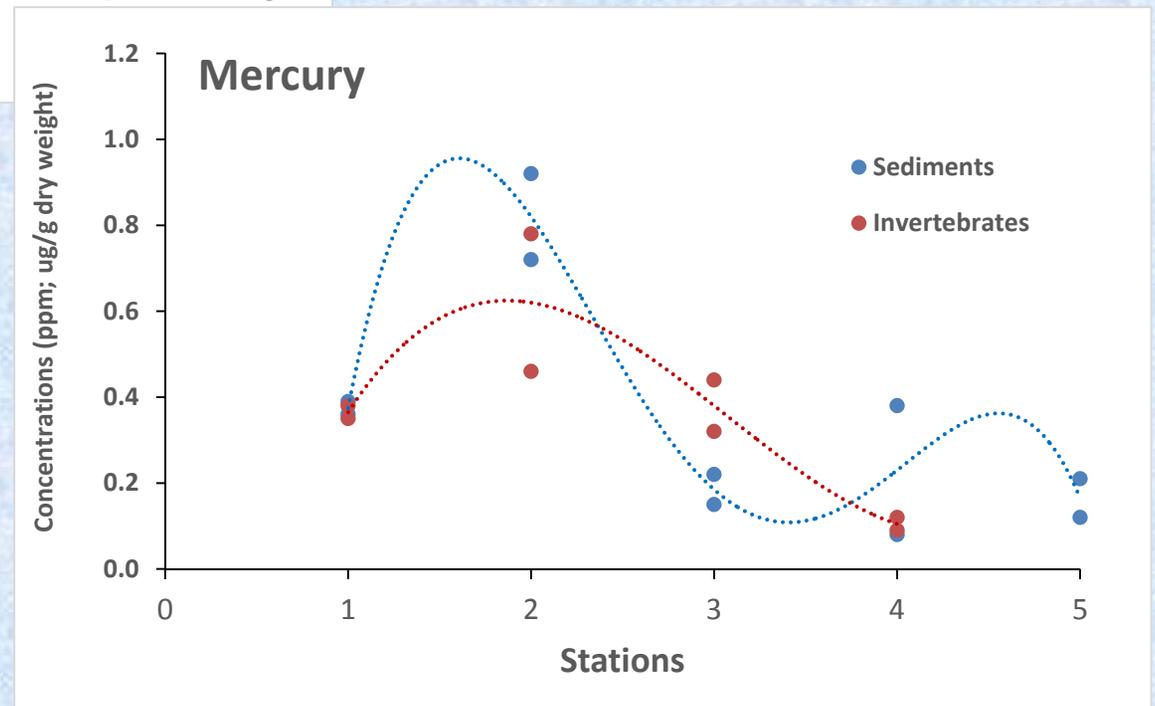
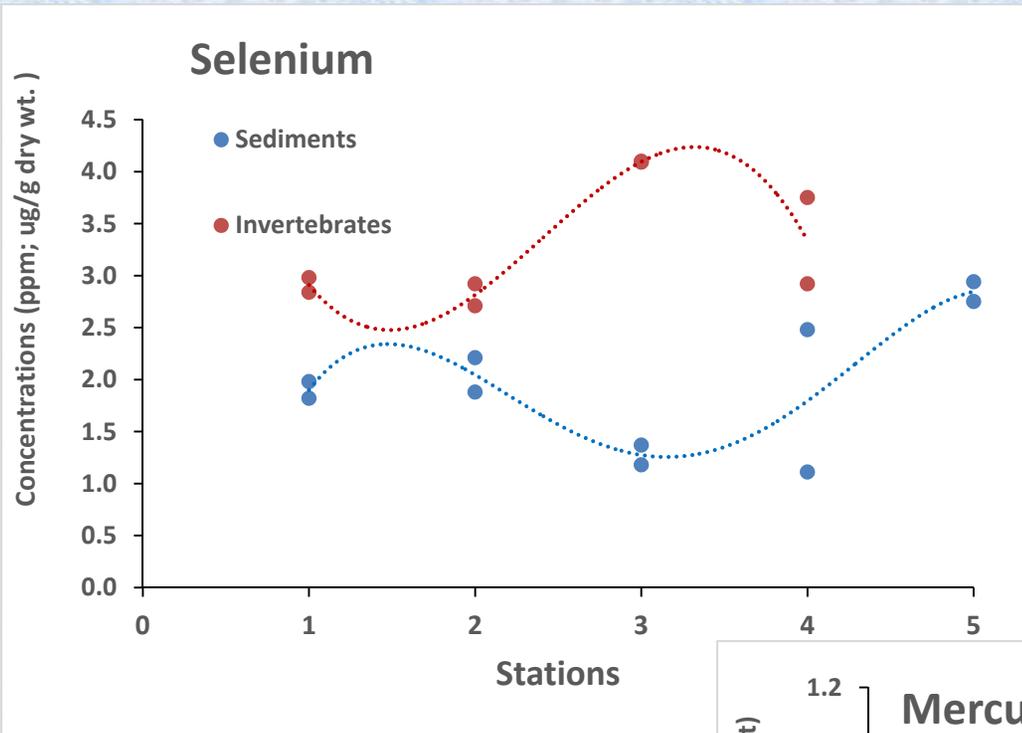
Watershed Sciences Aquatic Ecology Practicum course (2014)

Methods

- 1 Transect, 2 Oct 2014
- 5 Stations, 2 replicates 100 m apart at each station
- Dredge samples
- ICP-mass spec analysis of sediments & chironomid larvae (only abundant invertebrate)
- Levels compared against *threshold effects concentrations* and *probable effects concentrations* for both sediment & invertebrates (Waddell et al. 2009)



Sediments & Invertebrates



Conclusions

- **Concentrations of heavy metals are high and of some concern, particularly in the southern part of Farmington Bay near the Northwest Oil Drain**
- **However, few metals exceed Probable Effects Concentrations**
- **Metalloids (Se, As) constant across the bay or higher in the north, perhaps a consequence of intrusion of Gilbert Bay water**
- **Monitoring of metals should not be done only in the north at the current DWQ stations. This is particularly true since bird population densities are highest in the shallow waters of the south.**