

# Comparison of Lead Concentration Levels in Biological and Sediment Samples in Possession Sound



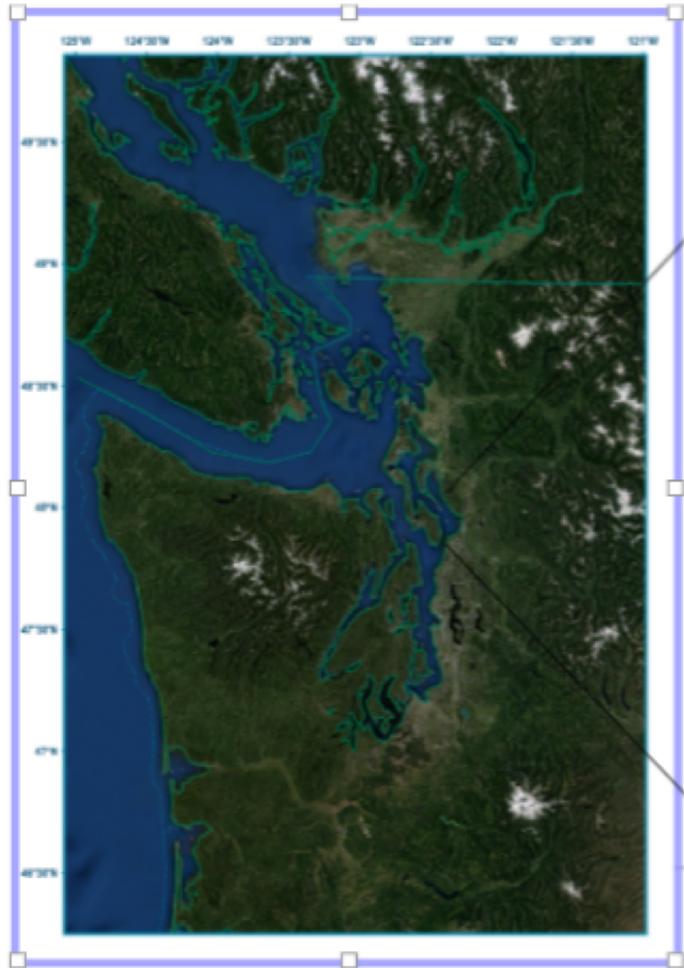
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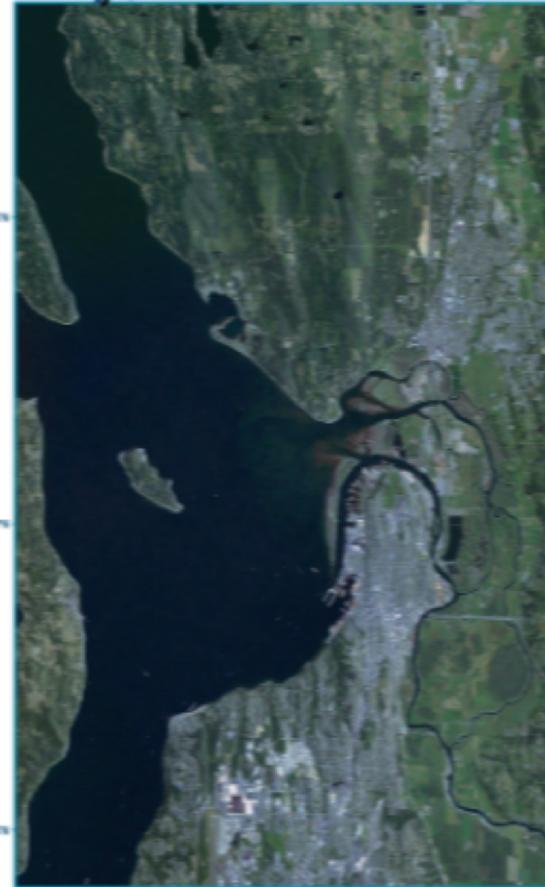


# Developed a Year Long Research Program Focused on collecting oceanographic data in the local

estuary



Salish Sea



Possession Sound

# Possession Sound



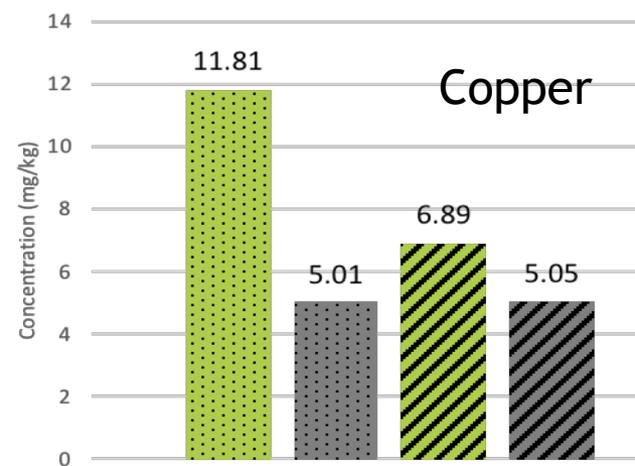
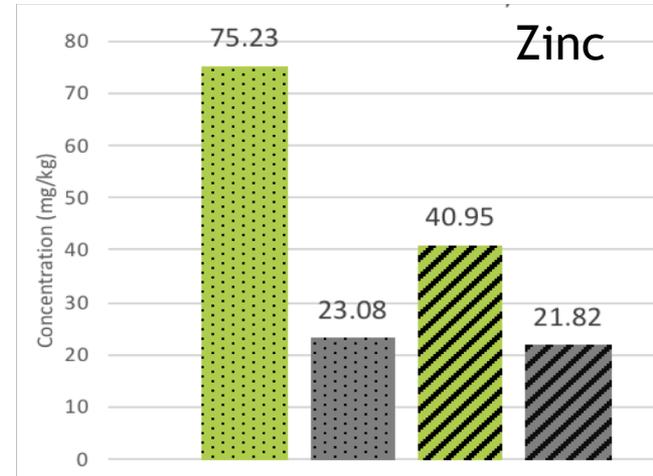
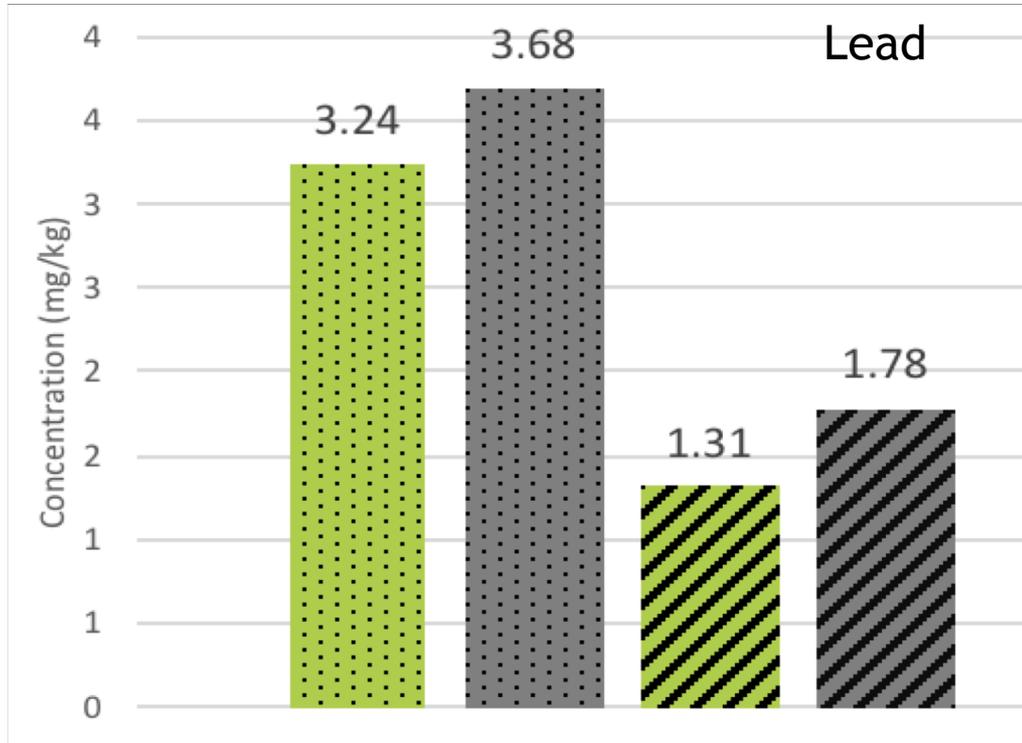


## Previous study:

How does proximity to the Snohomish River estuary affect the concentration of heavy metals in sediments and Eelgrass?

# Previous Results

## Mean Metal Concentrations from Sediment and Eelgrass Blades



■ MBT (Eelgrass)   ■ MBT (Sediment)   ■ Whidbey (Eelgrass)   ■ Whidbey (Sediment)

# Current Study

## Previous Finding

- ▶ Lead behaves differently than copper and zinc.

## Research Question

- ▶ Will further study show that lead concentration levels are higher in eelgrass than in sediment, and how do lead concentrations compare across sediment, eelgrass and benthic invertebrates?

# Possession Sound

## Study Sites

- Mount Baker Terminal (MBT)
- Whidbey

## Sample Types

- Sediment
- Eelgrass (*Zostera marina*)
- Benthic Invertebrates

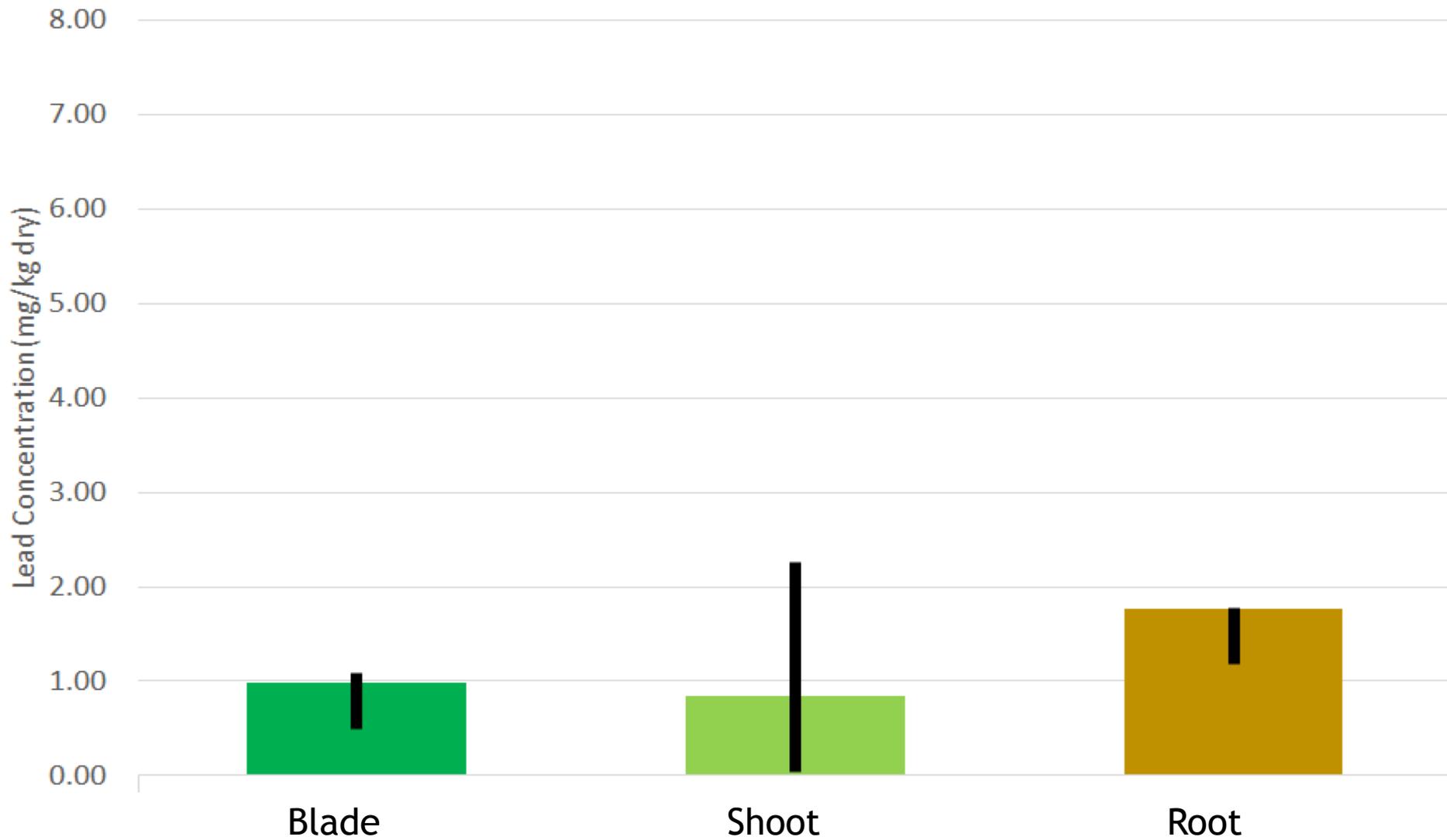


## Eelgrass

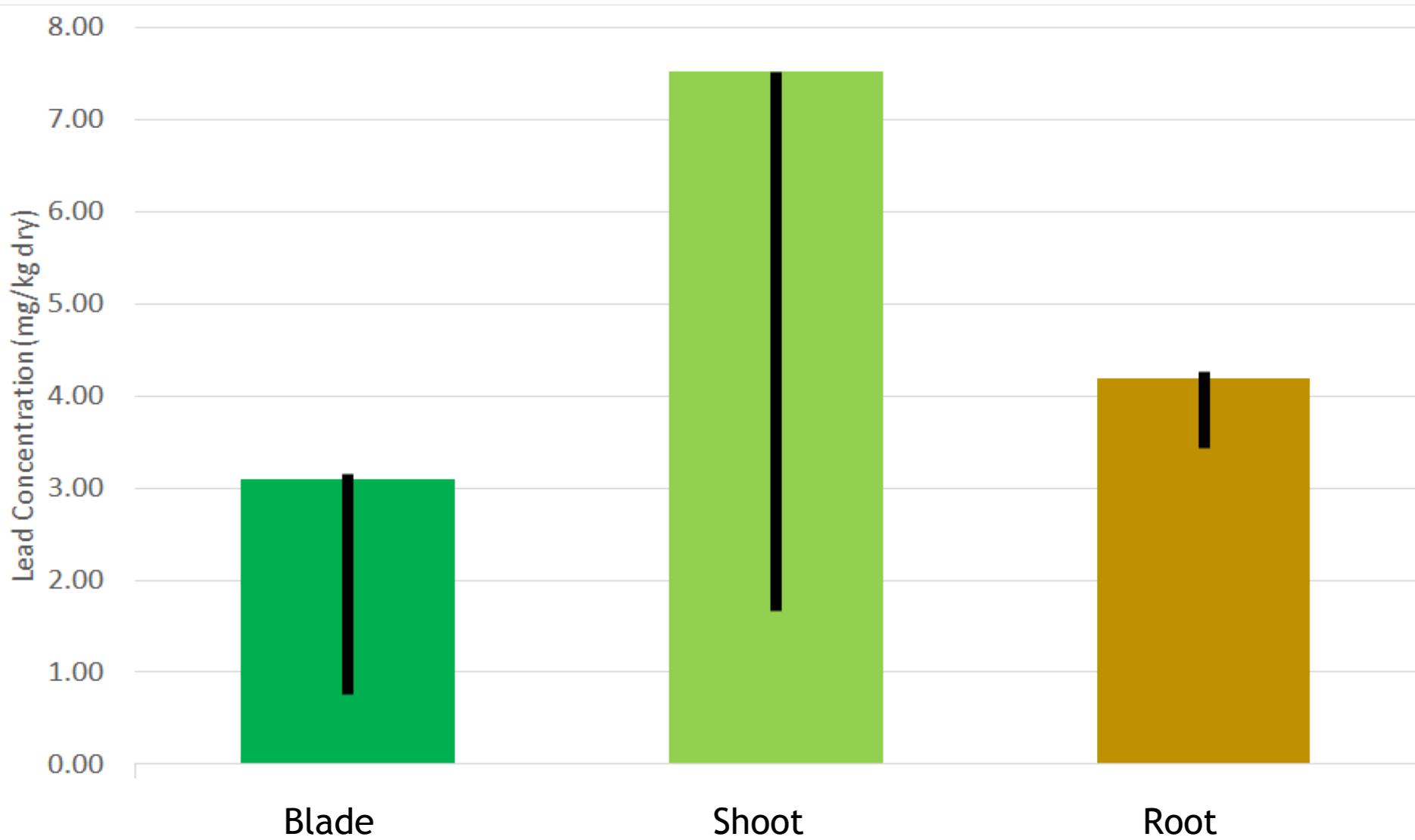
- Root/rhizome: Subsurface portions
- Shoot: 2 inches above the root/rhizome
- Blade: Everything else



## Whidbey Mean Lead Concentrations in Eelgrass

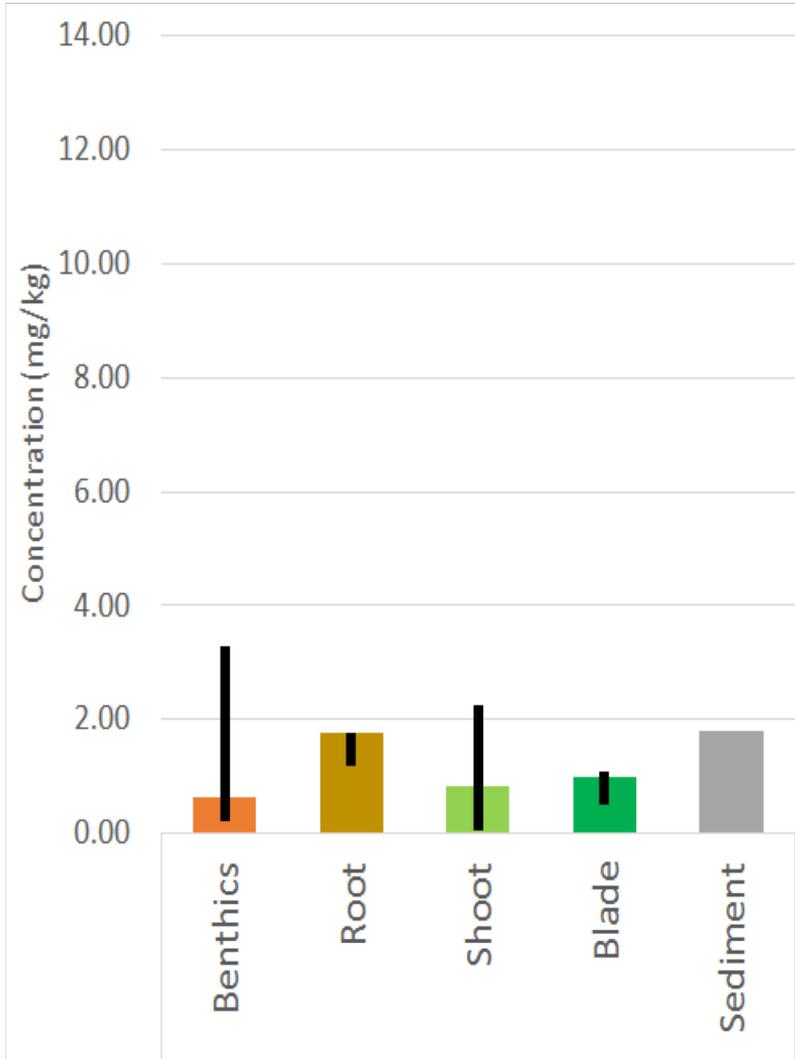


## MBT Mean Lead Concentrations in Eelgrass

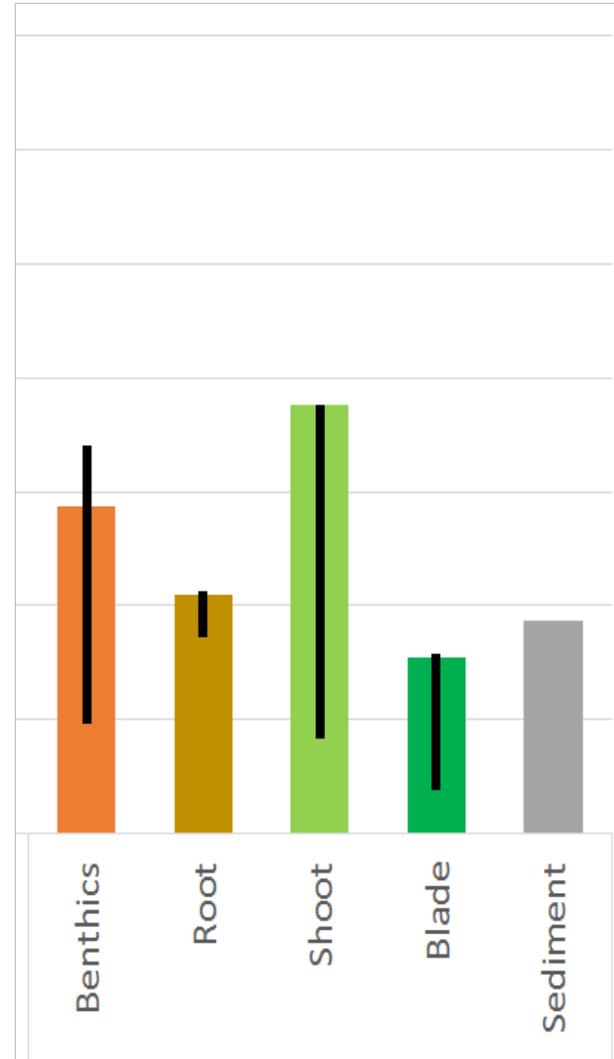


# Mean Lead Concentrations

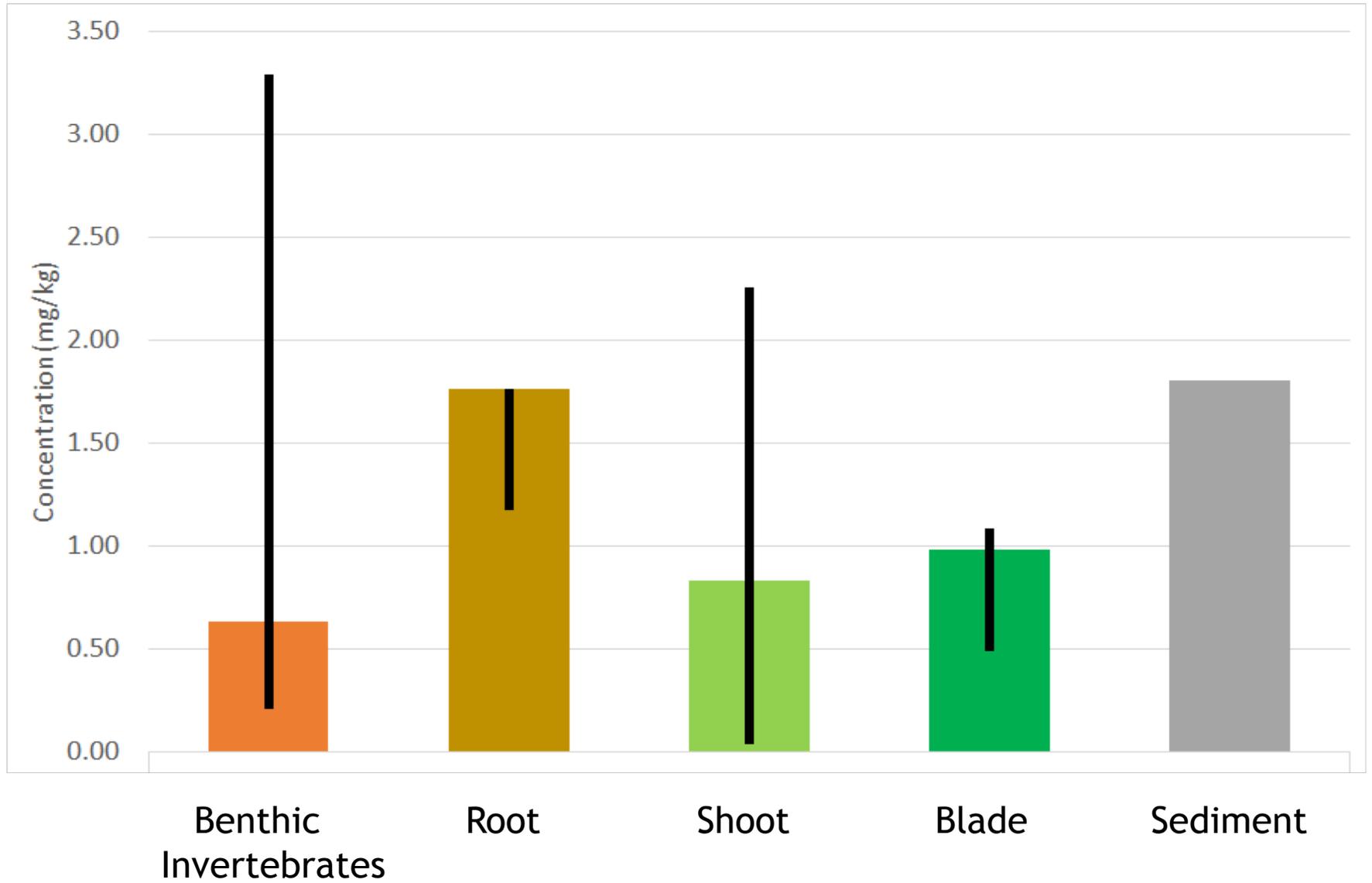
## Whidbey



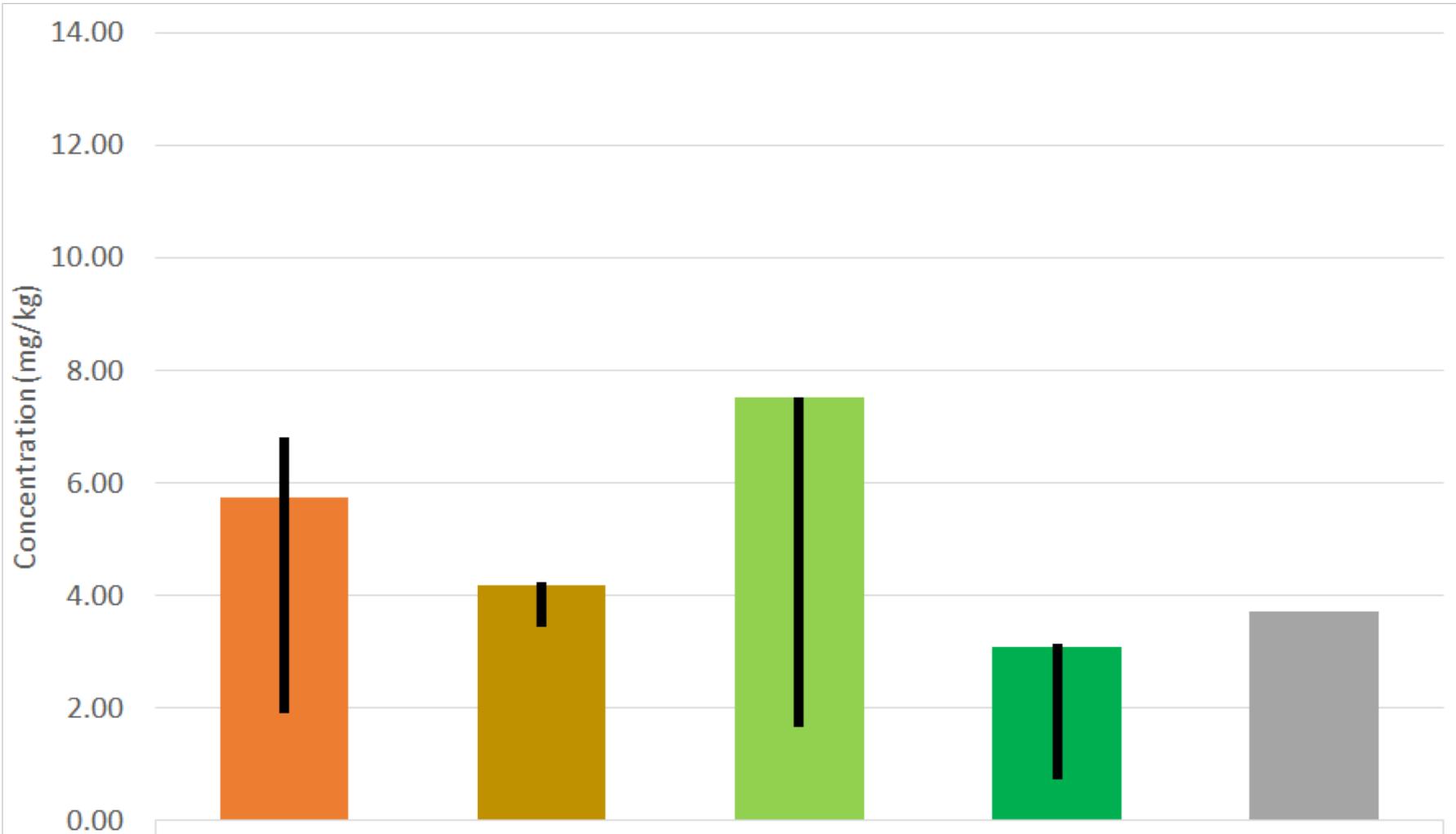
## MBT



# Whidbey Mean Lead Concentrations



# MBT Mean Lead Concentrations



Benthic  
Invertebrates

Root

Shoot

Blade

Sediment

# Previous Study's Findings

- ▶ Could be due to error
- ▶ Not enough data
- ▶ Lead behaves differently
  - Bioaccumulates more in eelgrass with age.
  - Lead takes longer to bioaccumulate in eelgrass than other heavy metals
- ▶ Benthic Invertebrates:
  - Shell structure of calcium carbonate is isostructural with lead carbonate

## Further Study

- ▶ More data collection and further analysis of trends

# Appreciation

## Thank You:

A special thanks to our collaborators, mentors, and fellow students for this opportunity.

