Acknowledgements

• US Bureau of Reclamation
• City of Las Vegas
• Nevada Dept of Wildlife
• Bio-West, Inc.
Background-Selenium

• Inorganic that occurs naturally in soil
• Leaches easily
• Is essential for bodily function in small quantities
• Toxic effects in larger quantities
Las Vegas Wash Watershed

Four tributaries under consideration of being listed on the 303(d) impairment list.
Background-2003-2009 Se Source Study

2008 Selenium Concentration (µg/L)
- 1.75 - 10.00
- 10.20 - 20.00
- 20.20 - 30.00
- 32.50 - 40.00
- 41.10 - 55.00

+ Dewater Samples
Bioassessment Fish Tissue Study

• Three locations
• EPA chronic criterion value: 7.91 µg/g
Hamilton, et al. 2004 targeted larvae stage as most at risk of Se detrimental effects
Methods

- Monthly collections/24 months
- Spawning Sites
  - Las Vegas Bay
  - Overton Arm
Results

Las Vegas Bay

Hamilton et al. threshold of 4.6 ppm
Overton Arm

Period of larval hatching

Hamilton et al. threshold of 4.6 ppm

Results

Zooplankton (ppm) vs Background (ppb)

0 0.5 1 1.5 2 2.5

0 1 2 3 4 5 6

Results

Period of larval hatching

Hamilton et al threshold of 4.6 ppm

Las Vegas Bay Zooplankton (bbm)
Overton Zooplankton (ppm)
Las Vegas Bay Background (ppb)
Overton Background (ppb)
Questions?