Tamarisk Feeding Invertebrates of the Las Vegas Wash

January 24, 2012

Background

- Las Vegas Wash
  - Historically an ephemeral stream, now base flows exceed Muddy and Virgin River combined
  - Primarily treated wastewater
  - Prior to restoration activities beginning in 1999, had over 1500 acres of salt cedar
    - Now less than 200

Invertebrates of LV Wash

- Very few studies
  - Benthic macroinvertebrates sampled annually since 2000
  - Wiesenborn 2005
    - First survey of terrestrial invertebrates
  - Nelson 2009
    - Compared restored areas to non-native
  - Eckberg and Foster 2011
  - Annual inventory report
    - Available at www.lvwash.org

Known Tamarisk Feeders

- Armored scale (*Chionaspis* sp.)
- Tamarisk leafhopper (*Opsius stactogalus*)
- Splendid tamarisk weevil (*Coniatus splendidulus*)
- Tamarisk leaf beetle (*Diorhabda carinulata*)
  - Expected soon

Armored Scale (*Chionaspis* sp.)

Tamarisk Leafhopper (*Opsius stactogalus*)

Splendid Tamarisk Weevil (*Coniatus splendidulus*)

Tamarisk Leaf Beetle (*Diorhabda carinulata*)

Tamarisk Leaf Beetle (*Diorhabda carinulata*)

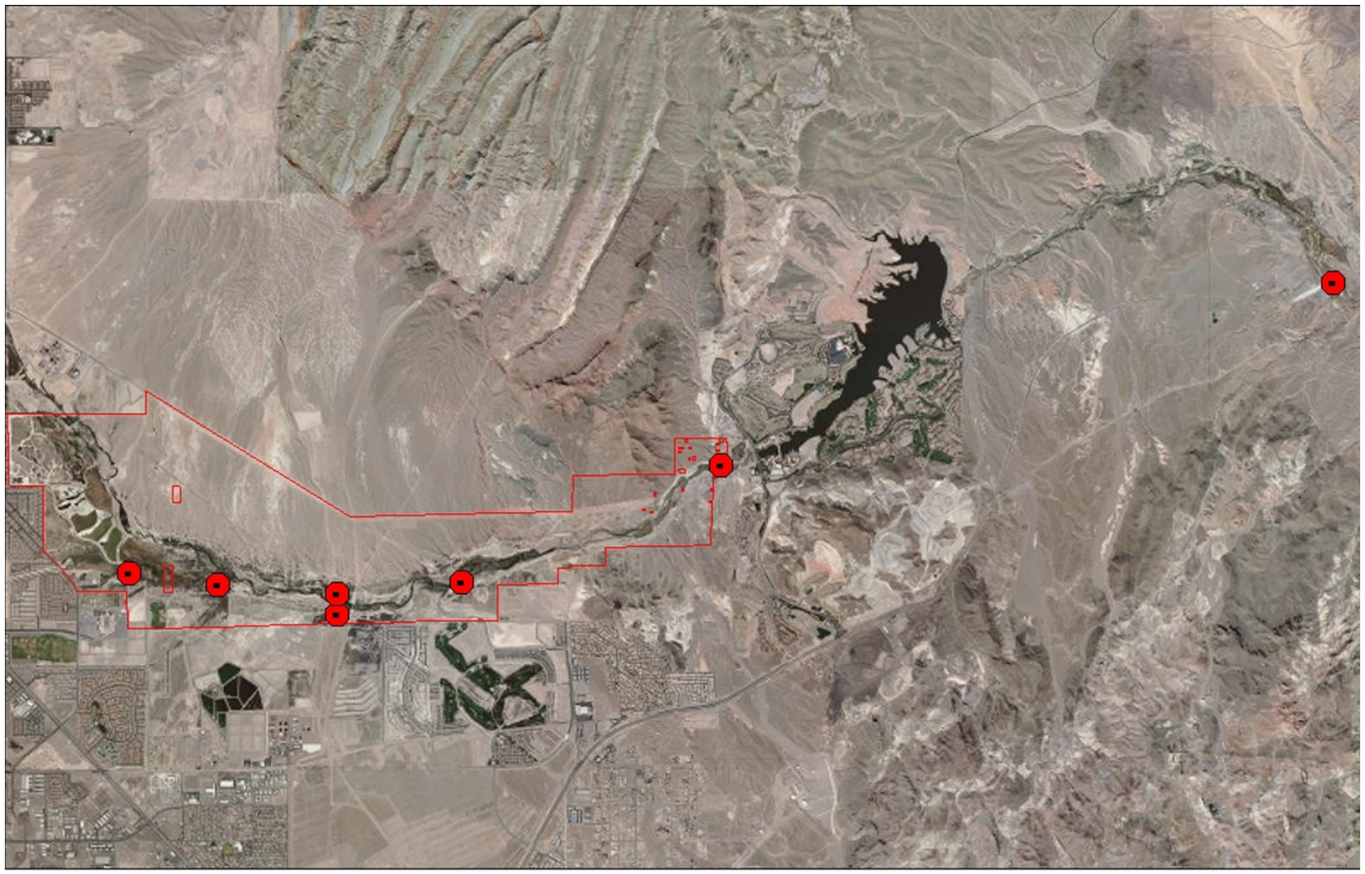
Research Questions

- What is the current distribution of known tamarisk feeders along the Wash?
- Is their population increasing or decreasing?
- What impact will the arrival of the tamarisk leaf beetle have on existing species?

Methods

- Follow current Tamarisk Coalition procedures for sampling
  - Allows for data sharing
  - Seven locations along the Wash including Las Vegas Bay at Lake Mead
  - 25 sweeps per location – 5 sweeps spaced 5 m apart with 38 cm sweep net
- Sampled in May, July, and September

Sampling Locations



Sampling Locations – Las Vegas Bay

Sampling Locations – Bostick Weir

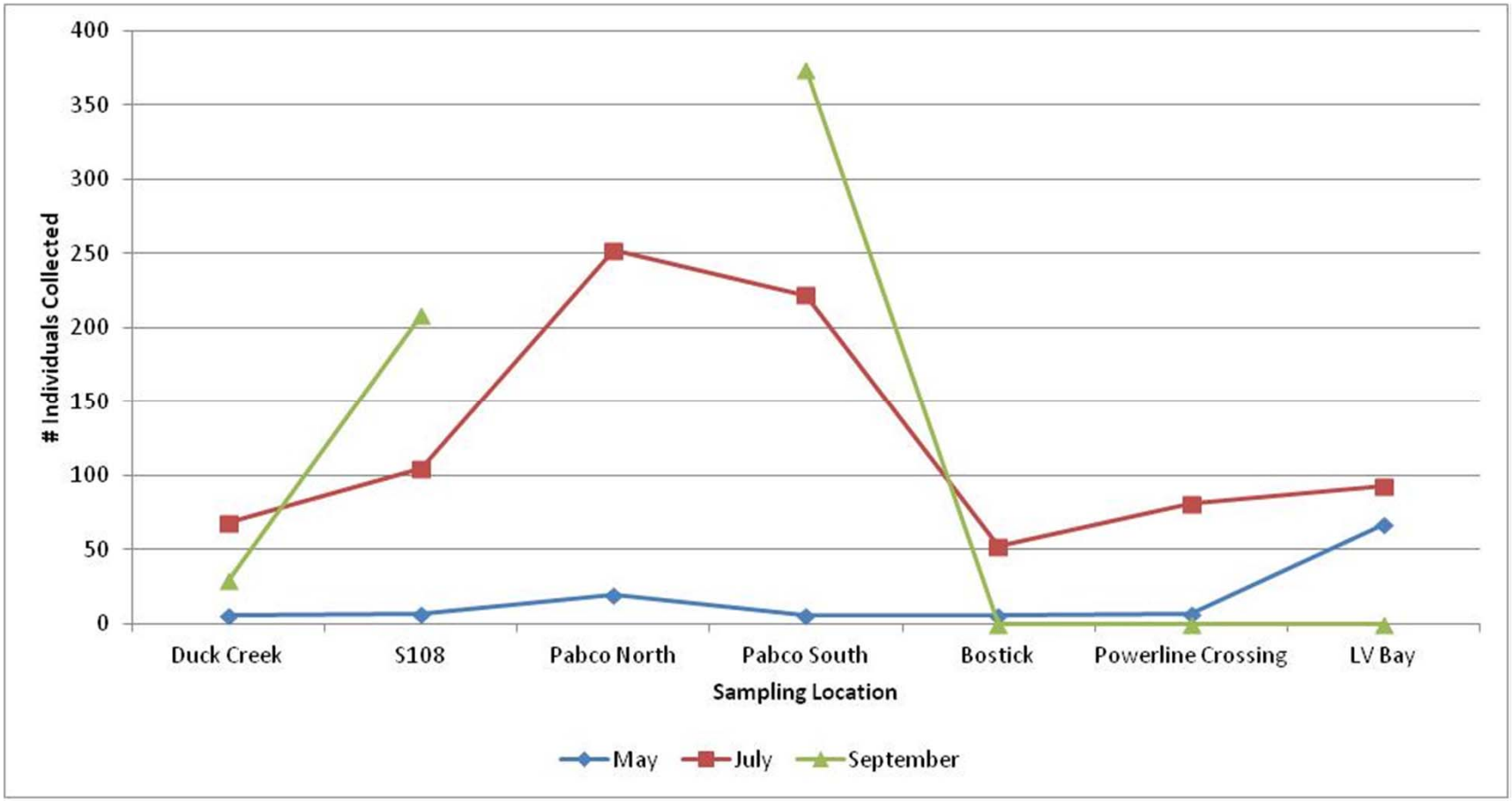
Sampling Locations – Pabco Road Weir

Results – start counting!

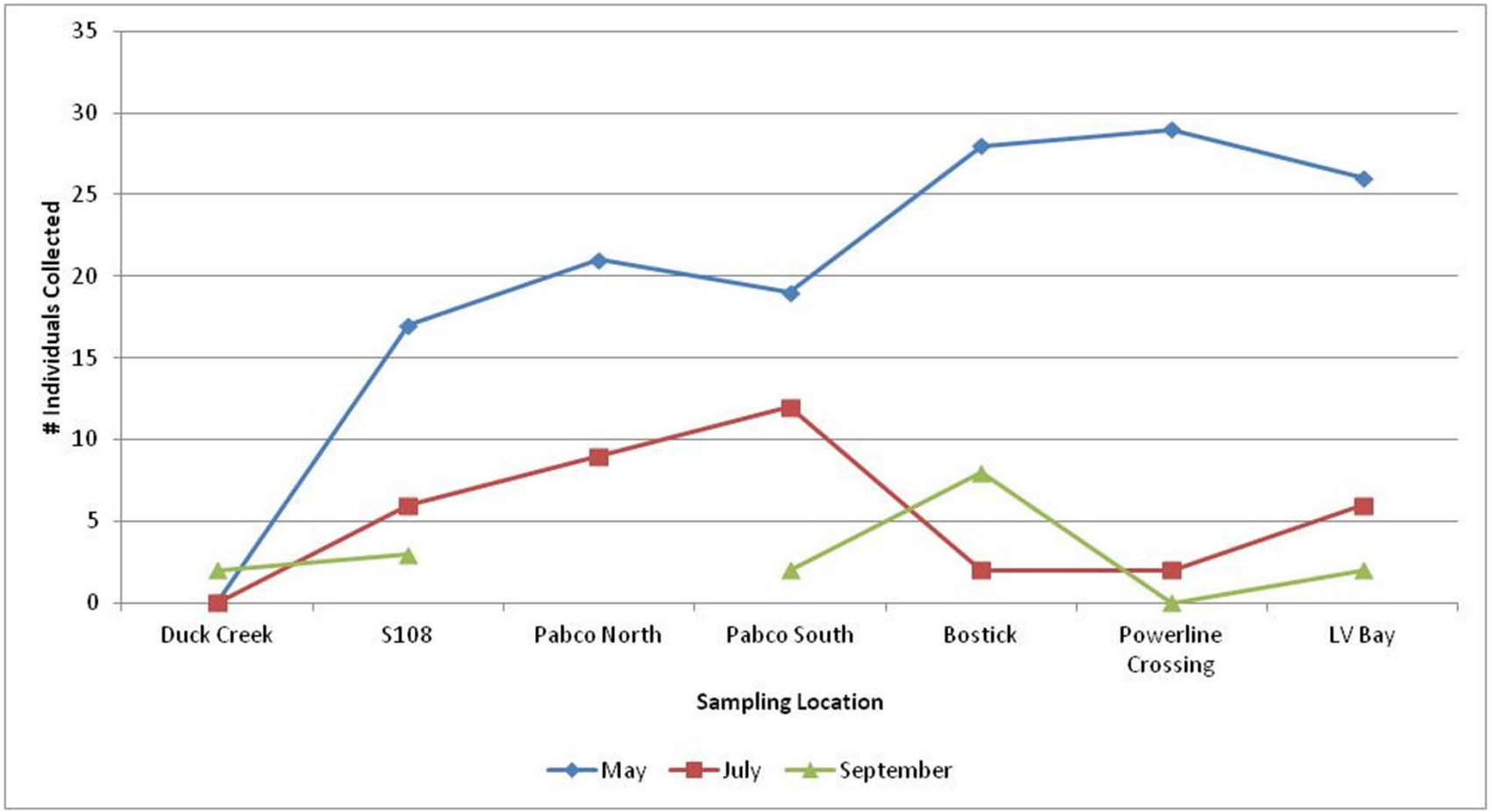
Results

- No tamarisk leaf beetle
  - As expected
- Tamarisk leafhopper and splendid tamarisk weevil found in all sampling locations
  - Potential seasonal and geographical patterns
- Minimal defoliation
  - Less than 10% at any given sampling

Tamarisk Leafhopper Results



Splendid Tamarisk Weevil Results



Preliminary Conclusions

- Tamarisk leafhopper population increased as temperatures increased
  - Highest in areas that had high tamarisk density
- Splendid tamarisk weevil decreased as temperatures increased
  - Equally distributed across tamarisk areas

Upcoming…

- Tamarisk leaf beetle expected in 2012
- Follow-up surveys should indicate how species interact
  - What will the impact on tamarisk be

Questions?

Las Vegas Wash Coordination Committee

www.lvwash.org