Distribution of Native and Invasive Crayfishes in Oregon's Willamette Valley: Exploring Relationships Between Invasive Crayfish and Bullfrogs

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Hypotheses

- Interactions between anthropogenic disturbances negatively affect native crayfish
- Bullfrog predation upon native crayfish has facilitated invasion of exotic crayfish

Assumptions

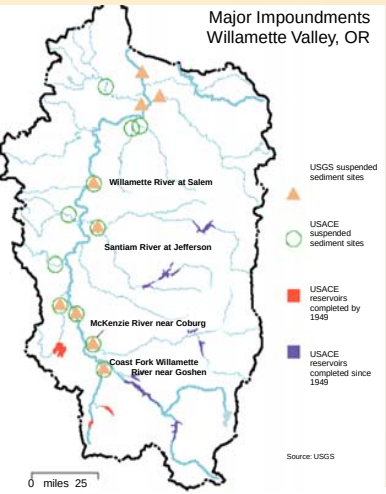
- Bullfrogs are widespread and present in permanent water bodies
- Bullfrogs are effective crayfish predators in the Willamette Valley
- The Willamette Valley watershed is highly impacted, stemming from agricultural and urban water use

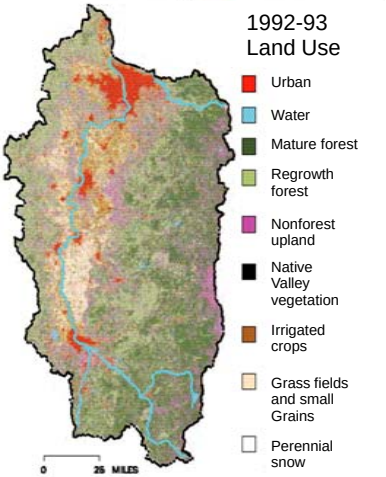
Methods

- Field Survey
  1. Visual snorkel assessment
  2. Trapping
- Laboratory Behavioral Assays
  1. Individual
  2. Intra & interspecific agonism
  3. Mesocosm predation assessment
- GIS Modeling
  1. Develop range maps for crayfish and Bullfrogs

Predictions

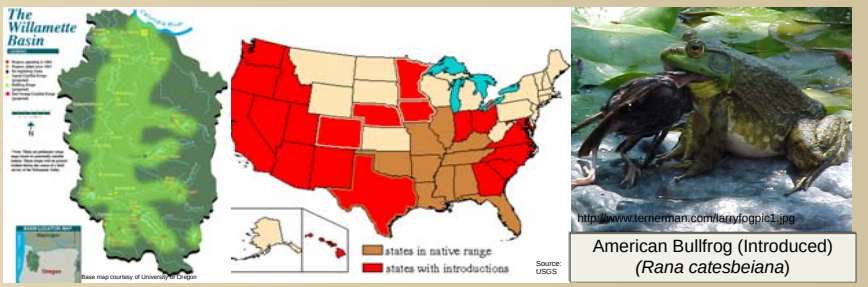
- Signal Crayfish distribution is a function of habitat complexity
- Red Swamp Crayfish will be better at colonizing and defending habitat than Signal Crayfish
- Bullfrog predation disproportionately affects Signal Crayfish



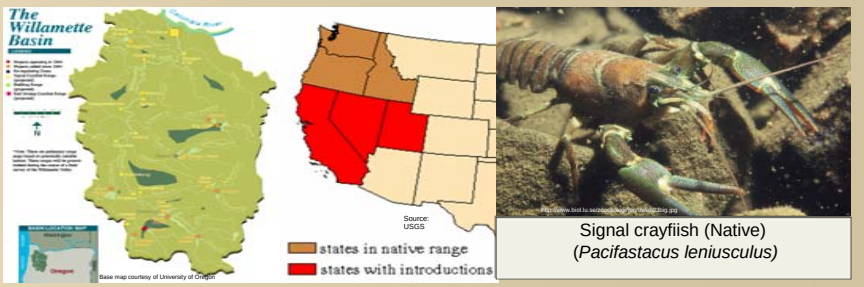


http://pubs.usgs.gov/circ/circ1161/nawqa91-12.gif

Base map courtesy of University of Oregon



American Bullfrog (Introduced)
(*Rana catesbeiana*)



Signal crayfiish (Native)
(*Pacifastacus leniusculus)*

Red Swamp crayfish (Introduced)
(Procambarus clarkii)

Poster presented at the First International Conference on te Cqoui Frog, Feb 7-9, 2008, Hilo, HI