Oregon Chub (and those other off-channel habitat fish)

Beaver Management SE OR ESA-listed fishes
Borax Lake Chub, Foskett Speckled Dace, Hutton Tui Chub

Brian Bangs
Corvallis, Oregon
–69 fish species in the Willamette

• 36 native
• 33 nonnative

Oregon Chub: only fish endemic to the Willamette River basin
Film by Freshwaters Illustrated
Habitat Loss (from Sedell & Froggatt 1984)

~75% Reduction in shoreline
Reasons for decline
Reasons for decline

- Half of the fish in the Willamette are non-native
- Largemouth bass, bluegill (and other sunfish)
• Petition to list: 1990
• Multi-agency Conservation Agreement: 1992
• Listed as Endangered: 1993
• Recovery Plan: 1998
• Downlisted to Threatened: 2010
• Delisted: 2015 First fish recovered under ESA
2010 Downlisting
Describe relationships between
• River flows,
• Habitat characteristics,
• Temperature regimes,
• Timing, frequency, duration, magnitude of connection, and
• Fish assemblage structure in off-channel habitats
Hydrologic Connectivity

What do we mean?

• Open water, direct connection to surrounding waterbodies
• Sites connect in different ways
  • Sloughs: high water flows through the site
  • Alcoves: only connect downstream
Hydrologic Connectivity

• Initial analyses
  • Positive relationship between flow and Oregon Chub abundance
    • Increased habitat
    • Movement
  • Impacts to nonnative fish
    • Trade-off: increased nonnative movement, lower nonnative dominance in sites
    • Risk: nonnative vegetation
How does this information inform restoration practices?

Connectivity and flow greatly dictate what species occur in an off-channel habitat

1. Understand what species are at your site
2. What processes are occurring and what processes have been lost due to management constraints
3. How restoring or augmenting processes would create desired conditions

Hydrologic connectivity:
Lower terraces so the river can access a slough
• Will it have flow through the slough?
• What species will be impacted, what will benefit?
• Weighing risks vs. benefits (e.g., nonnative access vs. connectivity)

Photo: McKenzie River Trust
Nonnative Aquatic Plants
Freshwater Mussels

Crudely grouped: western pearlshell, floater, western ridged

- People often unaware of what mussels exists at project areas or during site evaluations
Pacific Lamprey Conservation Initiative
Website: fws.gov/pacificlamprey

ODFW has a companion draft conservation plan, should be published in 2020.
Beaver ponds and dams benefit Oregon’s native fish and other wildlife: control flooding and provide stable summer flow, recharge groundwater and raise water table.

They can also be a pain to live and work around.

Many nonlethal options for managing beaver:
• Beaver deceivers (culverts)
• Pond levelling devices (flooding)
• Translocation of problem beaver

BMPs for enhancing habitat for beaver.