Jun 25th, 1:30 PM - 1:50 PM

Concurrent Sessions B: Reintroduction Efforts on the Upper Deschutes River - Successes and Challenges During The First 3-Years Of The Upper Deschutes Basin Downstream Fish Passage Assessment

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Hill, Megan and Quesada, Cory, "Concurrent Sessions B: Reintroduction Efforts on the Upper Deschutes River - Successes and Challenges During The First 3-Years Of The Upper Deschutes Basin Downstream Fish Passage Assessment" (2013). International Conference on Engineering and Ecohydrology for Fish Passage. 38.
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Successes and challenges during the first 3 years of the Upper Deschutes Basin fish passage assessment

Megan Hill & Cory Quesada
Portland General Electric &
The Confederated Tribes of the Warm Springs Reservation of Oregon
Fish Collection System

- Two fish entrances
  - 40 ft by 45 ft each
  - ~3,000 CFS each
- Fish collection is tied to generation
  - Attraction flow varies within the hour
  - Up to ~6,000 through top-structure, additional flow through bottom gates
- 100% screened
Study Objectives

• Determine percentage of smolts collected by the SWW (four year average)
• Identify potential delays to smolt migration in the forebay
• If fewer than 50% are collected, investigate the cause(s), including the identification of mortality factor(s), and identify potential solutions
Study Area
Round Butte forebay

2010-2011

2012
Methods

PIT tag

Radio/Acoustic tag
Results
Collection <50% most of the time
Collection < 50% most of the time

% Collected at SWW

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<thead>
<tr>
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<th>2010</th>
<th>2011</th>
<th>2012</th>
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<tbody>
<tr>
<td>NR Chinook</td>
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<td>NR Steelhead</td>
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NR Chinook NR Steelhead
High percentage of fish find the forebay, varies by year.
Fish find the SWW

Mean nearest approach distances
- Chinook - 8 m
- Steelhead - 16 m
Many fish that enter the forebay are not collected
Many fish make multiple trips, have long residence times in the forebay

- Spent >24 consecutive hours in the Forebay
  - 55-67% of Steelhead
  - 41% of Chinook
- Multiple Trips to the Forebay
  - 40-76% of Steelhead
  - 41% of Chinook
Investigating the causes-generation flow

In 2012 acoustic study- no acoustic-tagged fish entered when mean hourly flow <3,000 CFS
Investigating the causes-predation
Lessons learned

- Anticipate future studies during passage design
  - Anchor points
  - Flow data collection
  - Store raw data from consultants in-house
- Anticipate change
  - Don’t assume present operations will be future operations
  - Build in flexibility
- Understand multiple demands on structure when designing studies
  - Start early
  - Coordinate with all users
  - Educate, set realistic expectations

1st Upper Basin Chinook to Return