Alsea hatchery steelhead

• Steelhead are the only hatchery release in the Alsea Basin
• Long standing program with extensive research history
• Program has mixed results
• Recent changes in broodstock and release locations need evaluation
• Program needs evaluation in the context of current science and thinking about hatcheries
Alsea hatchery steelhead

• Hatchery started ~1937 on the North Fork Alsea
• ~1960 hatchery releases increased
• 1960-1985 strong hatchery based fisheries
• 1985-present fisheries declined
  – Lower smolt survival
  – Lower and mid river fishery reduced most
• 2001 release of 120K smolts consolidated at North Fork Alsea Hatchery
• 2004 started wild brood
• 2011 started releasing smolts (40K) in lower river
Alsea Winter Steelhead Harvest
Corresponding Smolt Release in Hundreds

Number of Fish

- CATCH CARDS
- SMOLTS IN HUNDREDS
Alsea Winter Steelhead harvest by Area
Angling near Alsea Hatchery opened in 1999

Run Year

Alsea R & Bay
N Fk Alsea
Winter steelhead returns to the OHRC trap on Fall Cr., Alsea

- Wild
- Out of basin stray
- Alsea wild brood
- Alsea traditional brood

Year

Adult steelhead

2006 2007 2008 2009 2010 2011

200 150 100 50 0
Alsea Basin hatchery steelhead releases through 2010

- 60K traditional brood smolts
- 60K wild brood smolts
- 100K Siuslaw smolts
Alsea Basin hatchery steelhead releases starting in 2011

- 60K wild brood smolts
- 20K traditional brood smolts
- 40K traditional brood smolts
- 100K Siuslaw smolts
Questions

• How do we manage hatchery releases
  – Minimize impacts to wild fish
  – Maximize angler benefits

• Variables
  – Broodstock type
  – Release location and number
Questions

• Angler benefits from wild vs traditional vs angler caught broodstock
• Source of out of basin strays
• Straying from new (wild) brood vs traditional brood
• Affect of smolt release location on harvest and straying
Basic monitoring design

• Divide smolt release into uniquely marked groups.
  1. Traditional brood from N Fk Hatchery
  2. New wild brood from N Fk Hatchery
  3. Traditional brood released in lower river
  4. Broodstock from angler caught fish
  5. Siuslaw smolt release
  6. Big Elk (Yaquina) smolt release
Monitor methods

• Creel survey throughout Alsea Basin
• Fish traps on
  – Drift Creek
  – Cascade Creek- Five Rivers
  – Fall Creek- OHRC
  – N Fk Alsea
    • Hatchery trap
    • Water diversion dam trap
  – Other locations
Establish basis for management

- Which releases contribute to fisheries
- Which releases stray
- Adjust hatchery release strategy as necessary
Application of research

• Hatchery winter steelhead universal program on Oregon Coast
  – Necanicum
  – Nehalem
  – Tillamook
  – Nestucca
  – Siletz
  – Yaquina
  – Siuslaw
  – Umpqua
  – Coos
  – Coquille
  – Chetco
Winter Steelhead Returns to Bohannon Trap, Drift Creek, Alsea

The graph shows the adult steelhead population from 1992 to 2011. The population is divided into two categories: Hatchery and Wild. The Hatchery population is represented by yellow, while the Wild population is represented by blue. The population fluctuates significantly over the years, with peaks and troughs observed in each category.