

# FISH PASSAGE POLICY & TIDE GATES



Greg Apke, ODFW Statewide Fish Passage Program Leader

# OREGON'S FISH PASSAGE POLICY

- It is the policy of the State of Oregon to provide passage for native migratory fish.
- Fish passage is required in all waters of this state in which native migratory fish are currently have historically been present.
- ORS 509.580 - .910 (state statutes)
  - A part of the state's territorial constitution, required prior to statehood and most recently revised by the legislature in 2001.

# FISH PASSAGE BARRIERS ?

**Artificial Obstruction** (AO)= Any dam, diversion, dike, berm, levee, **tide or flood gate**, road, culvert, or other human-made device placed in waters of this state that precludes or prevents the migration of native migratory fish.

# FISH PASSAGE – POLICY FRAMEWORK

- Oregon Law requires fish passage
- At artificial obstructions (AO's)
- Where native migratory fish are currently or were historically present, and
- Address passage prior to "trigger event"
- ODFW issues fish passage approval permits for tide gates
- Allows alternatives to providing passage
  - Passage waivers and exemptions

# NATIVE MIGRATORY FISH SPECIES

- **Native Migratory Fish - OAR 635-412-0005 (32) - native fish that migrate for their life cycle needs, including all sub-species and life history patterns of the following:**
  - salmon species (chum; coho; sockeye/kokanee; chinook)
  - trout species (cutthroat; steelhead, rainbow and redband)
  - bull trout
  - mountain whitefish
  - sturgeon species
  - sucker species
  - lamprey species (excluding brook)
  - pikeminnow species
  - redband surfperch, surf smelt, longfin smelt, eulachon

The state's fish passage authority applies to all 32 different fish species defined as NMF in Oregon.

# TRIGGERS = ACTIVITIES THAT INVOKE THE STATE'S FISH PASSAGE AUTHORITY

- **Construction:**
- **Fundamental change in permit status of an existing barrier:**
  - licensing
  - relicensing
  - new water rights
- **Abandonment of artificial obstruction:**

# TIDE GATE CONSTRUCTION TRIGGERS

- **New construction, major maintenance, replacement or installation of tide gates**
- **Cumulative replacement of over 50% of gate material, or**
- **Cumulative removal, fill, replacement or addition of over 50% of structure supporting gate, excluding road stream crossing structure**

# Fish Passage & Tide Gates

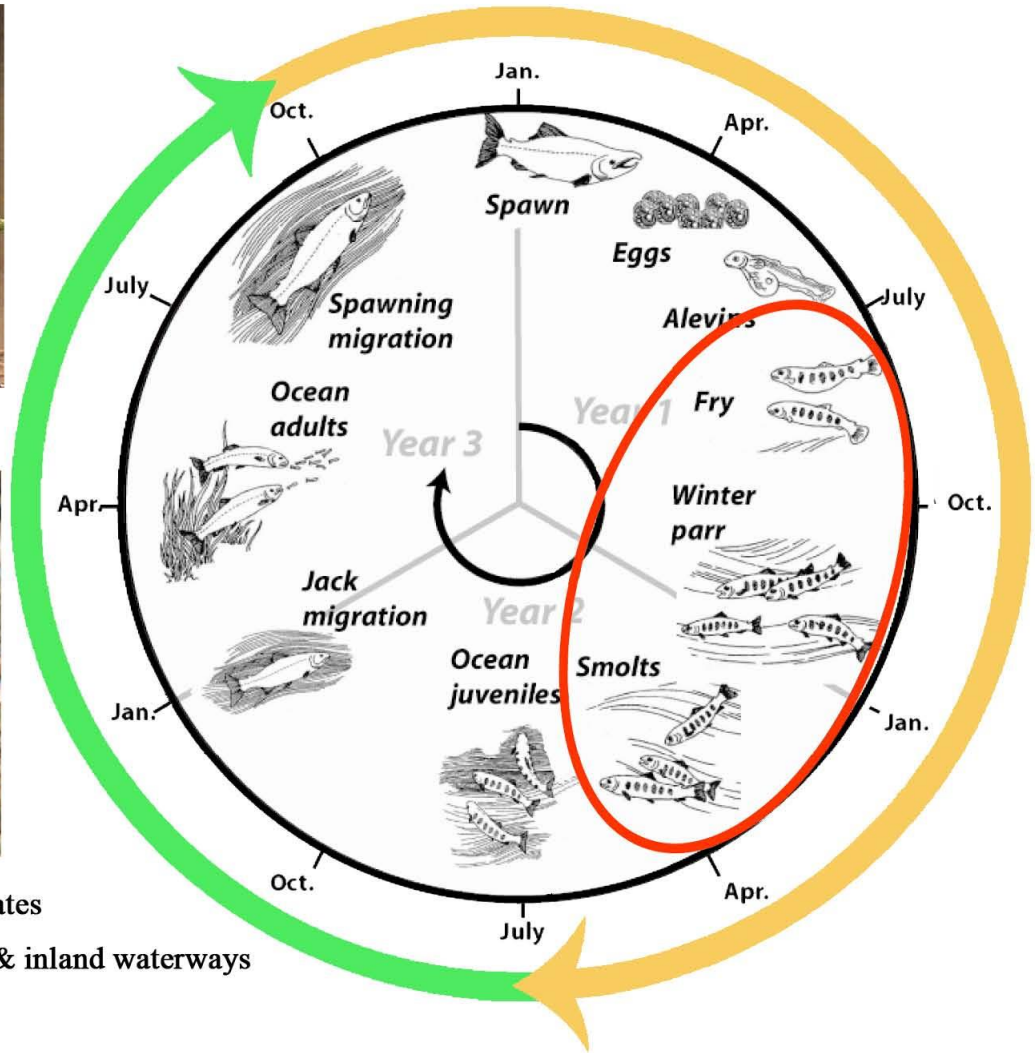
- Tide Gates block, inhibit, or limit access to estuarine habitats which are critically important to salmonids and other native fish production & survival
- These estuarine environments are the last stop for out-migrating juvenile fish who need to physiologically develop and mature prior to heading to the ocean - excellent forage and cover habitats
- All tide gates block or delay upstream migrating adult and juvenile fish from reaching important habitat & seeking favorable water quality conditions
- Some tide gates provide better passage than others, but all tide gates present at least a **delay** to migrating fish (**hours or days**)

Closed gate = no access for fish

# Fish Passage At Tide Gates

- Can be extremely limited
- Older style top hinged cast iron tide gates typically present higher velocities than newer side hinged tide gates, and under certain conditions, are closed for longer periods than newer aluminum side-hinged gates
- Lighter side hinged tide gates require less force to open (open quicker and longer)
- Newer side hinge gates present lower velocities to fish than their top hinged counterparts
- Tide gates largely prevent waters upstream and downstream of the gate from mixing
- Habitat forming processes precluded by tide gates

# Coho Salmon Life Cycle



- Lifecycle time spent within tidegates
- Lifecycle time spent in estuaries & inland waterways
- Lifecycle time spent in the ocean

# Fish Passage Design Goals at Tide Gates

- Design goals for all new tide gate installations:
  - Optimize time of gate openness
  - Maximize water depths
  - Minimize water velocities
  - Match invert elevations with low-low tide elevations
  - Balance the needs of the landowner with the restoration needs of the native migratory fish
- Muted Tidal Regulators (MTR) provide improved fish passage conditions and allow landowners to manage inundation elevation(s) and manage flooding related issues

# FISH PASSAGE DESIGN CRITERIA

- **OAR 635-412-0035(4)** –  
REQUIREMENTS AT AO'S IN  
ESTUARIES ABOVE WHICH A STREAM  
IS PRESENT
- **OAR 635-412-0035(5)** ... WHERE NO  
STREAM IS ABOVE AO

# QUESTIONS?

## Fish Passage Website

<http://www.dfw.state.or.us/fish/passage/>

- overview
- criteria and guidelines
  - forms
- standard drawings

## Statewide Fish Passage Coordinator

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## Local District Fish Biologists



# SCENARIO DISCUSSION

## THREE SCENARIOS (OPRD):

- Existing tide gate:
- Modern tide gate:
- Breach: