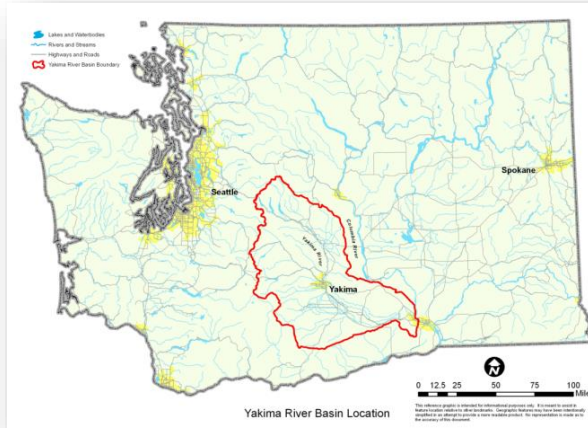
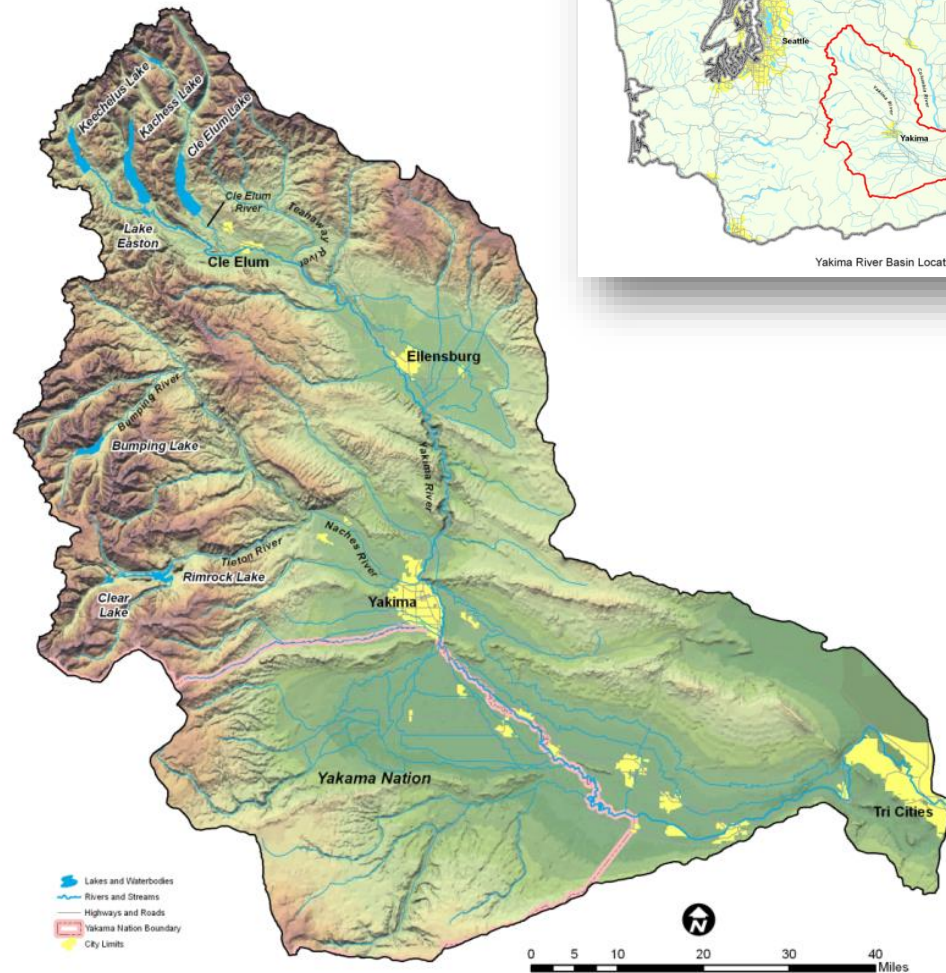


# **Yakima Basin Integrated Plan & Yakima River Delta Enhancement (Bateman Island Causeway) Project**



**YAKIMA BASIN  
BUILDING A FUTURE FOR WATER, WILDLIFE  
& WORKING LANDS**

# Basin Overview



- Basin size = 6,155 sq. miles
- Population = 360,000
- Irrigated Area = 464,000 acres
- Economic Impacts (USDA 2012)
  - Food Processing Industry Benefits = \$1.4B
  - Agricultural Production = 1.8B
- Historically, second only to Snake River in supporting Columbia River salmon and steelhead runs

This reference graphic is intended for informational purposes only. It is meant to assist in feature location relative to other landmarks. Geographic features may have been intentionally simplified in an attempt to provide a more readable product. No representation is made as to the accuracy of this document.

# Water Resource Challenges

- **Surface water is over-appropriated**
- **5 reservoirs with 1M acre-feet of capacity**
- **Existing water rights: Basin-wide irrigation diversions = 2.3M acre-feet**
- **Snowpack is the “sixth reservoir”**



# Fish Restoration Challenges



- **Historic salmon and steelhead run**
  - **800,000 fish**
- **Average run size last 10-15 years**
  - **15,000-20,000 fish**
- **Native coho, sockeye and summer Chinook extirpated**
  - **Coho reestablished, sockeye being reestablished**
- **Spring and fall Chinook**
  - **Seriously reduced**
- **Steelhead and bull trout**
  - **ESA Threatened species**

# The Yakima Plan:

A balanced package of actions developed by:

- The Yakama Nation
- Federal Agencies
  - Bureau of Reclamation
  - US Fish and Wildlife
  - US Forest Service
  - NOAA
- State Agencies
  - Dept of Ecology
  - Dept of Agriculture
  - Dept of Fish and Wildlife
- Irrigation Districts
  - KID
  - Sunnyside
  - Roza
  - Yakima-Tieton
  - KRD
- Environmental & Recreation Groups
  - American Rivers
  - Trout Unlimited
  - The Wilderness Society
- Local Governments
  - Counties
  - Municipalities



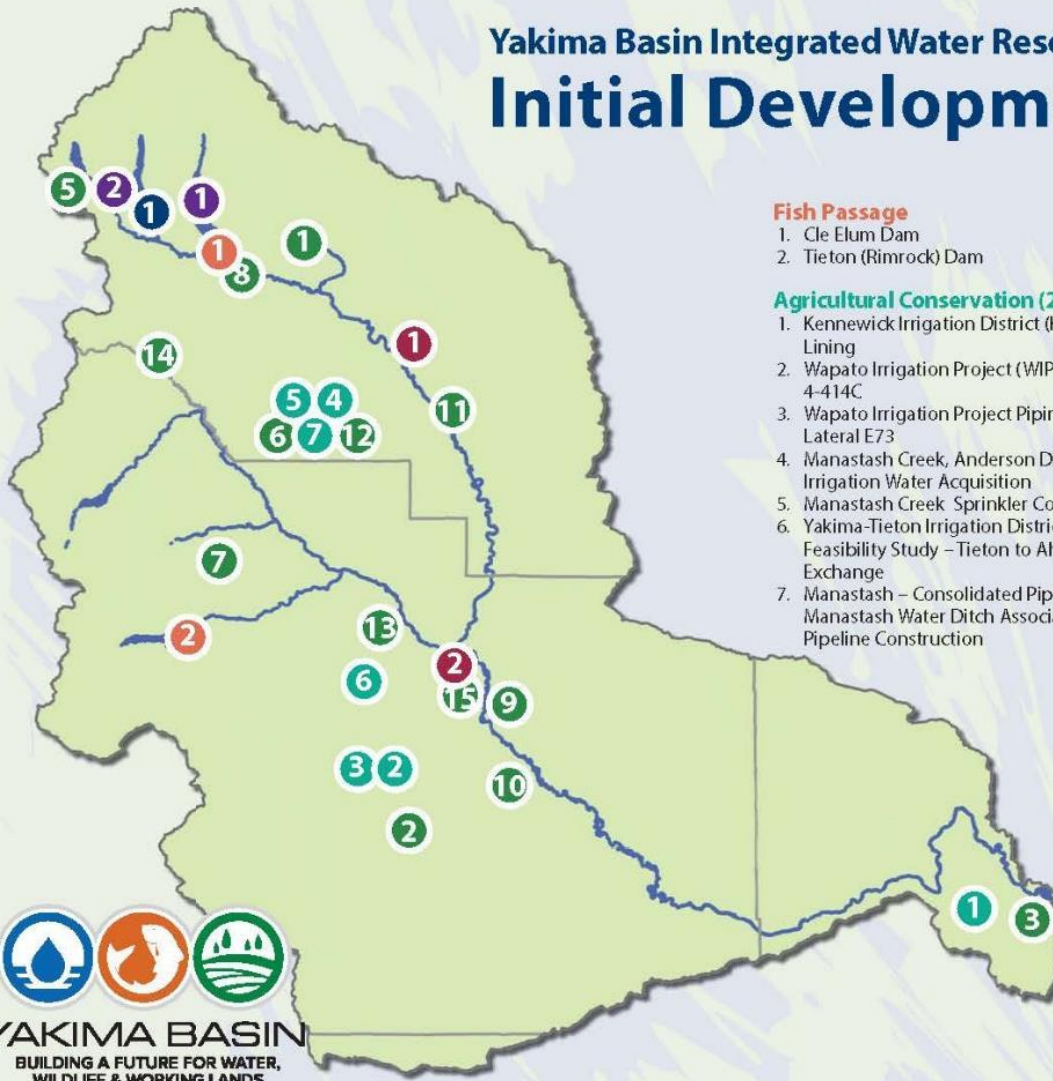
# The Yakima Plan is

- A 30-year strategy
- Three 10-year phases
  - First, “Initial Development Phase” under way
- ~\$3 billion projects
  - Provide reliable water for **EXISTING** agriculture
  - Restore all native historic salmon and steelhead
  - Address all interests equally



# Seven Key Elements: Projects & Cooperation

## Yakima Basin Integrated Water Resources Management Plan Initial Development Projects



### Fish Passage

1. Cle Elum Dam
2. Tieton (Rimrock) Dam

### Agricultural Conservation (2013-2015)

1. Kennewick Irrigation District (KID) Division IV Lining
2. Wapato Irrigation Project (WIP) Piping Lateral 4-414C
3. Wapato Irrigation Project Piping Satus East Lateral E73
4. Manastash Creek, Anderson Diversion Irrigation Water Acquisition
5. Manastash Creek Sprinkler Conversions
6. Yakima-Tieton Irrigation District (YTID) Feasibility Study – Tieton to Ahtanum Exchange
7. Manastash – Consolidated Pipeline & Manastash Water Ditch Association (MWDA) Pipeline Construction

### Structural and Operational Changes

1. Cle Elum Pool Raise
2. Keechelus to Kachess Conveyance

### Surface Water Storage

1. Kachess Drought Relief Pumping Plant

### Water Bank/Exchange Programs

Basin Wide

### Groundwater Storage

1. Upper Kittitas Aquifer Storage and Recovery
2. Yakima City Aquifer Storage and Recovery

### Habitat Enhancement (2013-2015)

1. Teanaway Acquisition
2. Toppenish Fan
3. Bateman Island Causeway Modification Conceptual Design
4. Bull Trout Habitat Improvements
5. Gold Creek Habitat Assessment and Conceptual Design
6. Reed Diversion design Barrier Removal
7. Little Rattlesnake Road Decommissioning
8. Cle Elum River Side Channel Restoration Project, Phase 2
9. Gap-to-Gap Property Acquisitions
10. Upper Wapato Riparian Restoration
11. Ellensburg Water Company / Coleman Creek Restoration
12. Reed Diversion Barrier Removal
13. Trout Meadows Acquisition / Enhancement
14. Manastash/ Little Naches Land Acquisition
15. Gap-to-Gap Outfall Relocation



# Yakima Basin Integrated Plan

Cle Elum Dam Fish Passage

Teanaway Community Forest

Cle Elum Pool Rise

Kachess Drought Relief Pumping Project

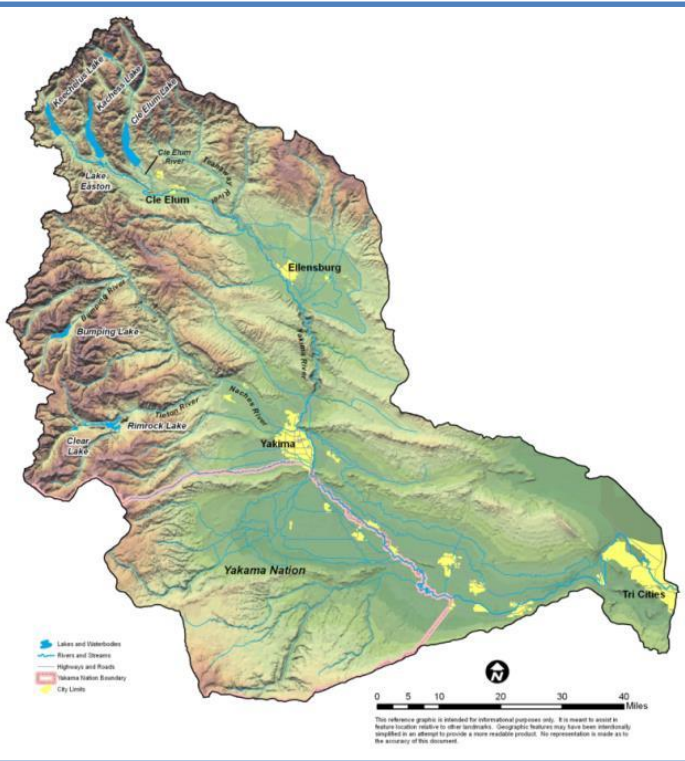
Gap to Gap Floodplain  
Restoration

Conservation Projects: Roza and  
Kennewick Irrigation Districts

Other Projects

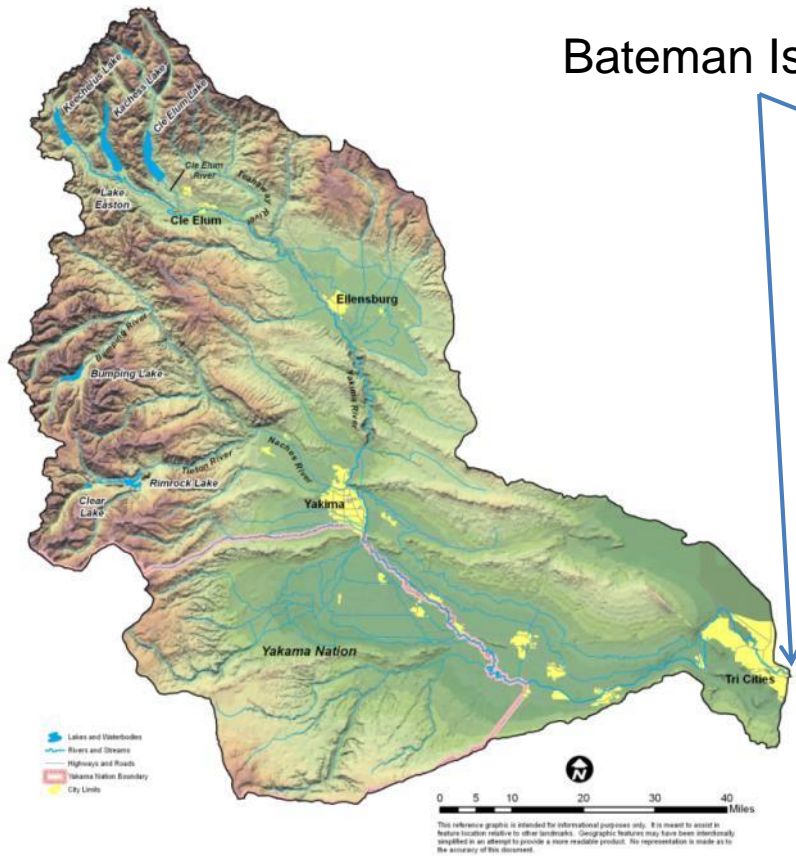
New Partners

**Yakima River Delta  
Enhancement Project**





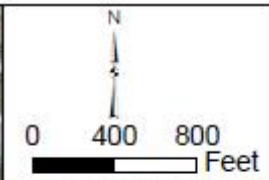
# Gateway and Cornerstone



Bateman Island



# Bateman Island



Mid-Columbia Fisheries Enhancement Group  
Bateman Island

Causeway Concept Design Project  
Figure 1.1  
Project Location Map

Gray & Osborne, Inc.  
LAND SURVEYORS

M:\MCFEG\14542 Bateman Island Causeway\03 Survey\GIS\Map and Figure data\project\_area.mxd

Orthophoto Source: Google Earth

## Recreation...



**...is popular and year-round**

## Salmon & Steelhead Survival...

- **What factors are limiting juvenile and adult passage**
- **Are high water temperatures affecting juvenile and adult fish**
- **Predation by warm water fish species**
- **Can flow patterns and water quality be improved**

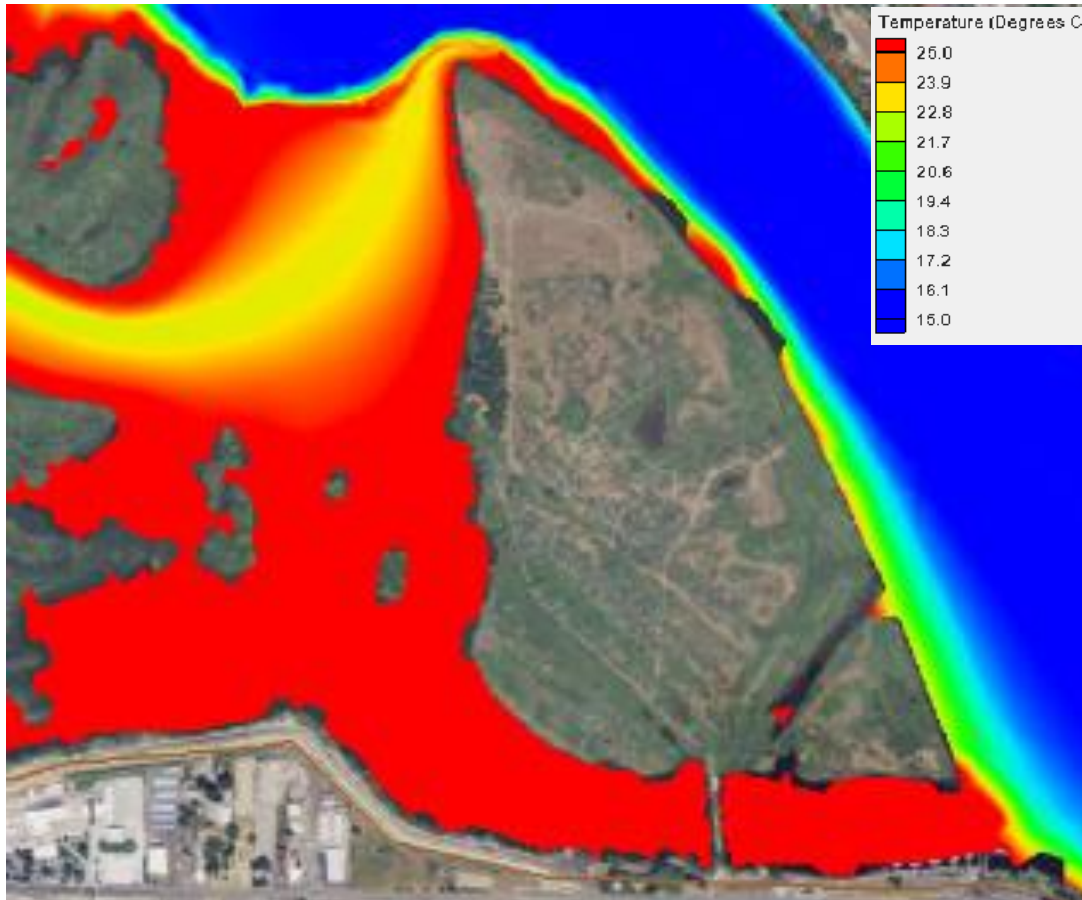
**...is difficult**

# Previous Studies

- 1998, 2004, 2011, 2014
  - Bureau of Reclamation, U.S. Army Corps of Engineers, Benton Conservation District, Mid-Columbia Fisheries Enhancement Group
  - High temperatures
  - Open Causeway
  - Temps reduced with flow on south side of Bateman Island



# RESULTS



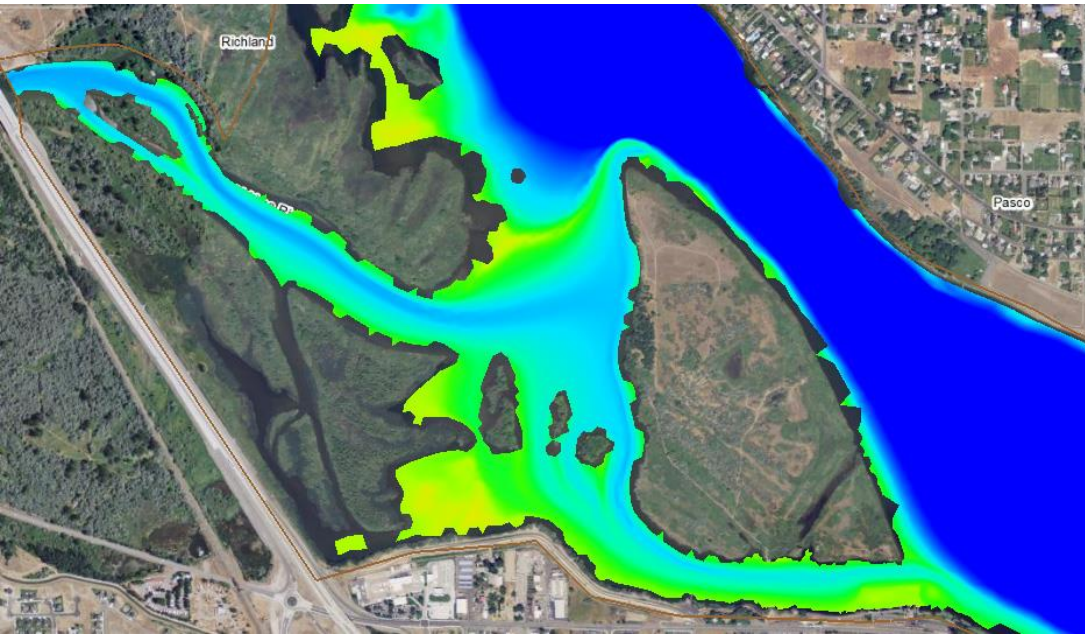
**Temperatures of 77-86 degrees = thermal block to late migrating salmon**

**Back water area is ideal habitat for non-native predatory fish**

**Causeway is a complete barrier to fish passage and river flow**

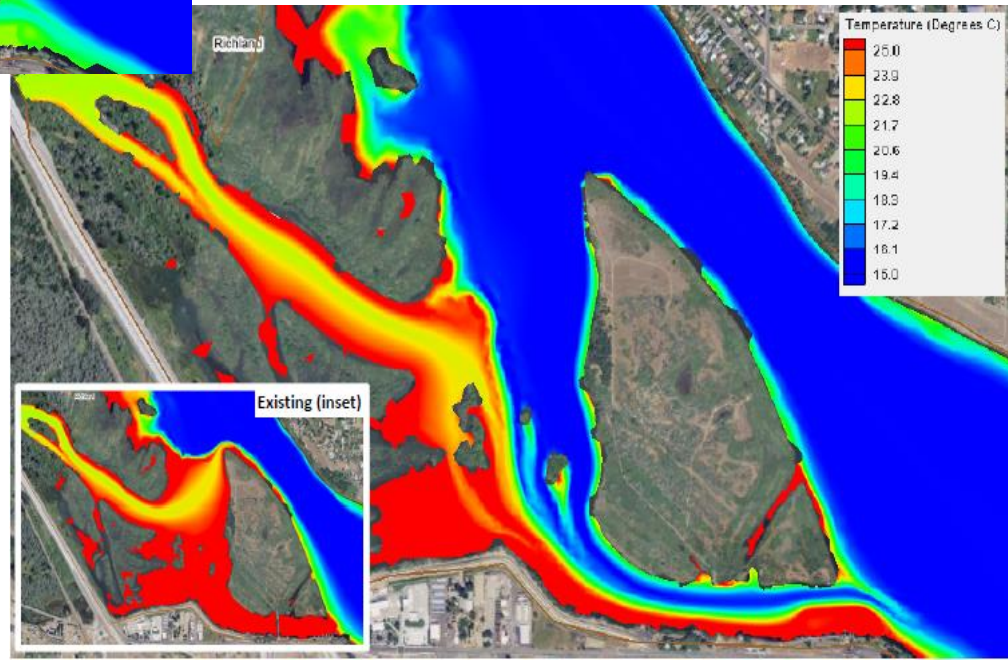


# Results



**Causeway is approximately 500 feet long**

**Removal of up to 260 feet and greater produced the most benefit of decreasing water temperature west and south of Bateman Island**



# Progress

## Outreach

### September-December 2016

- 13 WDFW / KID Presentations
- Key Audiences: Cities, Ports, Visit TRI-CITIES, Mosquito Control, Lower Columbia Audubon, Richland Rod and Gun, Coastal Conservation Association

## Ecological Restoration

### March-May 2017

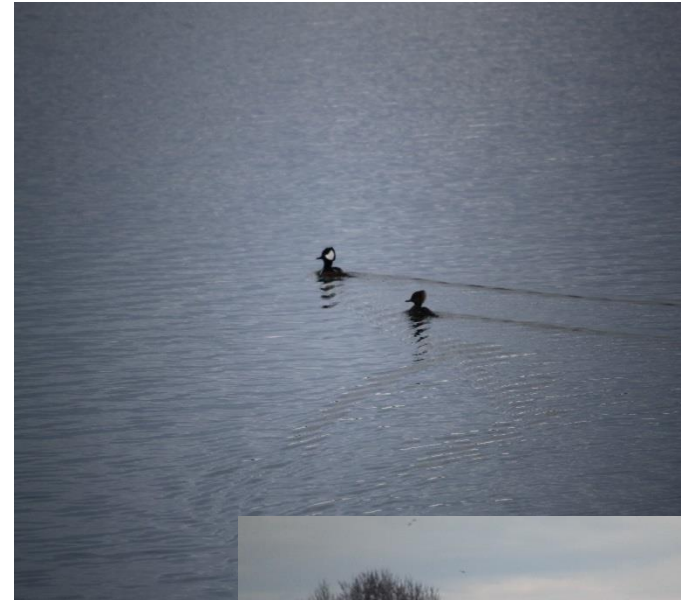
- Stakeholders: State and Federal Natural resource agencies, Tribal, City of Richland, RFEG (MCF), and the Columbia Point Marina
- USACE Section 1135, Aquatic Ecosystem Restoration
- WDFW Letter of Intent, as Non-Federal Project Sponsor, delivered to USACE



# The Continuing Vision

Improvements to the Yakima Delta will have positive impacts

- Remove a significant fish passage barrier
  - Improve river conditions for migratory salmonids and Steelhead
  - Improve overall environmental and recreational conditions.
- Access
  - Address public access
  - New recreational opportunities
- Marina
  - Relocation





# Thank you!



**KENNEWICK**  
IRRIGATION DISTRICT

