

YAKIMA RIVER DELTA ECOSYSTEM RESTORATION FEASIBILITY STUDY

Continuing Authority Program, Section 1135

CRPAG Update
January 5, 2023



US Army Corps
of Engineers®



YAKIMA RIVER DELTA FEASIBILITY STUDY

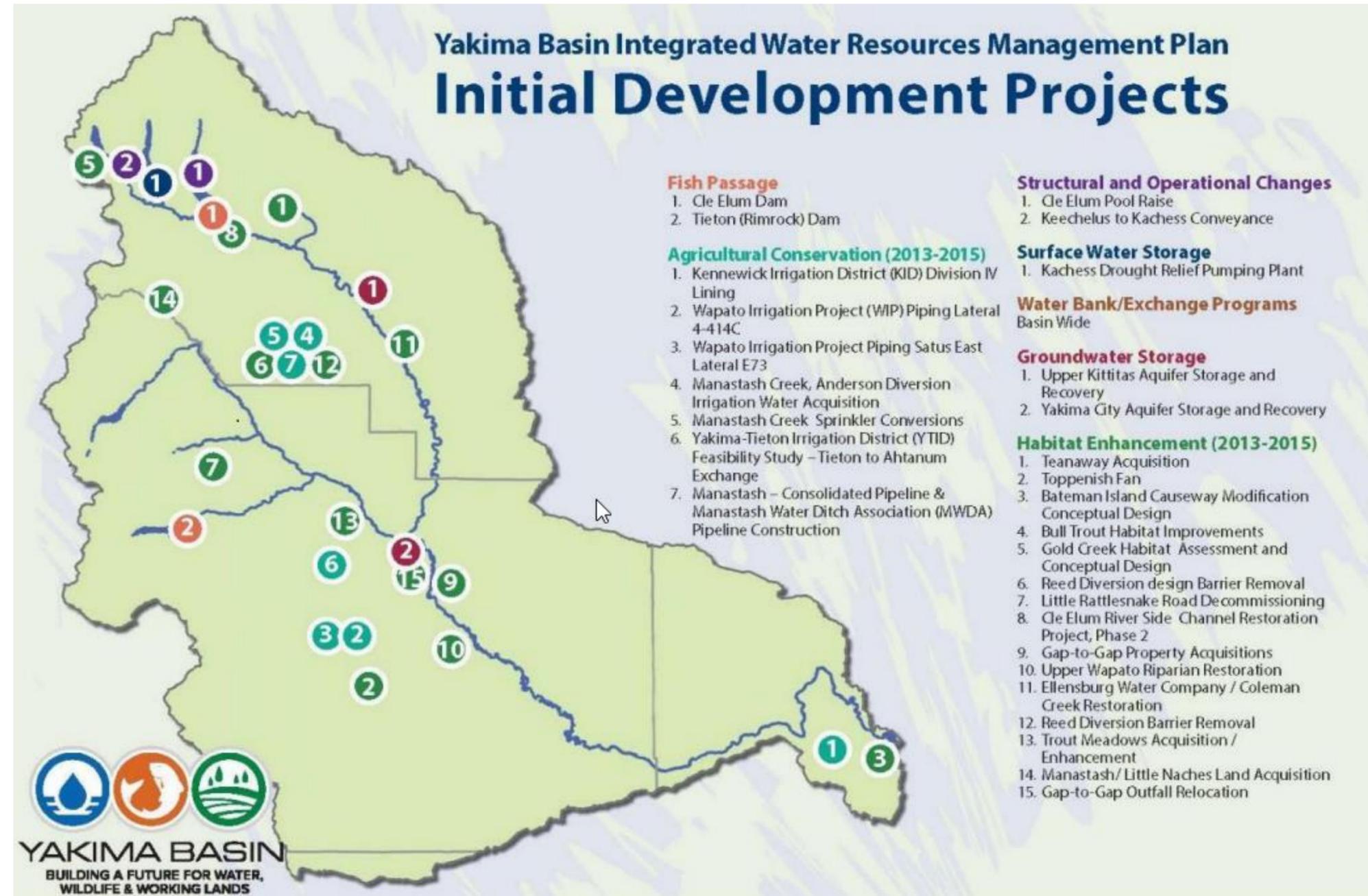
Sponsor - Washington Department of Fish and Wildlife

- Aug. 2019 FCSA Executed
- Nov. 2019 Public Scoping Meeting
- Yakima Delta Work Group
 - Multiagency Stakeholder Group
 - Linked to Yakima Basin Integrated Plan
 - Purpose Statement
- Cooperating Agencies
 - Yakama Nation
 - Umatilla
 - USFWS
 - NMFS
 - WA Department of Ecology

Authority – Continuing Authorities Program

- Section 1135 of WRDA 1986, Public Law 99-662

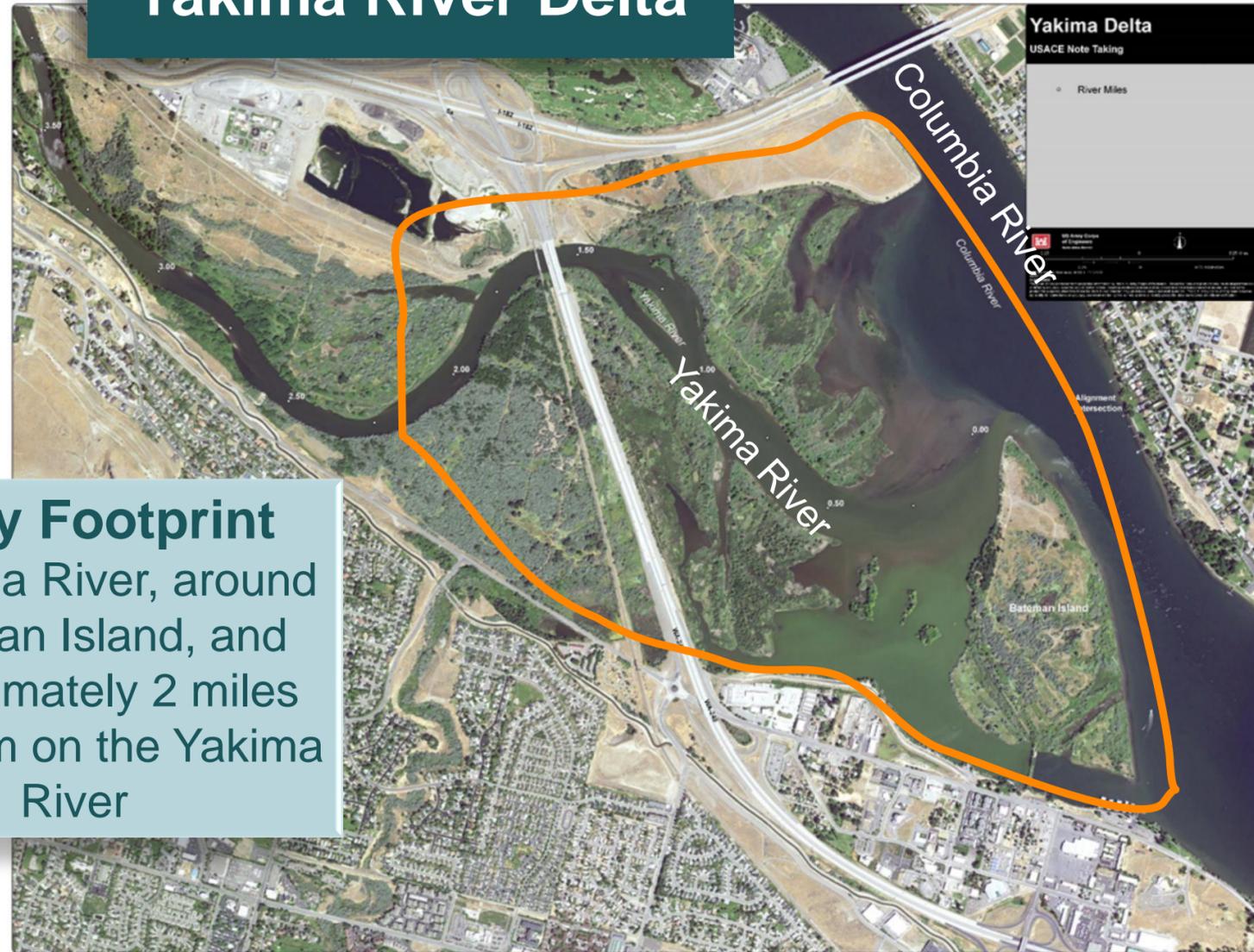
“...With the purpose to contribute to the restoration of habitat degradation by the construction and operation of the Federal Project.”



YAKIMA RIVER DELTA FEASIBILITY STUDY

Study Location

Yakima River Delta



Study Footprint
Columbia River, around
Bateman Island, and
approximately 2 miles
upstream on the Yakima
River



Washington

Yakima Basin

YAKIMA RIVER DELTA FEASIBILITY STUDY

EXISTING CONDITION

CAUSES

Salmon Migration Barriers

- High Temperatures
- Flow Blockage - Causeway

Juvenile Salmon Survival

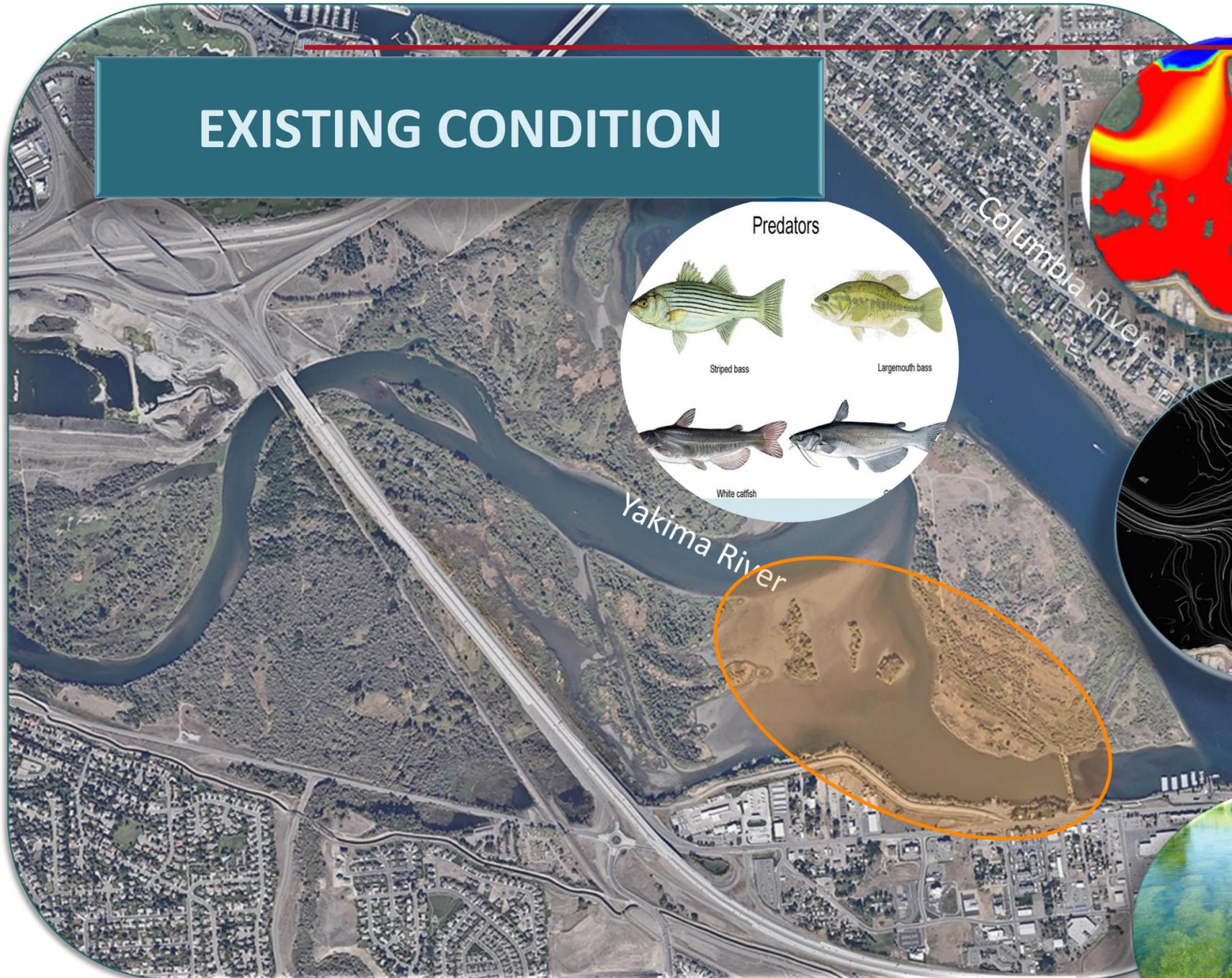
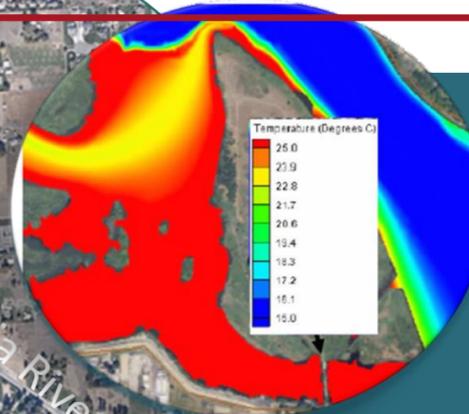
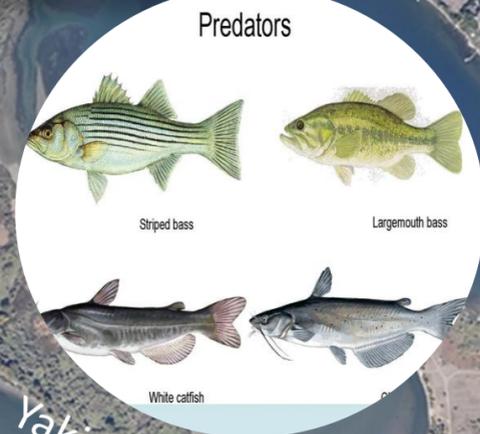
- Predator Species
- Predator Rearing Habitat
- Poor Water Quality

Altered Flow Regime

- Inundation and Sedimentation
- Poor Mixing of Columbia and Yakima Rivers

Health Concerns

- Stagnant Water Conditions
- Mosquito Breeding



YAKIMA RIVER DELTA FEASIBILITY STUDY

Study Problem Statements

- Impoundment of the Columbia River reduced the energy and volume of flows entering the Yakima River Delta,
 - Creation of a thermal barrier that can delay the entrance of adult salmonids into the Yakima River
- Blocked flows south of Bateman Island, and increased sedimentation created a large, shallow backwater environment.
 - High water temperatures
 - Extreme daily fluctuations of dissolved oxygen
 - Impacts on the health of juvenile salmon and steelhead
 - Rearing area for multiple species of fish that prey on juvenile salmon



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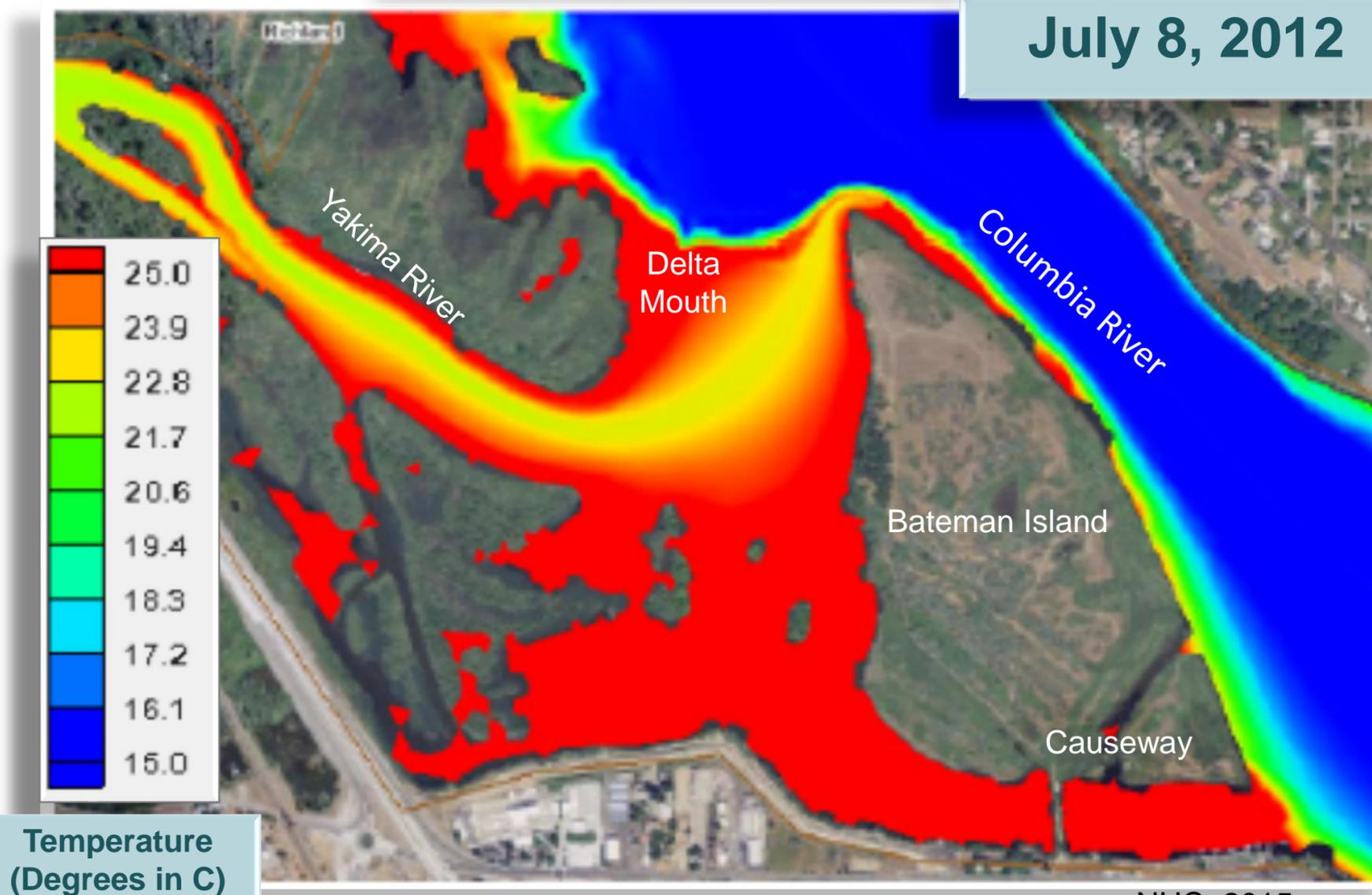
Existing Condition – High Temperatures

High Temperatures

- **Mouth of Yakima River**
 - Thermal Barrier - Adult Salmon
 - High Yakima River Temperatures
 - Delays Upstream Migration
 - Increased Straying
 - Impacts to Fish Health

Yakima River Delta Temperature

July 8, 2012





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Opportunities for improvements

- **Protection of Cultural Resources**
 - Restoration could function as protection for cultural resources.
- **Improve Habitat/Passage/Water Quality**
 - Restoration would change mixing, circulation, and flows that effect water quality.
 - Reduce predator habitat presence and quality
- **Reduce Public Health Risks**
 - Reduce stagnant backwater could reduce mosquito breeding, stargrass and algal and bacterial blooms.
- **Enhance Water-Related Recreation**
 - Improved conditions in the Delta could enhanced water-related recreation (kayaking, swimming, fishing, etc.).
- **Educational Opportunities**
 - Restoration could provide a rare location the public could learn about habitat function in an urban environment.





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Summary of Measures Considered

Measure 1: Infuse cool water from the quarry.
Removed

Measure 2: Cool Yakima with Spring water.
Removed

Measure 3: Route cool water from the Columbia to the Yakima.
Removed

Measure 4: Dredge Yakima at confluence with Columbia.
Removed

Measure 5: Concentrate Flows with Training Structures in the Yakima River.
Removed

Measure 6: Reconnect Floodplain under Highway 240.
Removed

Measure 8: New Side-Channel through South End of Bateman Island.
Removed

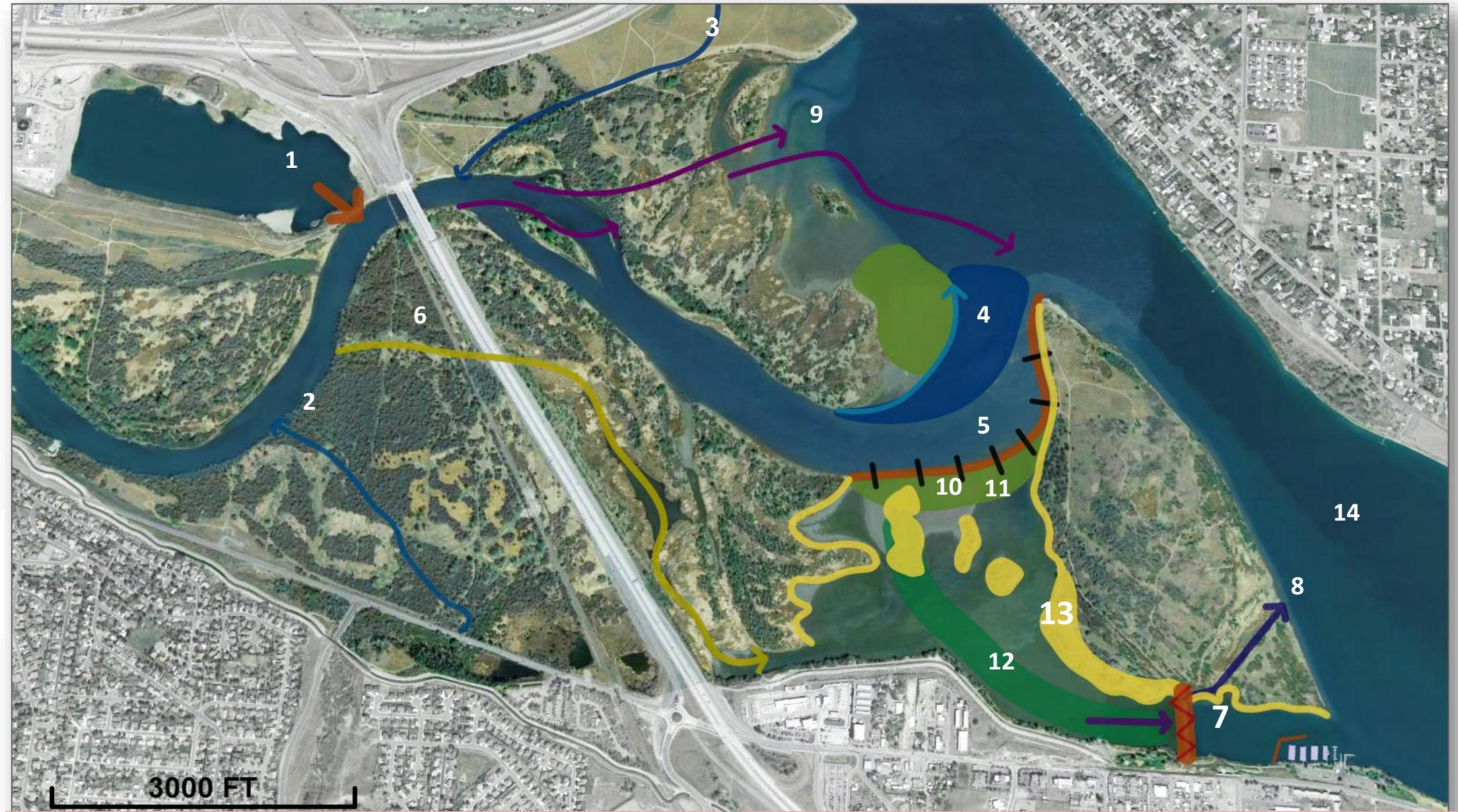
Measure 9: Realign Yakima River Along the North Shore to Columbia River.
Removed

Measure 10: Isolate Backwater from Main Yakima River Channel. Combined with #5. **Removed**

Measure 11: Control Flows to Improve Riparian and Aquatic Habitat in Backwater.
Removed

Measure 12: Create Deep Water / Deep Pool Habitat within Backwater.
Removed

Measure 14: Change to McNary Dam Operations to Improve Flows through Yakima River Delta.
Removed



Measure 7: Complete or Partial Removal of Causeway to improve flow through the backwater.
Retained

Measure 13: Increase Fringe Riparian Habitat along Bateman Island and on shorelines in the backwater.
Retained



TENTATIVELY RECOMMENDED PLAN



- Full Removal Without Riparian Restoration
- Use of adjacent parking lots anticipated for staging areas
- More detail will be added during design to further reduce disturbance to island
- Risks/Concerns: Marina protection and Loss of access

