



Agenda

Yakima River Basin Water Enhancement Project Workgroup Meeting

Legends Casino, Toppenish, WA - Columbia Room
September 11, 2024; 9:30 AM to 12:30 PM

- 9:30 – 9:45** **Welcome/Introductions and Agenda Overview**
Anna Marandi, HDR
- 9:45 – 10:15** **YBIP Executive and Implementation Committee Updates and Cle Elum Fish Passage Celebration Recap**
Wendy Christensen, Reclamation; Tom Tebb, OCR/ Ecology; Phil Rigdon, Yakama Nation; Joe Blodgett, Yakama Nation
- 10:15 – 10:55** **Lower River Part 2 Presentation and Panel**
Chris Perra, Yakama Nation Fisheries; Tom Elliott, Yakama Nation Fisheries; Merritt Mitchell, Mid-Columbia Fisheries; Curt Strifert, Columbia Irrigation District; Marcella Appel, Benton Conservation District
- 10:55 – 11:15** **Pom Pom Road Habitat Restoration Project and Slide Ranch Fire Impacts**
Shawna Warehime, Yakama Nation Fisheries
- 11:15 – 11:30** **Public Comment**
- 11:30 – 11:50** **Break and Workgroup photo**
Workgroup members
- 11:50 – 12:00** **Wapato Irrigation Project Updates**
Graysen Squeochs, Yakama Nation
- 12:00 – 12:30** **Roundtable Discussion – Workgroup Members**
Anna Marandi, HDR
- 12:30** **Adjourn**

2024 YRBWEP Workgroup Meetings –December 11 (Yakima Community College)

For additional information, see the reports and documents available at this link:
<http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html>



— BUREAU OF —
RECLAMATION

Inflation Reduction Act Funding: Yakima Basin Drought Projects

Fan Shallow Aquifer Recharge Project

Reclamation Funding: \$6 million

The Aquifer Recharge Project will improve flows in Toppenish Creek for Mid-Columbia Steelhead and other aquatic species. Low flows and high temperatures within the creek caused by drought conditions have negatively impacted the aquatic ecosystem. Inflation Reduction Act funding to the Yakama Nation will allow for significant progress in constructing the recharge project. This is expected to result in 748 acre-feet of conserved water and 5,400 acre-feet of recharged water, which will be verified using monitoring wells.

Washington State System Conservation Agreements

Reclamation Funding \$5 million

Reclamation is working with the Washington State Department of Ecology to implement drought mitigation within the Yakima Basin. Temporary reductions in water use could be through a Department of Ecology water marketing program already in place allowing for short-term leasing of water. The Department of Ecology has an existing Water Banking Pilot Grants program, which allows for permanent exchange of water rights from the recipient to the state. Funding may expand these programs due to current drought conditions within the basin. This would allow greater programmatic flexibility during drought conditions, improving water flows in Yakama Basin and benefitting both aquatic species and local irrigation districts.

Emergency Drought Funding to Roza Irrigation District

Reclamation Funding \$3.4 million

In 2024, the Roza Irrigation District purchased 11,330 acre-feet of water leases from senior water rights holders to mitigate for drought within the basin. Inflation Reduction Act funding will help the district to partially mitigate impacts from this year's drought. In the 2015 drought, Roza Irrigation District irrigators had \$77 million in crop losses and an estimated total economic impact between \$700 million to \$1.2 billion across the state. Seventy percent of the district is currently planted in crops that require water late in the season, such as tree fruits, hops, grapes, blueberries, and triticale.

North Branch Water Conservation Project

Reclamation Funding \$1.6 million

The \$83 million North Canal Piping Project lines 13,862 feet of canal, saving a peak 7.1 cubic-feet per second of water. This water will improve flows in Yakama River for Mid-Columbia Steelhead and other aquatic species. Inflation Reduction Act funding of \$1.6 million to the Kittitas Reclamation District will continue Reclamation's partnership on this project (\$15.8 million of Reclamation provided funding to date) and make significant progress towards the project's goal of conserving 6,658 acre-feet of water annually. Construction is anticipated to begin in Fall 2024.

Lower Yakima River Project Update



Yakama Nation Fisheries
Yakima Integrated Plan Workgroup,
Sept 11, 2024
Yakama Legends Casino

Lower Yakima River



- All out- and in-migrating fish must pass through the lower Yakima River
- Flow, water quality, and passage survival strongly affected by diversions
- Restoration is the highest priority fish concern in the Yakima Basin

Cultural Importance of Lower Yakima River



- Regionally significant fisheries at Top Tut (Prosser), natural falls created harvest opportunity
- Large villages and population at Parker
- Utilization since time immemorial continues to this day



Vision and Goals for the Future River

- Fish migration survival rates allowing for healthy and harvestable stocks of all species
- Infrastructure exerts minimal impact on fish populations
- Flow, habitat, predation rates and water quality support abundant migratory, rearing, and spawning fish populations



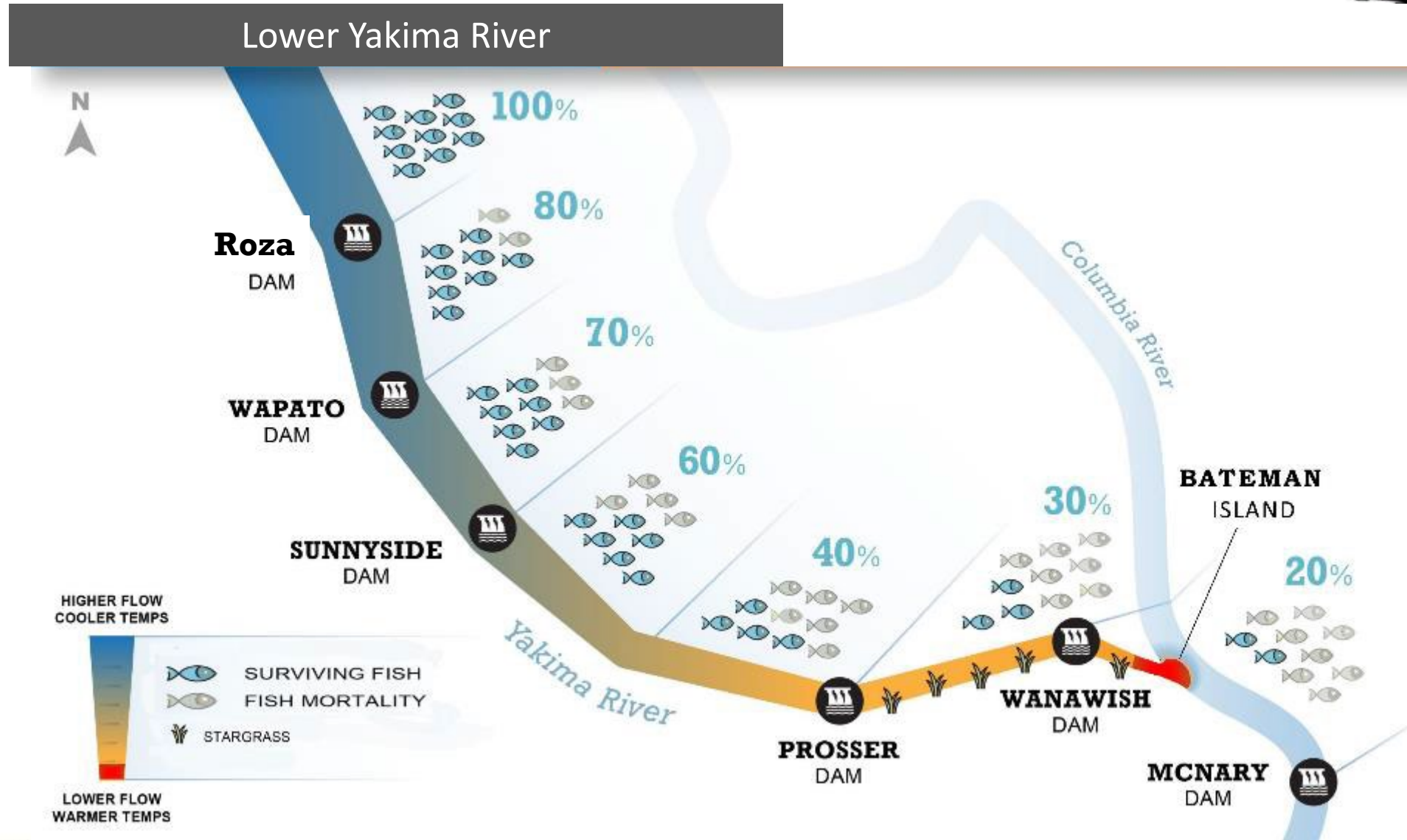
Andrew Matala

Lower Yakima fish passage is critical to rebuilding fish runs

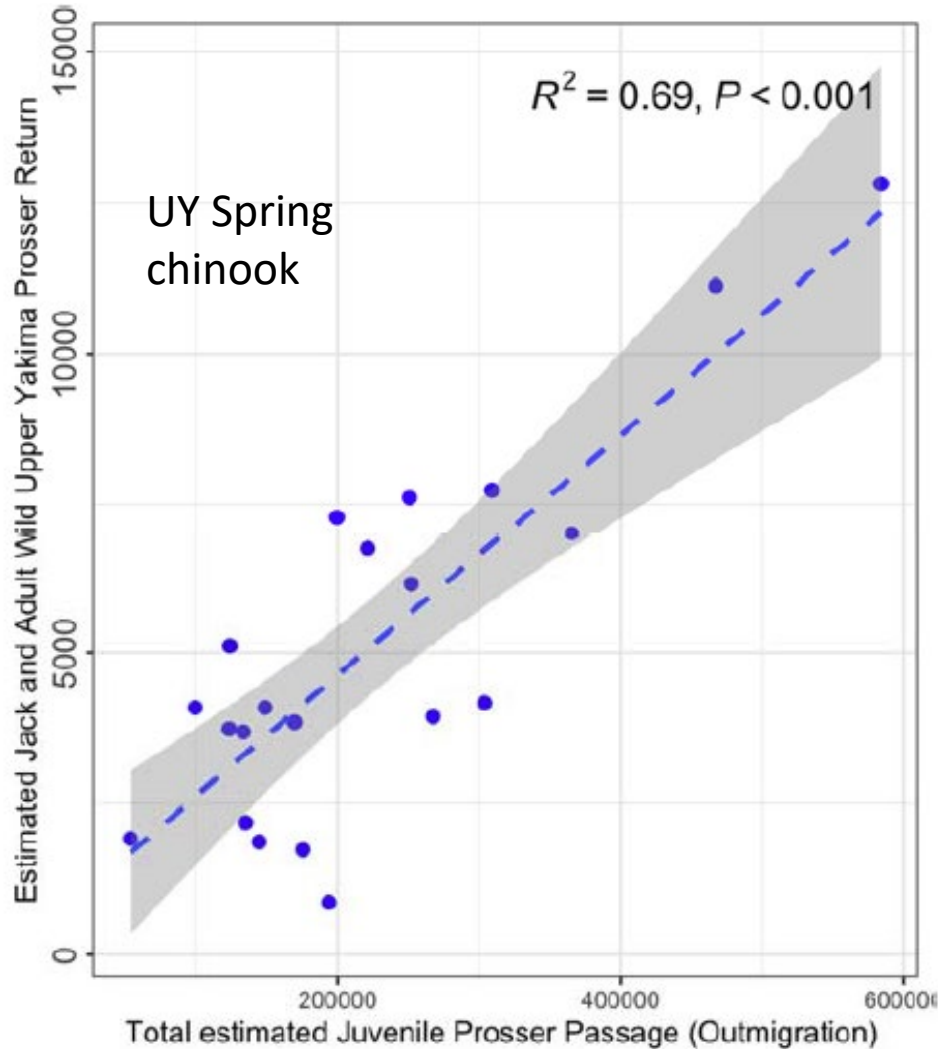
- Juvenile loss on average is 50% to 70%
- Cannot recover fish runs without major improvements in lower River
- Healthy adult returns depend on dramatically improving lower River passage



Significantly improving juvenile survival...



Is necessary to increase adult runs



Pandit et al 2023

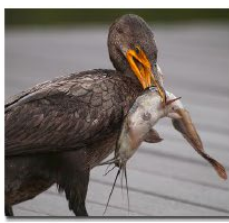
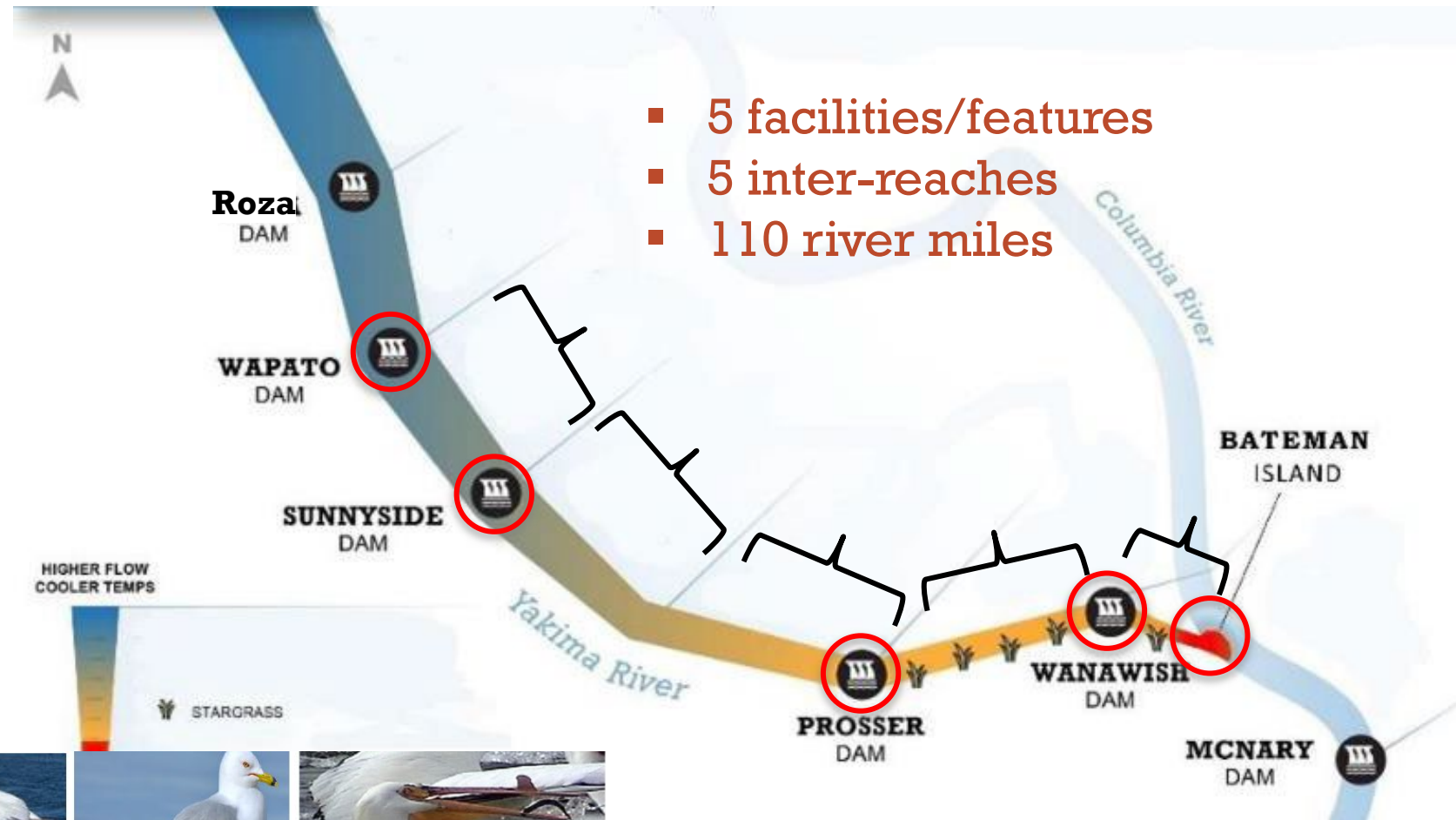
- Direct and strong relationship between juvenile survival and adult returns
- Every increase in juvenile survival leads to larger adult runs

Need for integrated, whole system approach-partnerships will be key



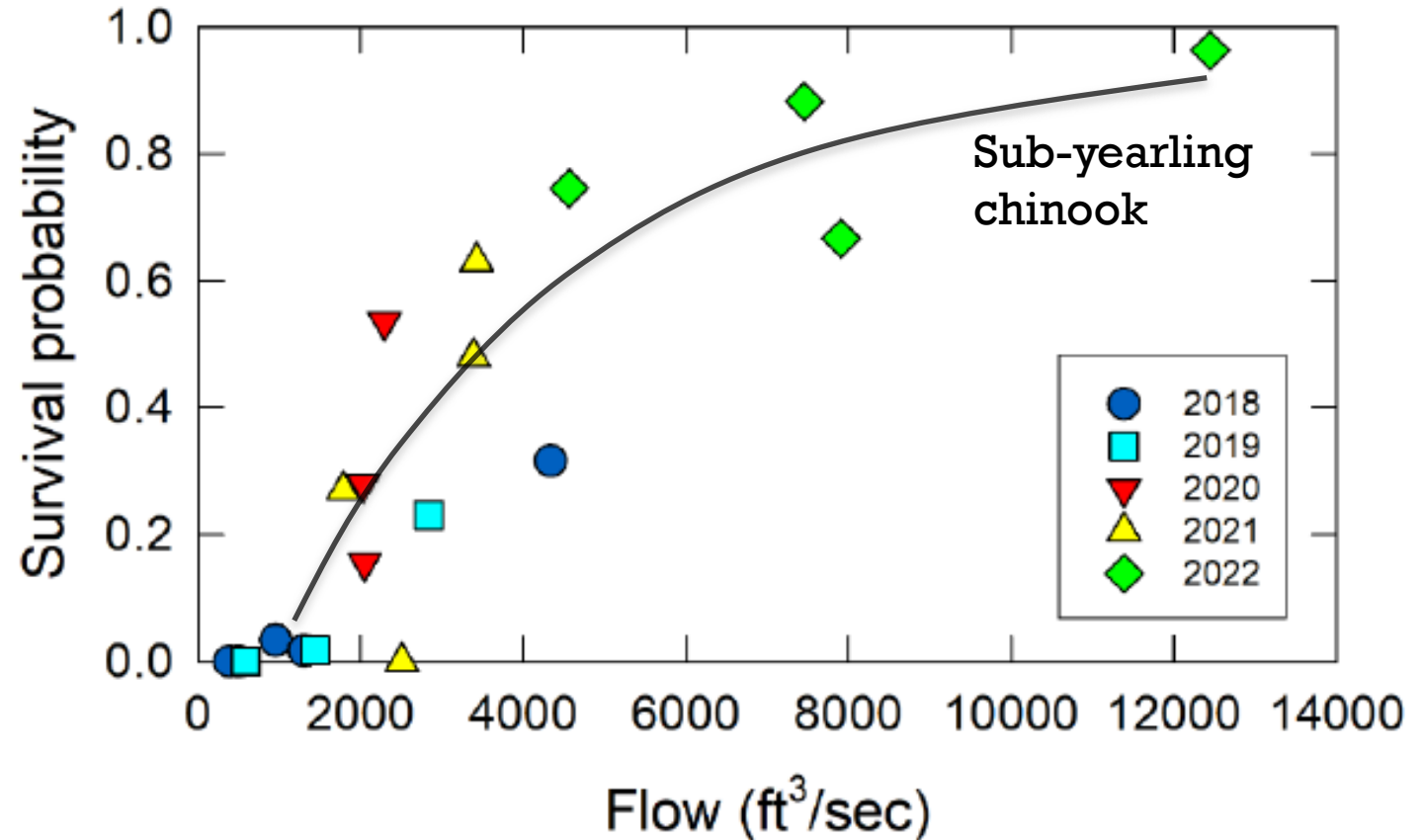
- Streamflow-overarching variable
- Diversions
- Water quality
- Predation
- Stargrass
- Habitat

- 5 facilities/features
- 5 inter-reaches
- 110 river miles



Streamflow-critical link for all other factors

- Adequate flow improves passage at diversions and in inter-reaches
- Flow interacts with all other factors:
 - Temperature
 - Entrainment
 - Velocity
 - Turbidity
 - Water star grass
 - Predation
 - Duration of passage



Survival from above Wapato Dam to 395 bridge over Columbia River
Kock et al 2023, USBR Presentation

Updates for Selected Projects

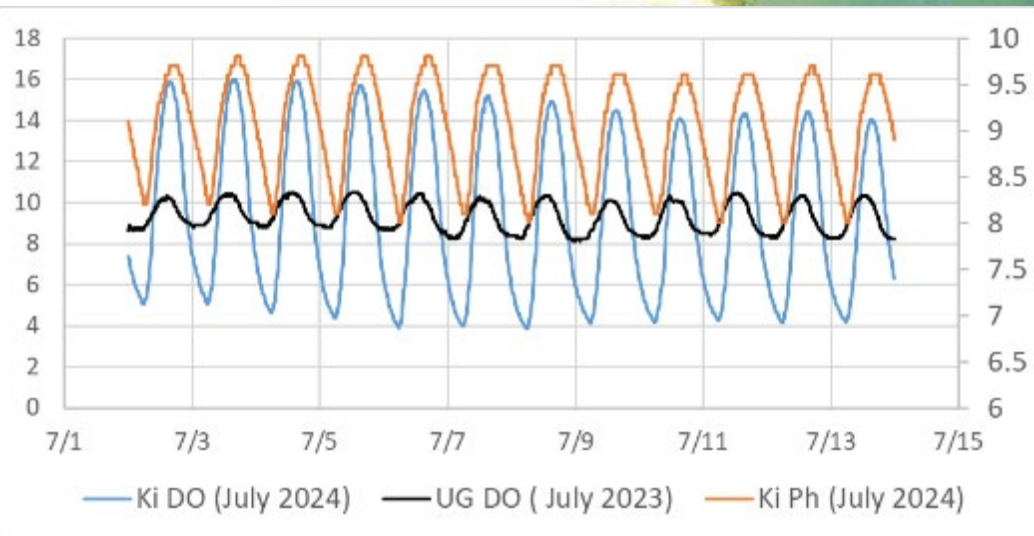


- Water Stargrass
- Bateman Island
- Prosser Dam
- Wapato Dam

Water stargrass management

- Mowing and hand-pulling are in progress (BDC)
- Need to scale up, evaluation is ongoing
- Multi-objective: irrigation, fish migration and spawning, mosquito hazards

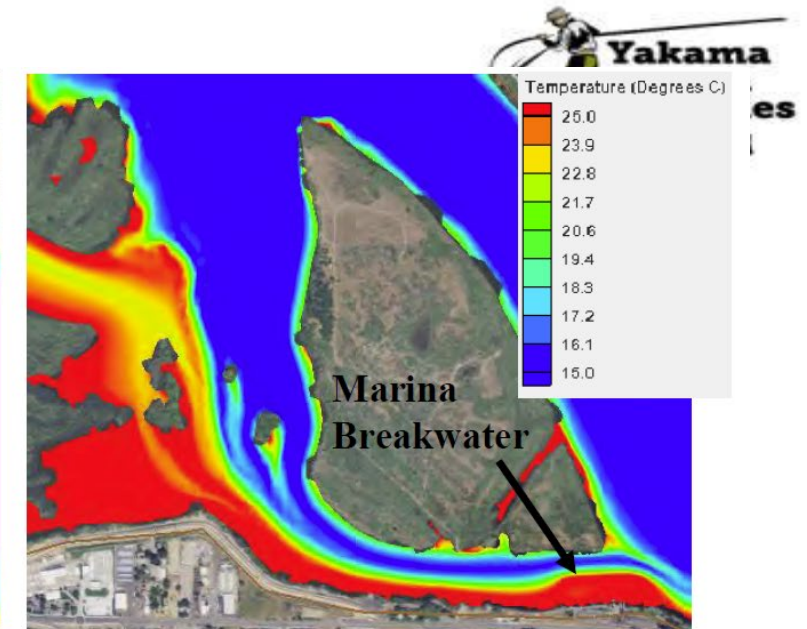
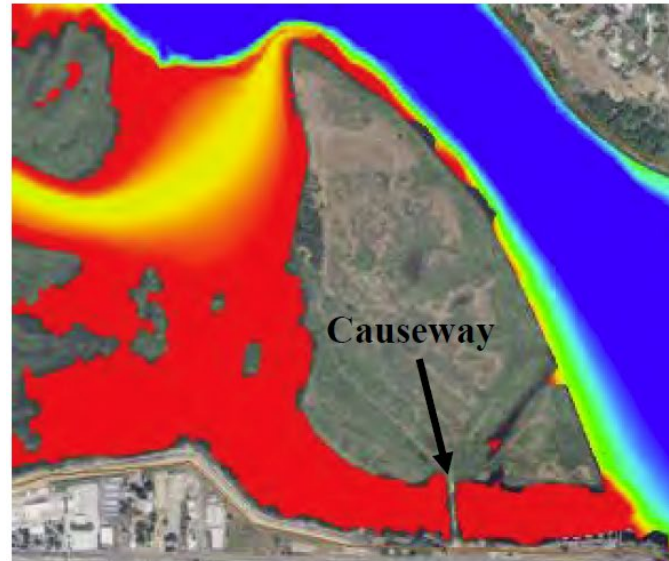
Wanawish Dam



Lower river water quality vs reference reach

Bateman Island

- Good news! Sediment findings were positive
- Negligible impact on cost and schedule



Prosser Dam and Diversion

- Biggest killer of juveniles among facilities
- Still in pre-design phase, alternatives being evaluated
- Complex: need to eliminate entrainment and predation mortality, maintain monitoring capability in lower River
- Flow considerations are key:
 - Electrification
 - Subordination
 - Power Generation



Wapato Dam and Diversion



- Feasibility report expected in early 2025
- Multi-objective: fish passage, irrigation, harvest, river function, flood risk reduction
- Key elements:
 - Headworks replacement
 - Nature-like fishways
 - Adjustable crest with gates
 - Channel restoration

Estimated timeline for major projects:

Project/issue	2023	2025	2027	2029	2031	2033	2035	2037	2039	2041	2043	2045	
Bateman Island	INFRASTRUCTURE												
Wapato Dam	INFRASTRUCTURE												
Prosser Dam	INFRASTRUCTURE												
Sunnyside Dam			INFRASTRUCTURE										
Wanawish Dam			INFRASTRUCTURE										
Subordination/power nexus	INFRASTRUCTURE												
Habitat	PROJECT-BASED												----->
Predation	ONGOING MANAGEMENT												—————>
Star Grass	ONGOING MANAGEMENT												—————>
WQ (reach wide temp)	ONGOING MANAGEMENT												—————>
Flow management	ONGOING MANAGEMENT												—————>
Passage/Survival Monitoring	ONGOING MONITORING												—————>

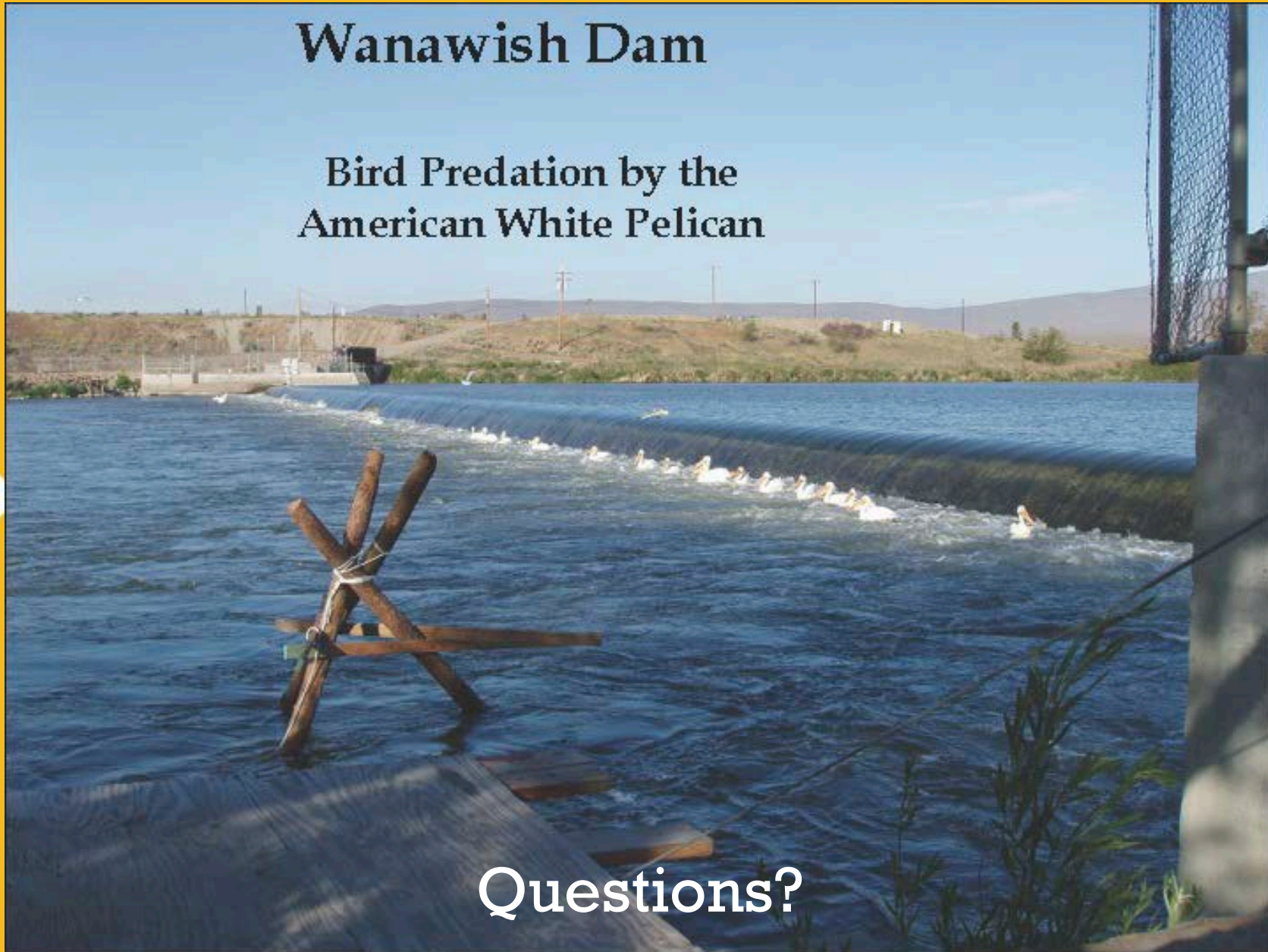
Yakima Basin Integrated Plan Partners- Thank you!



Plus, many others: Benton Conservation District, Mid-Columbia Fisheries Enhancement Group....

Wanawish Dam

Bird Predation by the American White Pelican



HO

RE.

Questions?

POM POM RM40, TOPPENISH CREEK UPDATE

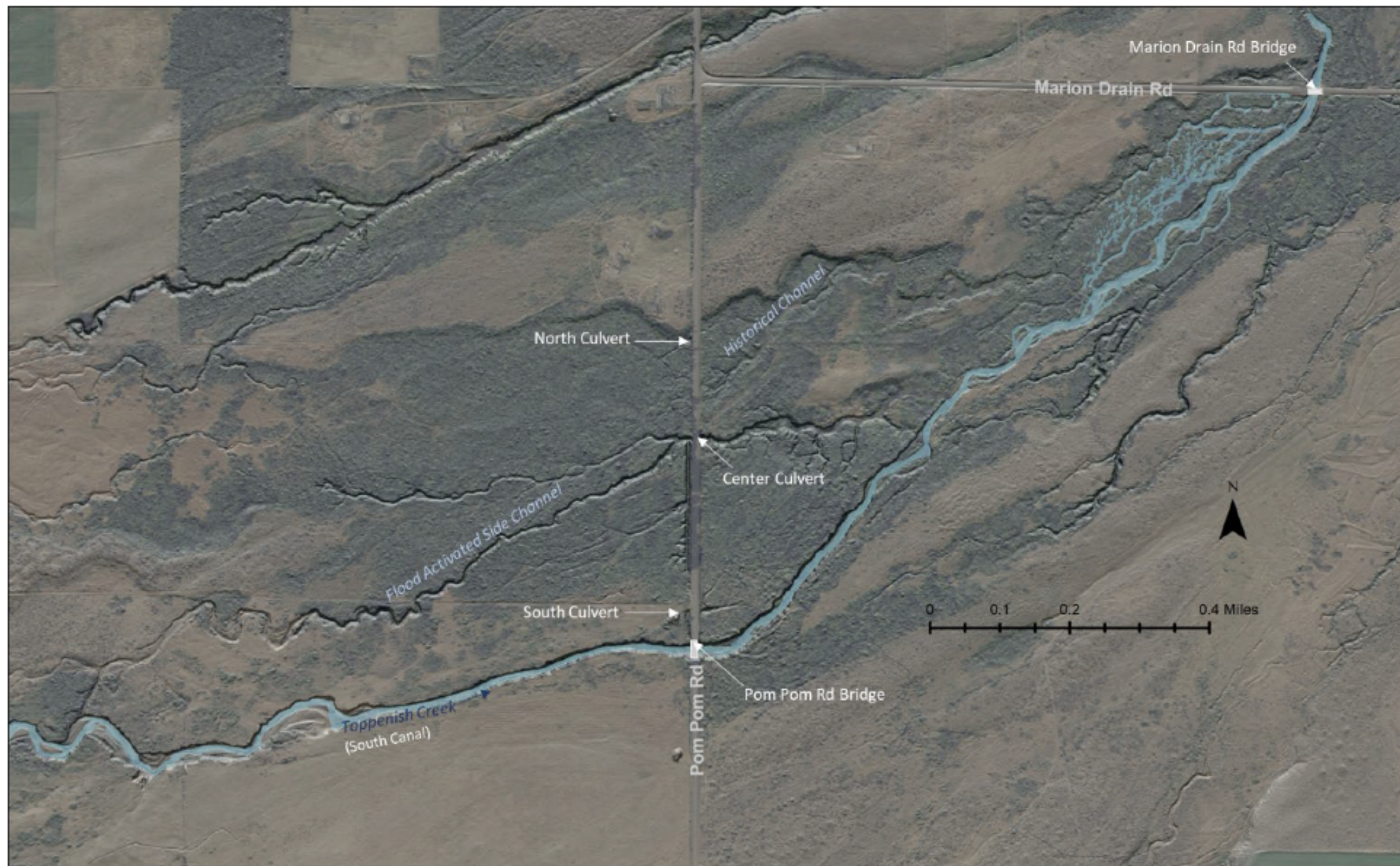
Shawna Warehime

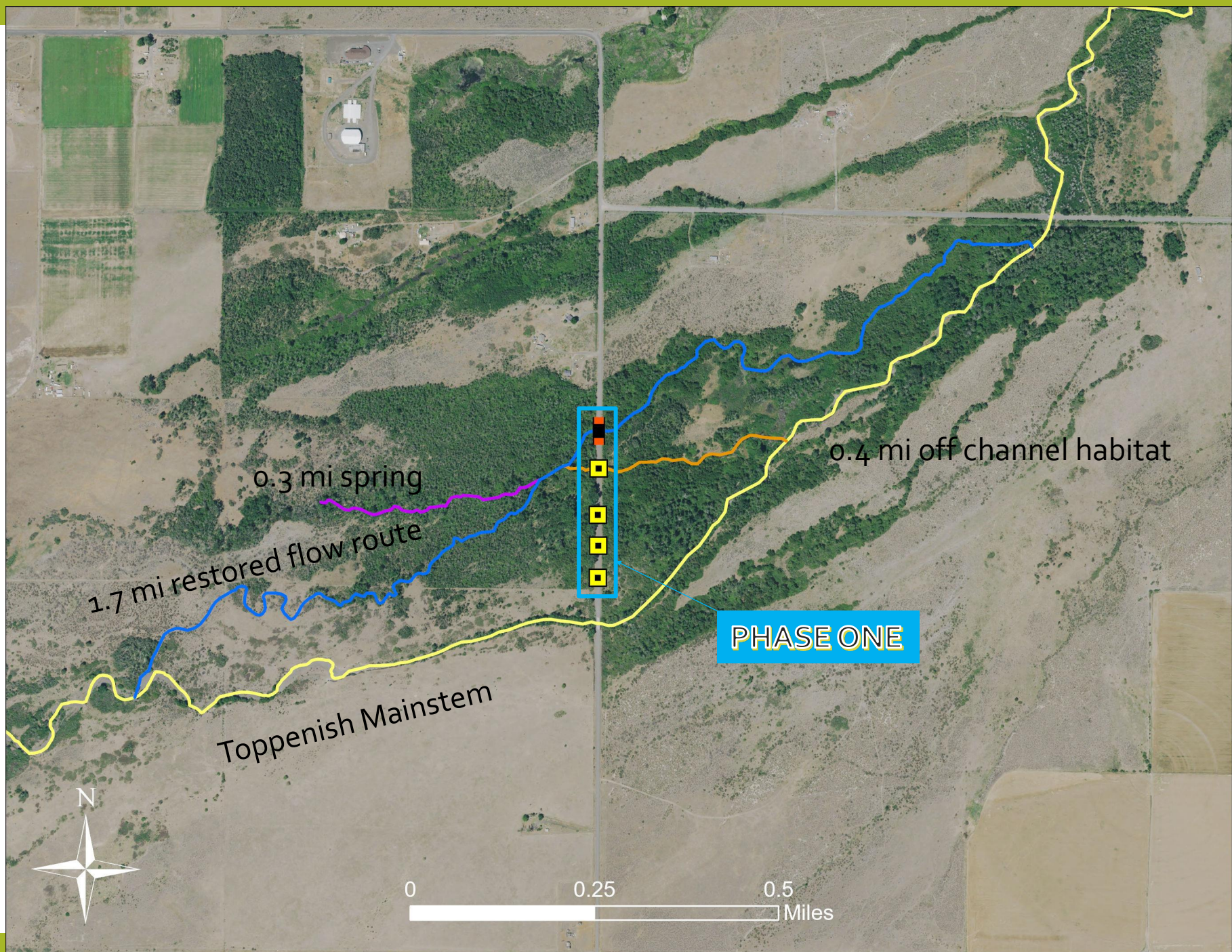
Yakama Reservation Watershed Project

9/11/2024









COMPLETED TO DATE

(*think pre-fire*)

- 100% Final restoration designs
- 95% Bridge / road designs
- Completed environmental compliance
- Completed section 106
- 80% through 401 / 404 permit pathway
- Construction RFB drafted



SLIDE RANCH FIRE EFFECTS

- SLIDE RANCH FIRE – 3,118 ACRES BURNED
- TWO AVENUES TO APPROACH AREA POST BURN:
 - BAER TEAM ASSESSMENT – REPORT SHARED AT REQUEST
 - EMERGENCY STABILIZATION
 - BURNED AREA REHAB PLANNED
 - YRWP
 - INTERFLUVE RE-ASSESS AND MODEL RESTORATION AREA FOR INCREASED SEDIMENTATION ETC.
 - WILL INFORM IF BRIDGE DESIGNS ARE STILL ACCEPTABLE WITH UPSTREAM CHANGES



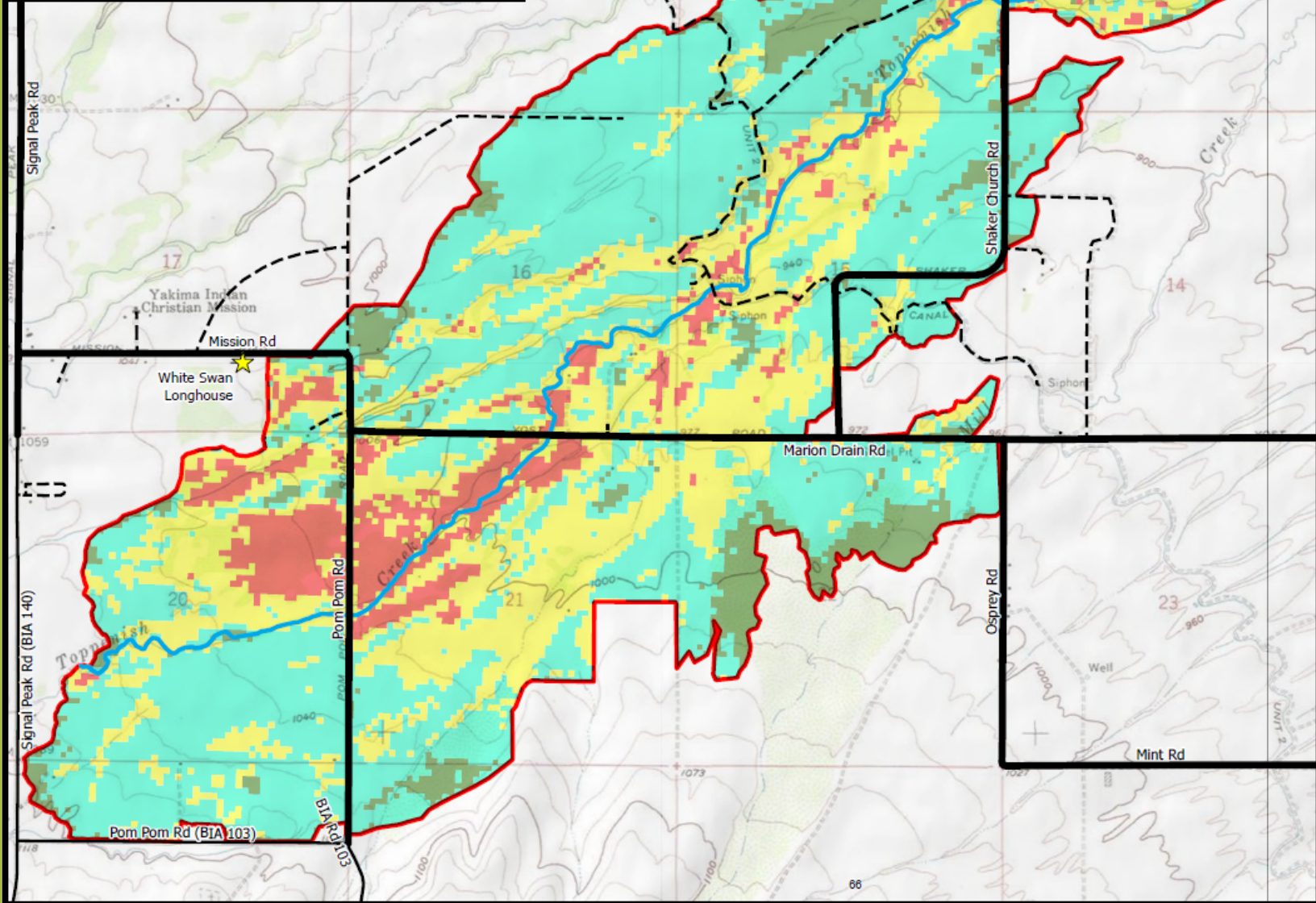
BAER ASSESSMENT

- 241 ACRES HIGH SEVERITY BURN
- 962 MODERATE SEVERITY BURN
(See next slide for burn map)



Photo provided from 1980 Slide Ranch BAER report

Soil Burn Severity Acres			
	Trust	Fee	Total
Unburned	273.7	2.9	276.6
Low	1634.6	4.3	1638.9
Moderate	958.2	3.4	961.6
High	240.8	0.2	241



Soil Burn Severity 1980 Slide Ranch Fire

DOI National BAER Team, 2024

3,118 Acres
Yakama Agency
Bureau of Indian Affairs

- Unburned
- Low Burn Severity
- Moderate Burn Severity
- High Burn Severity

- County Road
- BIA Road
- Other Road
- White Swan Longhouse
- Toppenish Creek
- Fire Perimeter

0 1,000 2,000 4,000 Feet

0 0.25 0.5 1 Miles

YAKAMA NATION

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

DOI National BAER Team, July 23, 2024

SUPPLIED
FROM
BAER
REPORT

BAER ASSESSMENT

- RIPARIAN MANAGEMENT ZONE (RMZ) TREATMENTS
- PLANT OBSERVATIONS
 - NATIVE RANGELAND, RIPARIAN WOODLAND AFFECTED
 - MODERATE AND HIGH INTENSITY BURN AREAS = FINE ROOTS CONSUMED / CHARRED
 - NATIVE SPECIES RE-SPROUTING POST BURN



Fig 1. Smooth sumac



Fig. 2 Alder (spp.)



Fig. 3 Bunchgrass

Photos provided from 1980 Slide Ranch BAER report

YRWP Tandem Approach

- IFI RESTORATION PLANS TO INCREASE VEGETATION PLAN
- INCREASE IN FLOODPLAIN ROUGHNESS
- INCREASE IN BANK STABILIZATION FIGURES
- NEW MODELING
- IMPACTS FOR TIMELINE

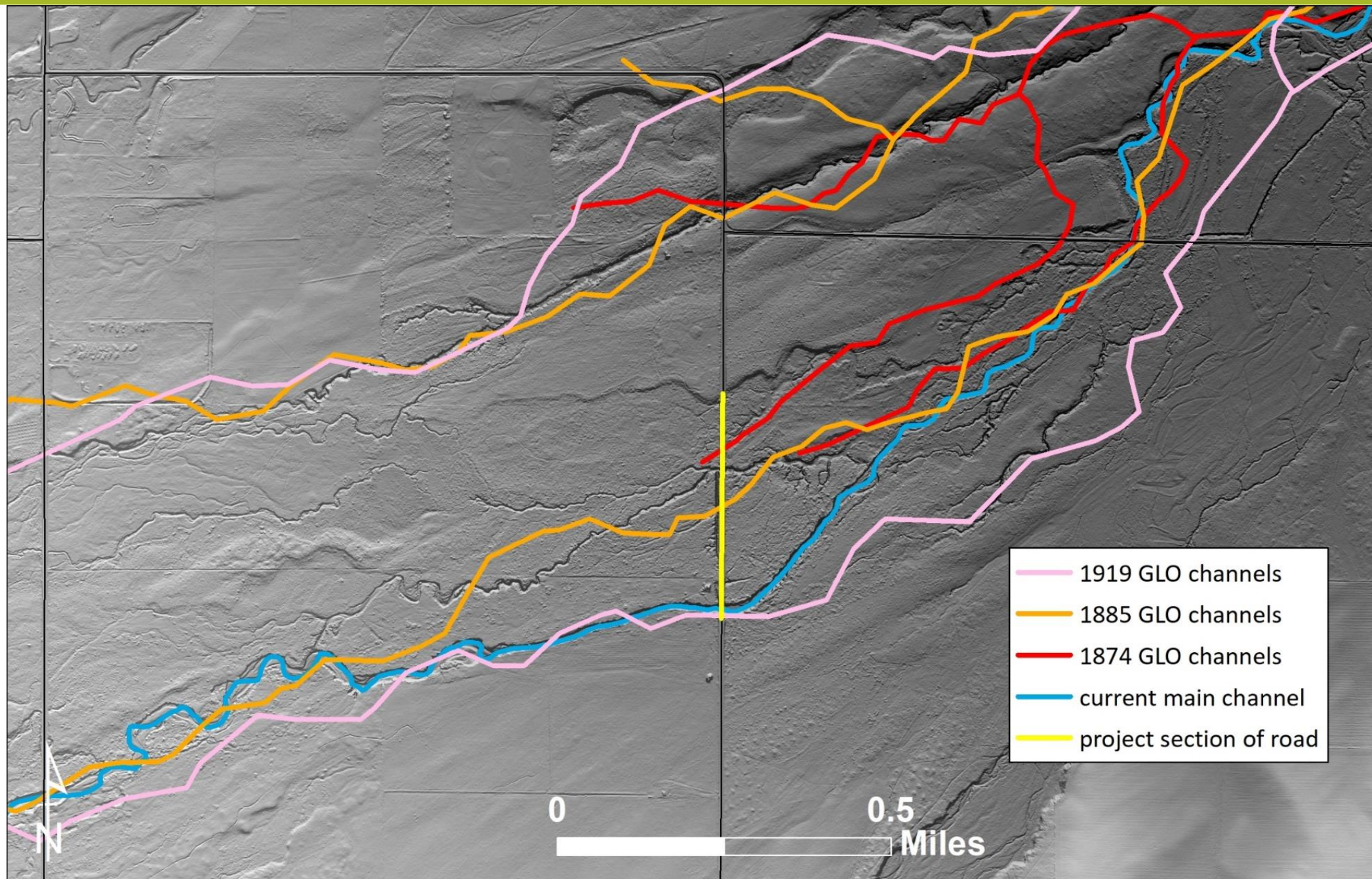


A photograph of a river flowing through a forest of bare trees. The river is in the foreground, with water reflecting the blue sky. The banks are covered with dry, brown vegetation and rocks. The trees are tall and thin, with no leaves, and their branches are silhouetted against the sky. The sky is a clear, bright blue. The text "Thank You Questions?" is overlaid on the bottom right of the image.

Thank You
Questions?

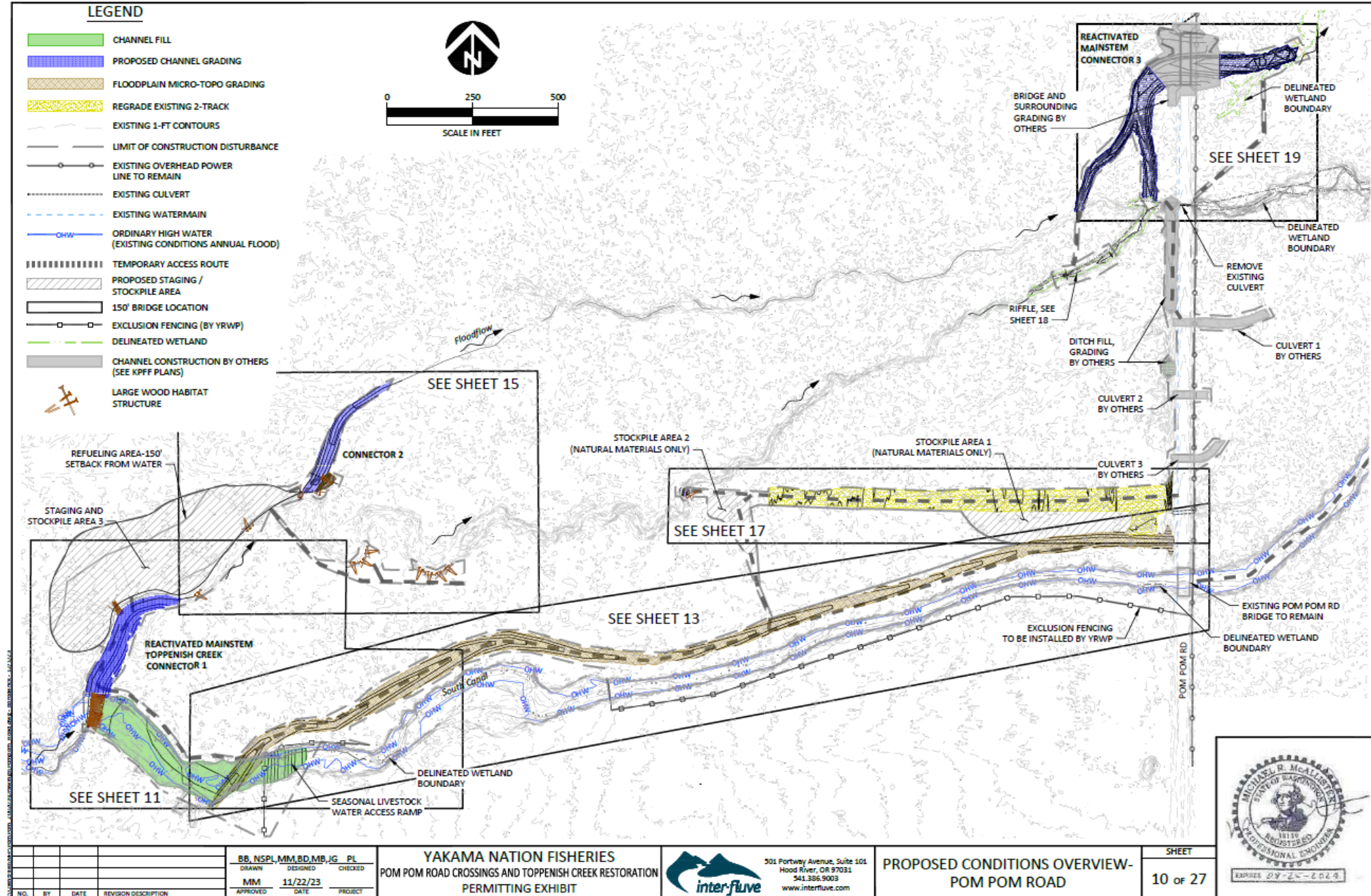
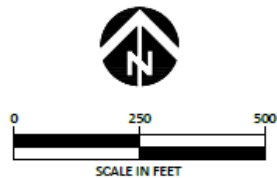
Additional if time allows or helps answer questions

- GLO maps Showing historical flow paths
- Design overview as it stands prior to post fire changes



LEGEND

- CHANNEL FILL
- PROPOSED CHANNEL GRADING
- FLOODPLAIN MICRO-TOPO GRADING
- REGRADE EXISTING 2-TRACK
- EXISTING 1-FT CONTOURS
- LIMIT OF CONSTRUCTION DISTURBANCE
- EXISTING OVERHEAD POWER LINE TO REMAIN
- EXISTING CULVERT
- EXISTING WATERMAIN
- ORDINARY HIGH WATER (EXISTING CONDITIONS ANNUAL FLOOD)
- TEMPORARY ACCESS ROUTE
- PROPOSED STAGING / STOCKPILE AREA
- 150' BRIDGE LOCATION
- EXCLUSION FENCING (BY YRWP)
- DELINEATED WETLAND
- CHANNEL CONSTRUCTION BY OTHERS (SEE KPFF PLANS)
- LARGE WOOD HABITAT STRUCTURE



NO.	BY	DATE	REVISION DESCRIPTION

BB	NSPL	MM	BD	MB	JG	PL
DRAWN	DESIGNED	CHECKED				
MM	11/22/23	PROJECT				
APPROVED	DATE	PROJECT				

YAKAMA NATION FISHERIES
POM POM ROAD CROSSINGS AND TOPPENISH CREEK RESTORATION
PERMITTING EXHIBIT

301 Portway Avenue, Suite 101
 Hood River, OR 97031
 541.386.9003
 www.interfluve.com

PROPOSED CONDITIONS OVERVIEW-
POM POM ROAD

SHEET
10 of 27





2024 – Special Operations: Drought Impacts Wapato Irrigation Project

GRAYSEN SQUEOCHS, PE
YAKAMA NATION
ENGINEERING

WIP Water Supply

Water Rights – Senior and Proratable

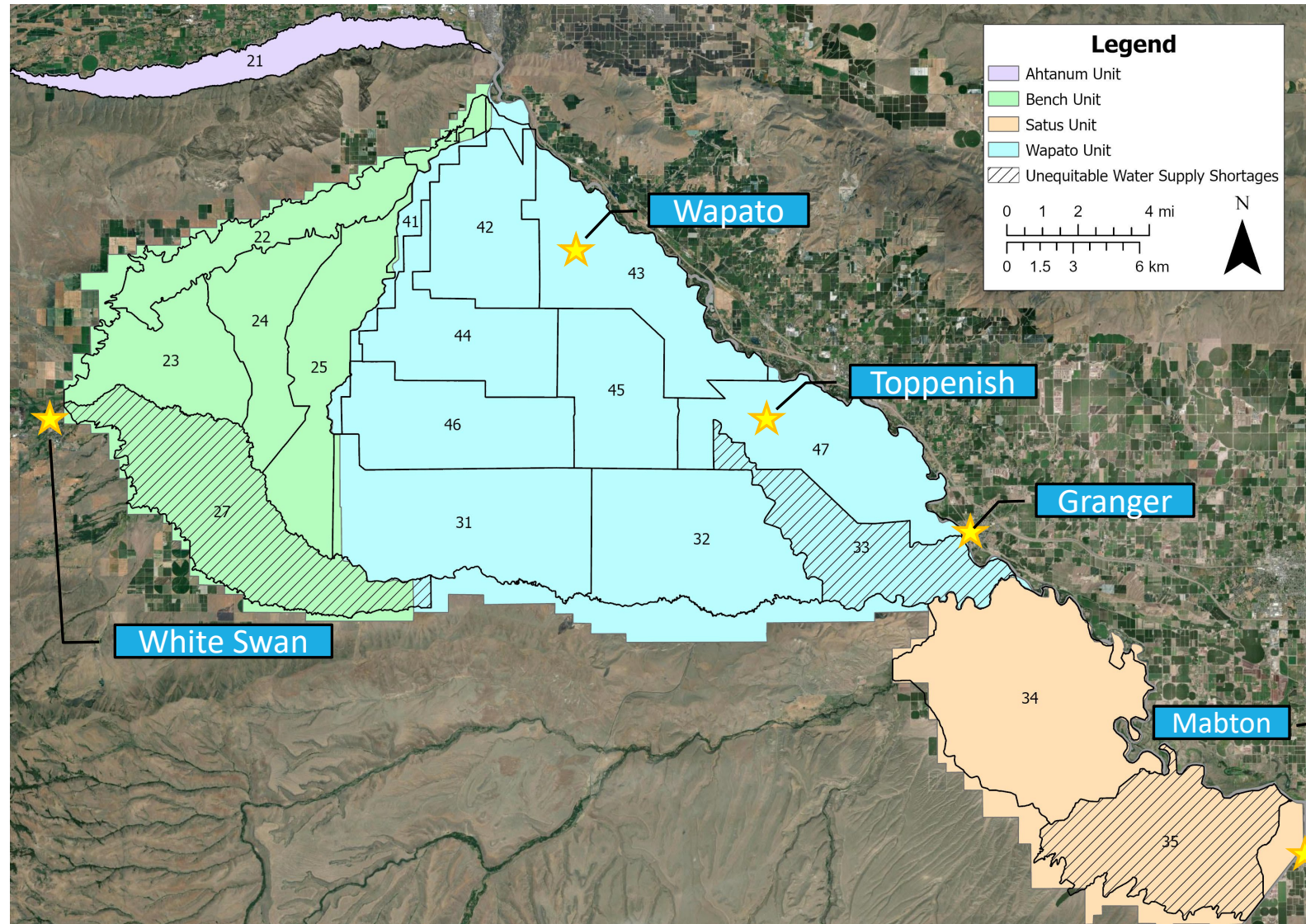
Infrastructure

- Difficult to distribute shortages equitably
- WIP manages flow through manual measurement
- Shutdown and restart not feasible until significant system upgrades are complete

WIP will adjust the diversion schedule to use most of the remaining proratable supply during the first half of September.

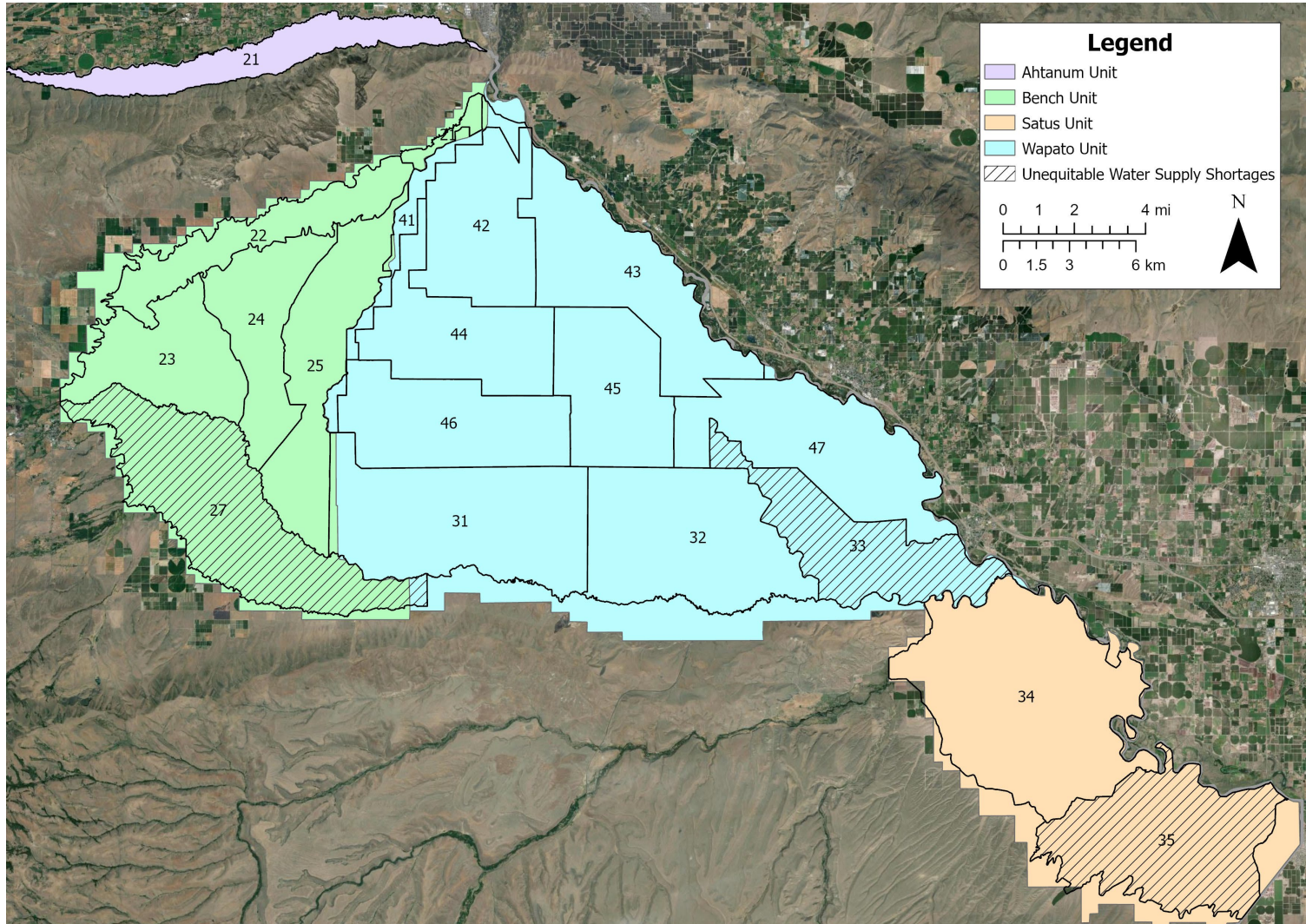


Areas of Perennial Shortage



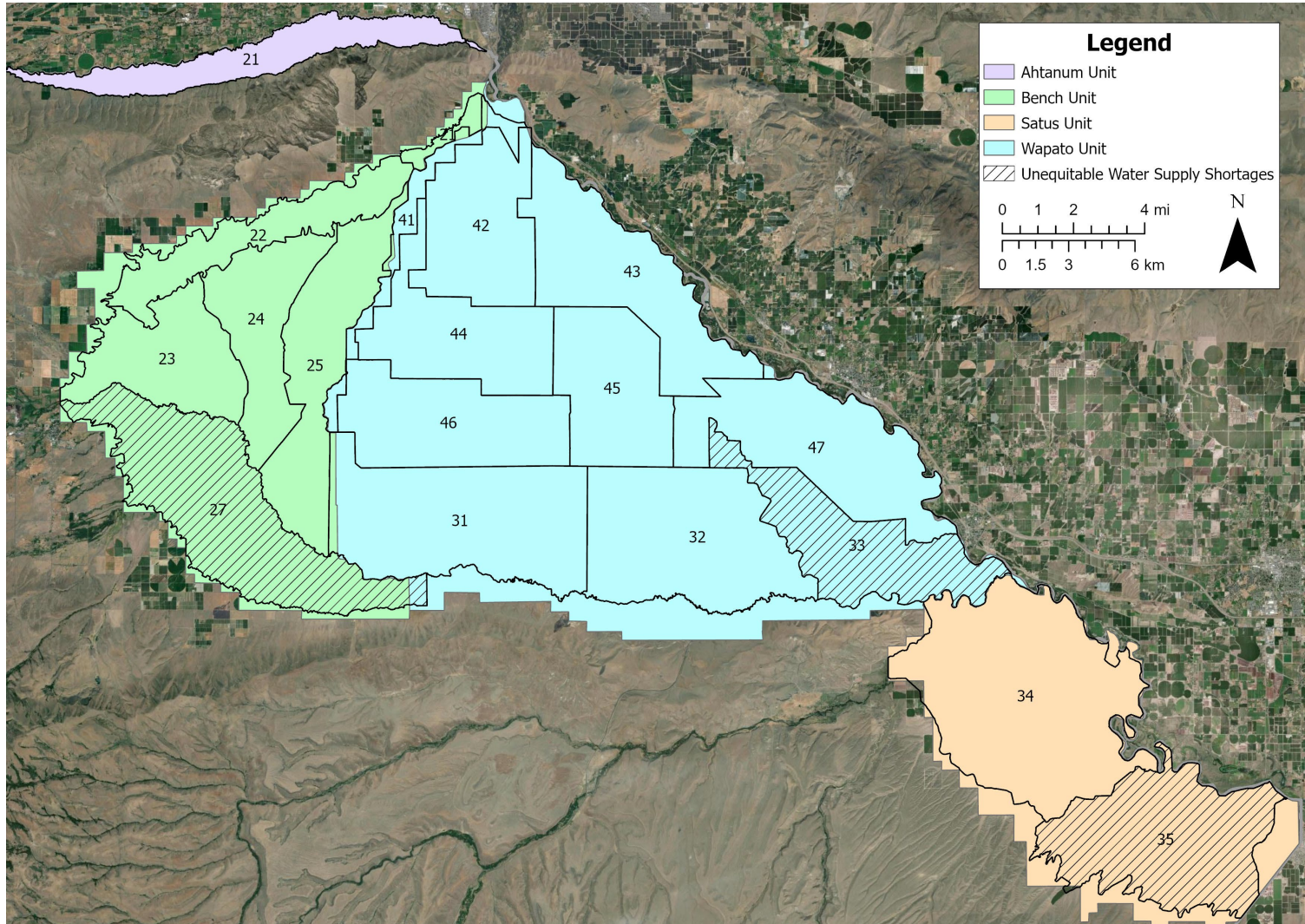
Source – WIP Conservation Plan

2024 Drought Plan



- 2016 DRAFT - ITRC Drought Plan: Key Recommendations
 - Flow rate data is of high priority
 - Critical flow control to areas impacted under normal conditions
 - Use of “fast-track” Laterals
 - Existing infrastructure only allows for rotational deliveries to manage shortages
 - Irrigation System Operator (ISO) training and accountability

2024 Drought Plan



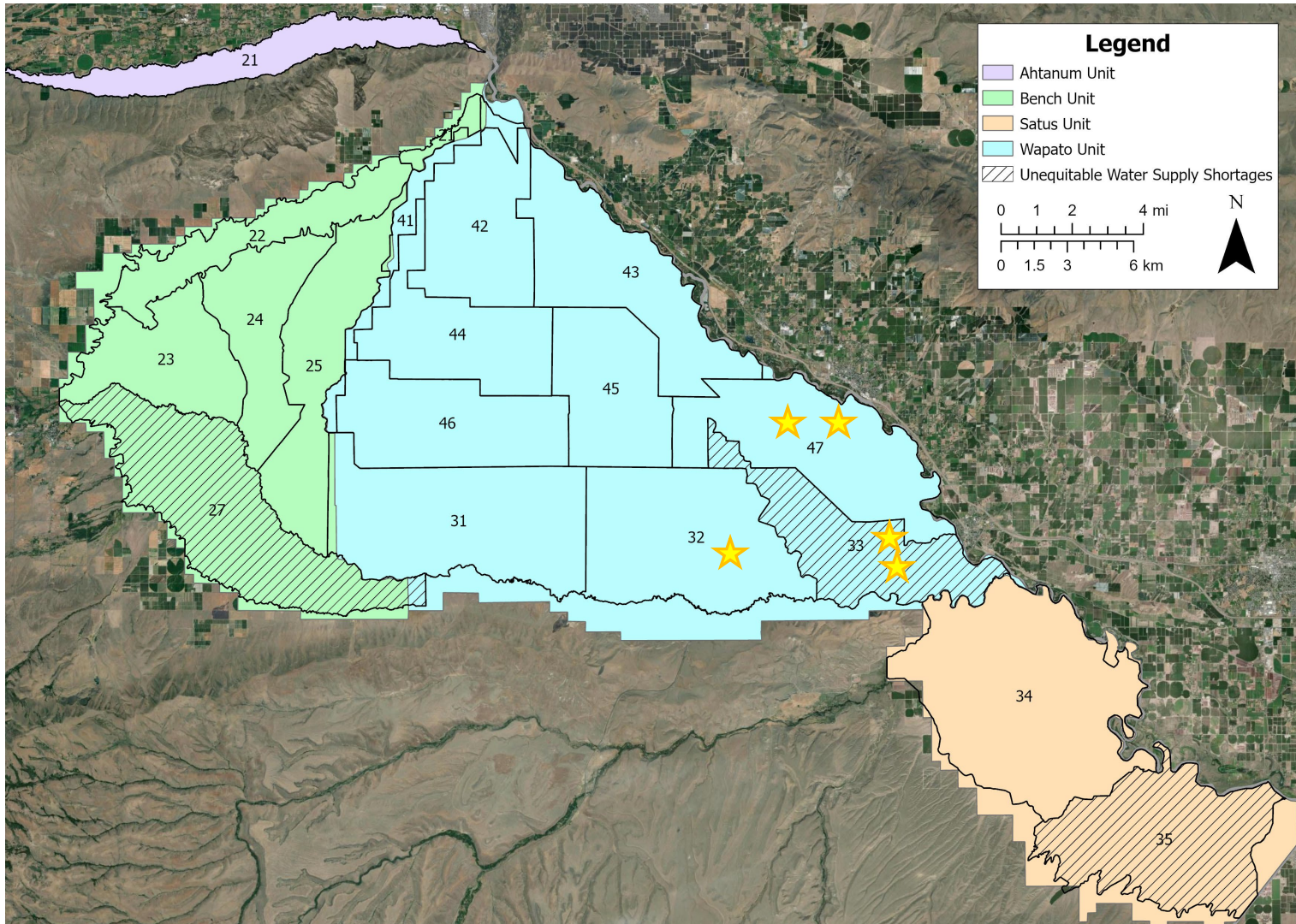
- Other Activities
 - Development of a WIP drought relief well testing and repair plan
 - Enhancement of Pumpbacks
 - Water user engagement

2024 Drought Response



- Development of a drought relief well testing and repair plan for WIP Wells
 - 21 sites inspected
 - 11 Operational, 10 additional testing/repairs
- Quantity Captured
 - Approx. 17 CFS
 - Approx. 5300 ac-ft

2024 Drought Response



- Drain pumpback station repairs
 - Harris Pumpstation
 - Lateral 4 Extension (New Temporary)
 - Annahat Rd. and Blue Heron Rd. Pump Station
 - Annahat Rd. Pump Station (East Toppenish Drain Pumps)
 - Becker Rd. and Yost Rd. Pump Station

2024 Drought Response

Drain pumpback station repairs



Harris Pumpstation

Drain P to Lateral 4 Ext. Spillway

Materials

- 3 – 30 HP vertical pumps replaced
- 4 – Electrical pump control panels

Quantity Recaptured

- Peak flow 44 CFS
- Approx. 5,000 Acre-Ft this season

Material Cost: \$89,000

2024 Drought Response

Drain pumpback station repairs



Lateral 4 Ext. Spillway to Lateral 4 Ext.

Materials

- 60HP VFD submersible pump (on hand)
- 75 ft of piping (on hand)
- Electrical service

Quantity Recaptured

- Peak Flow 10 CFS
- Approx 2,300 Acre-Ft this season

Material Cost: **\$20,000**

2024 Drought Response

Drain pumpback station repairs



Lateral 4 Ext. Spillway to Lateral 4 Ext.

Materials

- 60HP VFD submersible pump (on hand)
- 75 ft of piping (on hand)
- Electrical service

Quantity Recaptured

- Peak Flow 10 CFS
- Approx 2,300 Acre-Ft this season

Material Cost: **\$20,000**

2024 Drought Response

Drain pumpback station repairs



East Toppenish Drain to Track Lateral Materials

- 30 HP vertical pumps replaced
- Scheduled for Winter 24/25
 - 3 – Electrical pump control panels
 - Trash rack repair

Quantity Recaptured

- Peak flow 33 CFS
- Approx 3,800 Acre-Ft this season

Cost: \$50,000

2024 Drought Response

Drain pumpback station repairs



East Toppenish Drain to Track Sublateral F Materials

- 2 – 30HP vertical turbine pumps replaced
- Site concrete repair and earthwork
- Scheduled for Winter 24/25
 - 2 – Electrical pump control panels
 - Trash rack repair

Quantity Recaptured

- Station peak flow: 22 CFS
- Est. 2,700 Acre-Ft reclaimed this season.

Cost: \$60,000

2024 Drought Response

Drain pumpback station repairs



Drain T to Sublateral L4-414

Materials

- 1 – 30HP vertical turbine pumps replaced

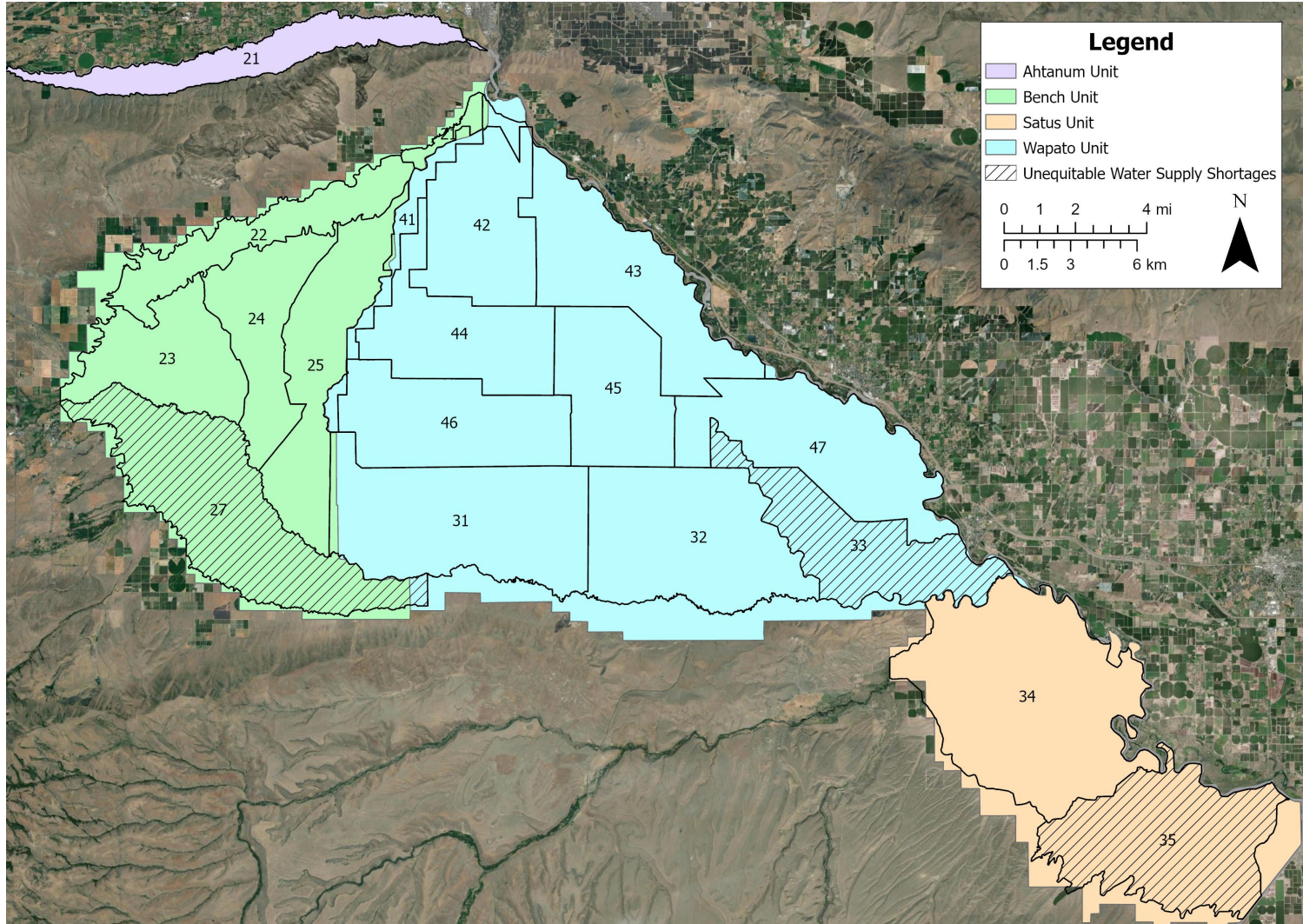
Quantity Recaptured

- Station peak flow: 33 CFS
- Est. 9,000 Acre-Ft reclaimed this season.

Cost: \$23,000

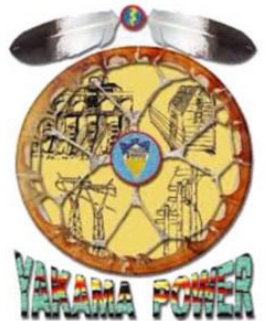
2024 Drought Response

Drain pumpback station repairs

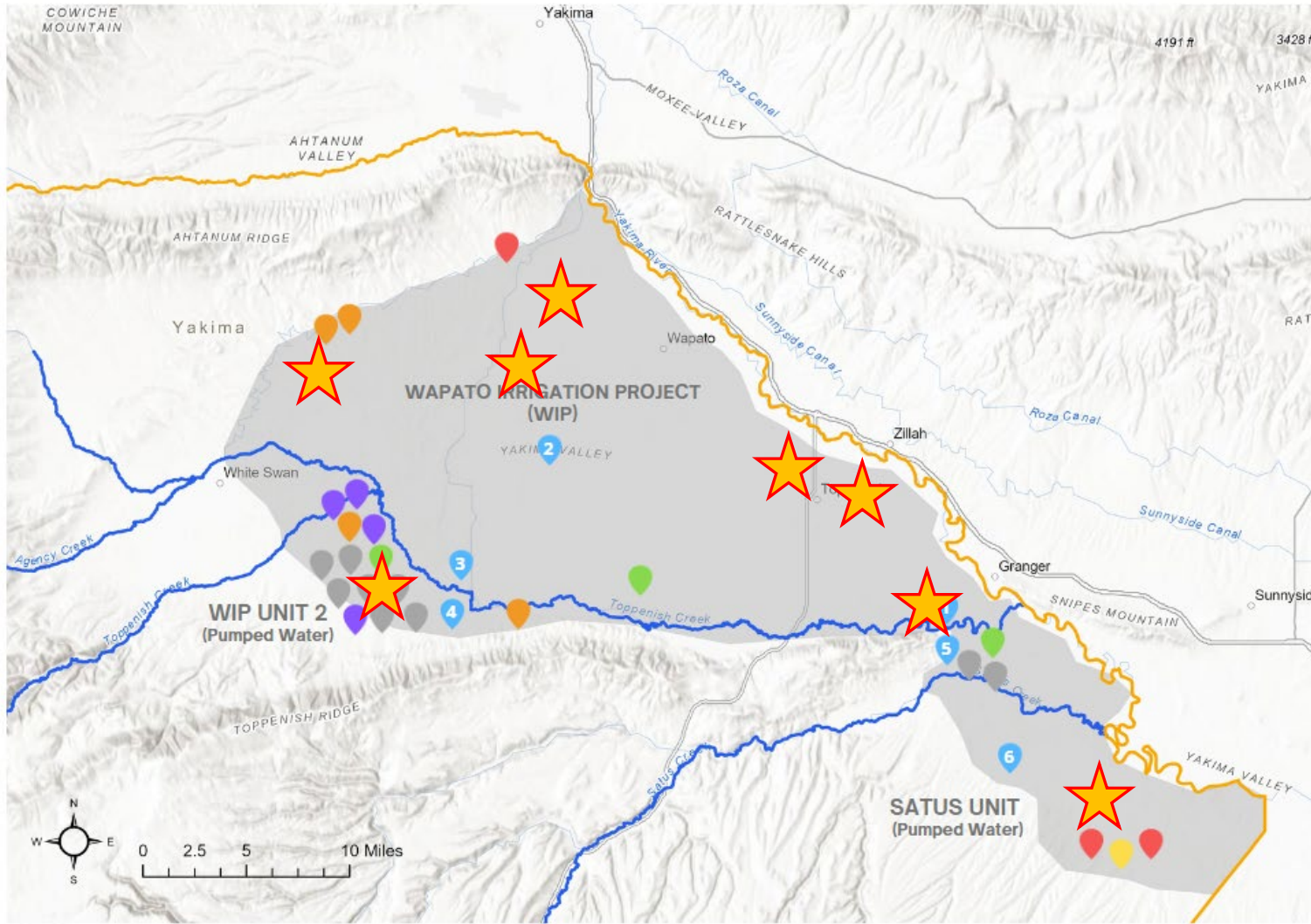


- Approximately 80 CFS recovered during the 2024 Season
 - 50 CFS operational today
 - 30 CFS to be brought online in the 2024/2025 winter due to electrical upgrades/repairs
- Estimated Total of 22,000+ Acre-ft reclaimed this season
- Estimated Cost: \$500,000
- \$23 per Acre-Ft

Thank you to our Teams



Ongoing Conservation



★ 2025 Conservation Projects

- ★ P967 – Pipeline Construction
- ★ Additional Pumpstation Assessments/Repairs
- ★ Parton Pumpstation and Pipeline Repairs
- ★ Track Lateral C Pipeline Conversion
- ★ Track Lateral D Pipeline Conversion
- ★ Flowmeter repairs