

Yakama Reservation Watershed Project-Overview of Activities and Plans



Yakima Basin Science and Management Conference
Tom Elliott, Yakama Nation
June 14, 2023

Position in YN government

Yakama Nation General Council and Tribal Council

Department of Natural Resources
(Forestry, Engineering, Environmental,
Water Resources, Wildlife)

Yakama Nation Fisheries

Habitat

Harvest

Hydro

Production

TFW

Status &
Trends

M & E

Southern
Ceded

Yakima Ceded

Upper Columbia

Lower Yakima

Superfund

YRWP
&
TCCEP

Mission and Goals

Mission

Restore fish habitat and manage watersheds to conserve and recover anadromous fish populations in support of traditional and treaty rights harvest by the Yakama people.

Goals

1. Restore fish habitat in degraded channels and floodplains in all reaches.
2. Restore full fish passage throughout anadromous and resident fish habitat.
3. Maintain and restore water quality and natural flow regimes in all stream reaches.
4. Manage watersheds to support natural and climate resilient hydrology.

Approach and Strategy

Integrate Tribal values and knowledge, science, and adaptive management to focus management actions for maximum fish population benefits.

Program Structure

Project Lead-
coordinate all
activities
(Tom Elliott)

**YRWP Lead
Bio-**run all
projects and
watershed
management
(Shawna
Warehime)

**Lead
Scientist-**
manage
monitoring
and
research
(Tim
Resseguie)

**Toppenish
Corridor Bio-**
lower
Toppenish
projects and
assessment
(Kelsey
Harbick-
Martin)

**Forest
Management
Bio-**headwaters
projects and
timber harvest
compliance
(Dallas Reed)

Archeologist-
cultural
compliance
(Serafina Ferri)

Project Bio-
plan and
implement
projects
(vacant)

Habitat Technicians (5)-implement fish monitoring
(trap and tag, redds surveys), watershed protection
(fencing, stock management), WQ monitoring (flow,
WT, habitat), restoration projects
Bill Flett, Jerald Reed, William Tomma, Lukas Moore
(1 position vacant)

**Realty
Specialist-**
land
permissions
and
community
outreach
(Oliver Pimms)

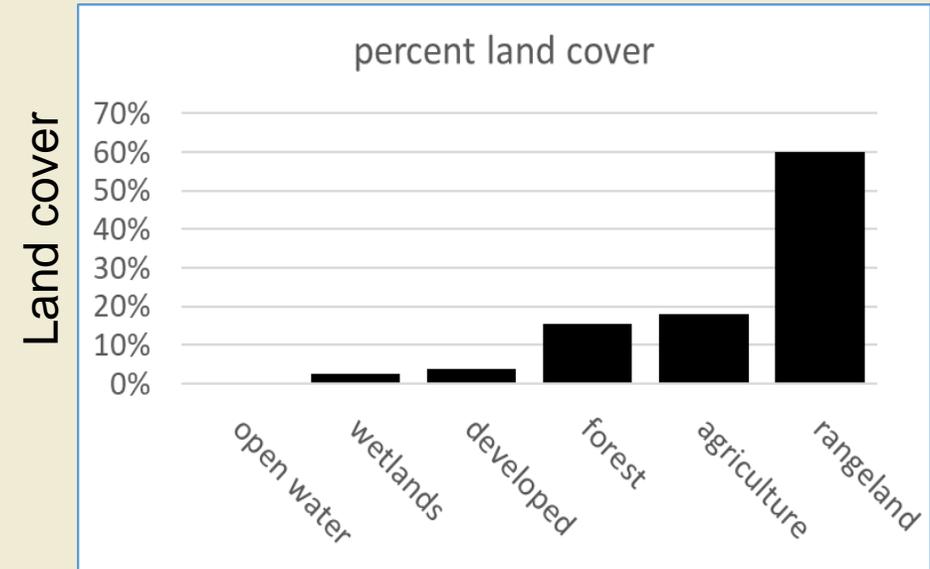
**TCCEP Water
Scientist-**
lower
Toppenish
GW
monitoring,
data
management,
an analysis
(Mary Weber)

**TCCEP Water
Techician-**
Toppenish SW
monitoring
(Anthony
Picard)

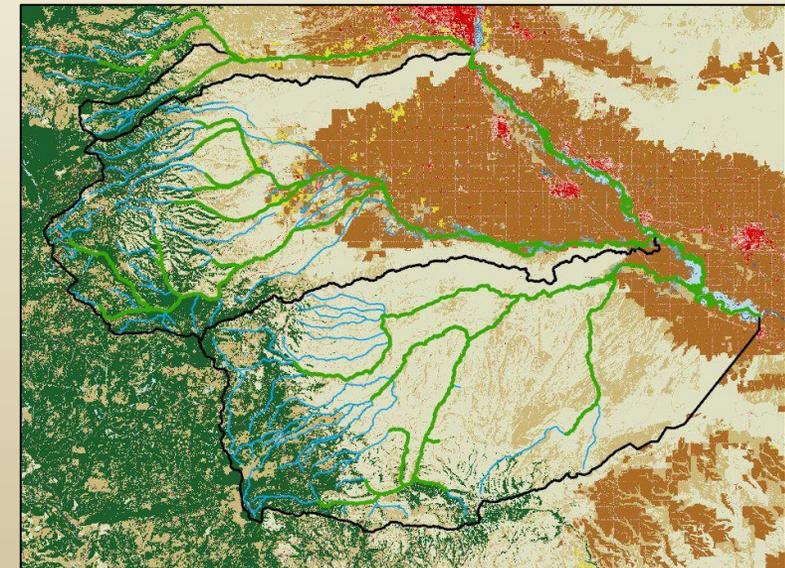
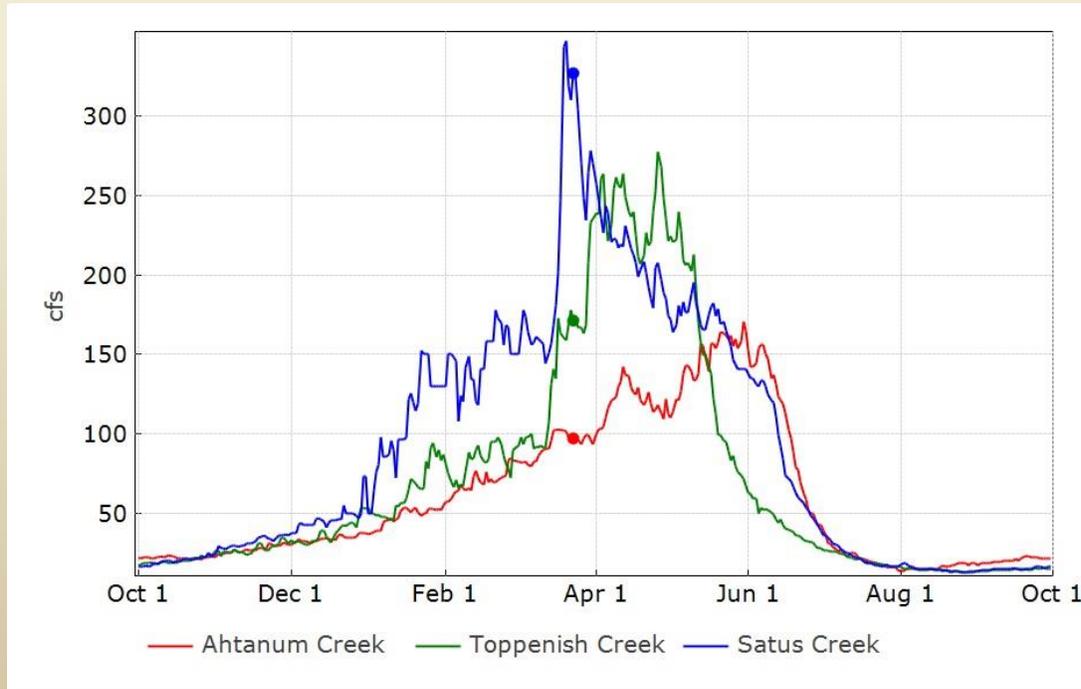
Basic Watershed Characteristics

Size and ITCRT potential (from SH recovery plan)

Watershed	Square miles	Critical Habitat miles	Intrinsic Potential	Focus species
Ahtanum	64	55		steelhead, bull trout
Toppenish	662	144	1.12	steelhead, lamprey
Satus	689	120	1.06	steelhead, lamprey
Yakima River		50		all stocks
Total	1,415	369	2.2	



Runoff patterns



Steelhead numbers

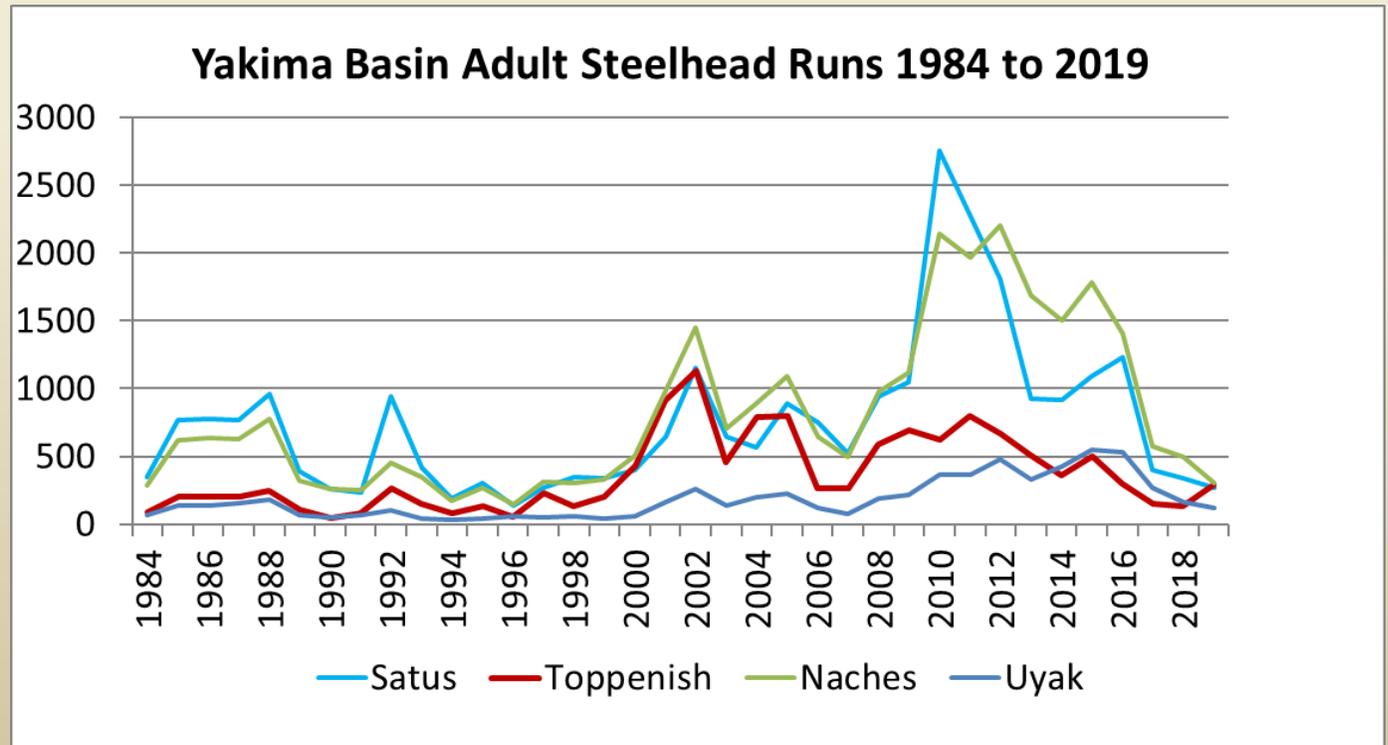
- Toppenish and Satus Creek produce disproportionately high numbers of steelhead under current basin conditions.
- These populations are critical to recovering the Yakima Basin steelhead population.



Satus Creek "bowling alley"

Toppenish/Satus metrics as percentage of Yakima Basin

	Critical			
	Square	Habitat	Intrinsic	Steelhead
landscape area	miles	miles	Potential	escapement
Toppenish/Satus	22%	25%	16%	50%



YRWP/TCCEP Major Activities

Water quality and flow monitoring

- Water temperature monitoring (>50 sites)
- Stream flow monitoring (~ 50 sites)
- Groundwater monitoring and database development (lower Toppenish)

Fish population monitoring

- Annual redd counts (>150 miles)
- Fish traps (5 traps)
- Juvenile steelhead tagging (1500-2000 per year)
- Electrofishing and snorkel surveys (5 to 15 sites)
- PIT array data (6 currently, with YKFP)
- Genetic sampling for kelt parentage

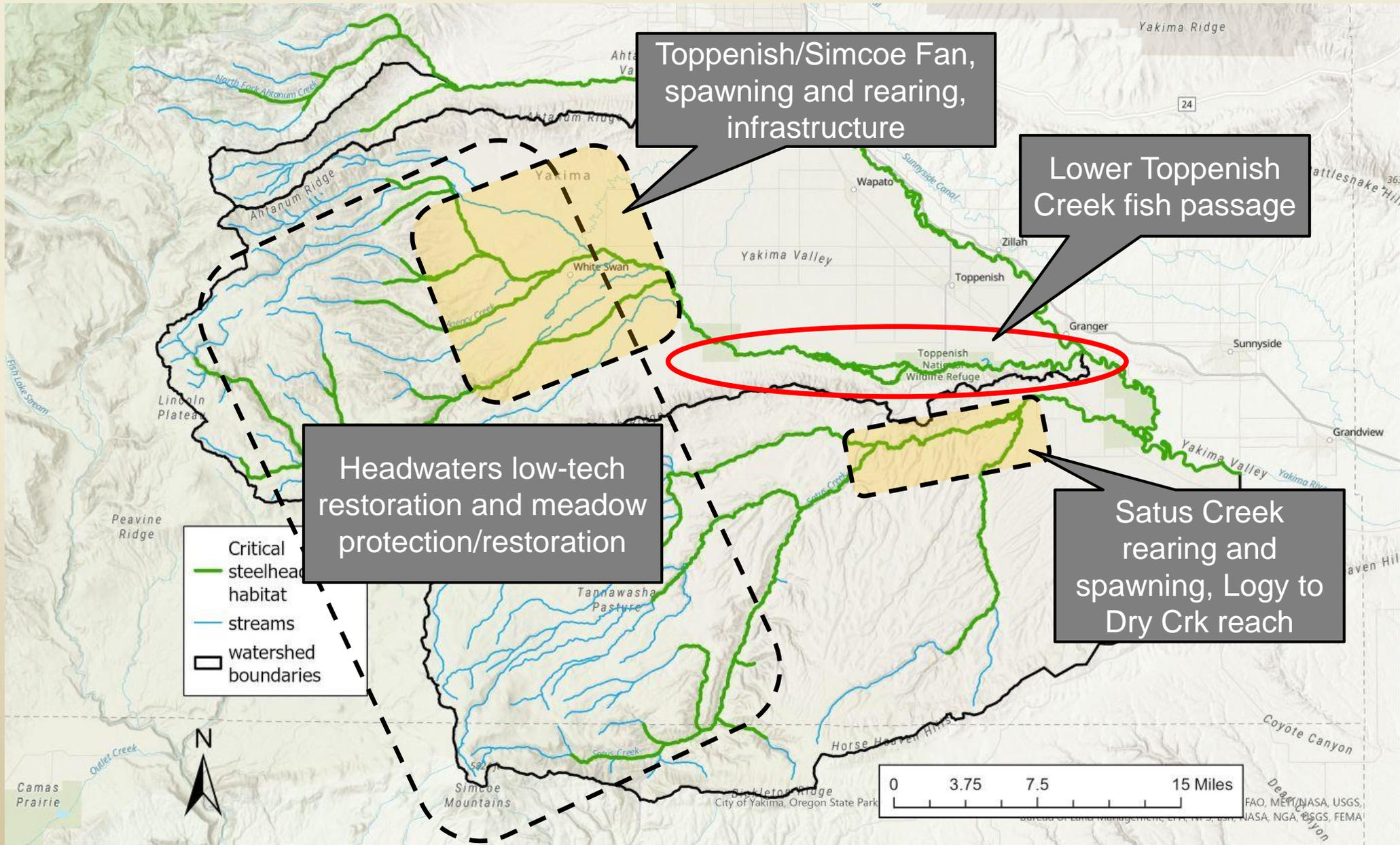
Habitat Restoration and Protection

- Work on 3 tributaries and Yakima River
- Ahtanum Creek and Yakima River in coordination with YKFP habitat team
- Fish passage restoration
- Headwaters low-tech restoration and meadow protection

Habitat Assessments and Monitoring

- Fish passage barrier assessment (ongoing, 280 miles total)
- Restoration assessments to support project planning
- Reach assessments directly linked to habitat restoration projects
- Pre- and post-project implementation and effectiveness monitoring

Current Focus Areas



Current and Planned Projects

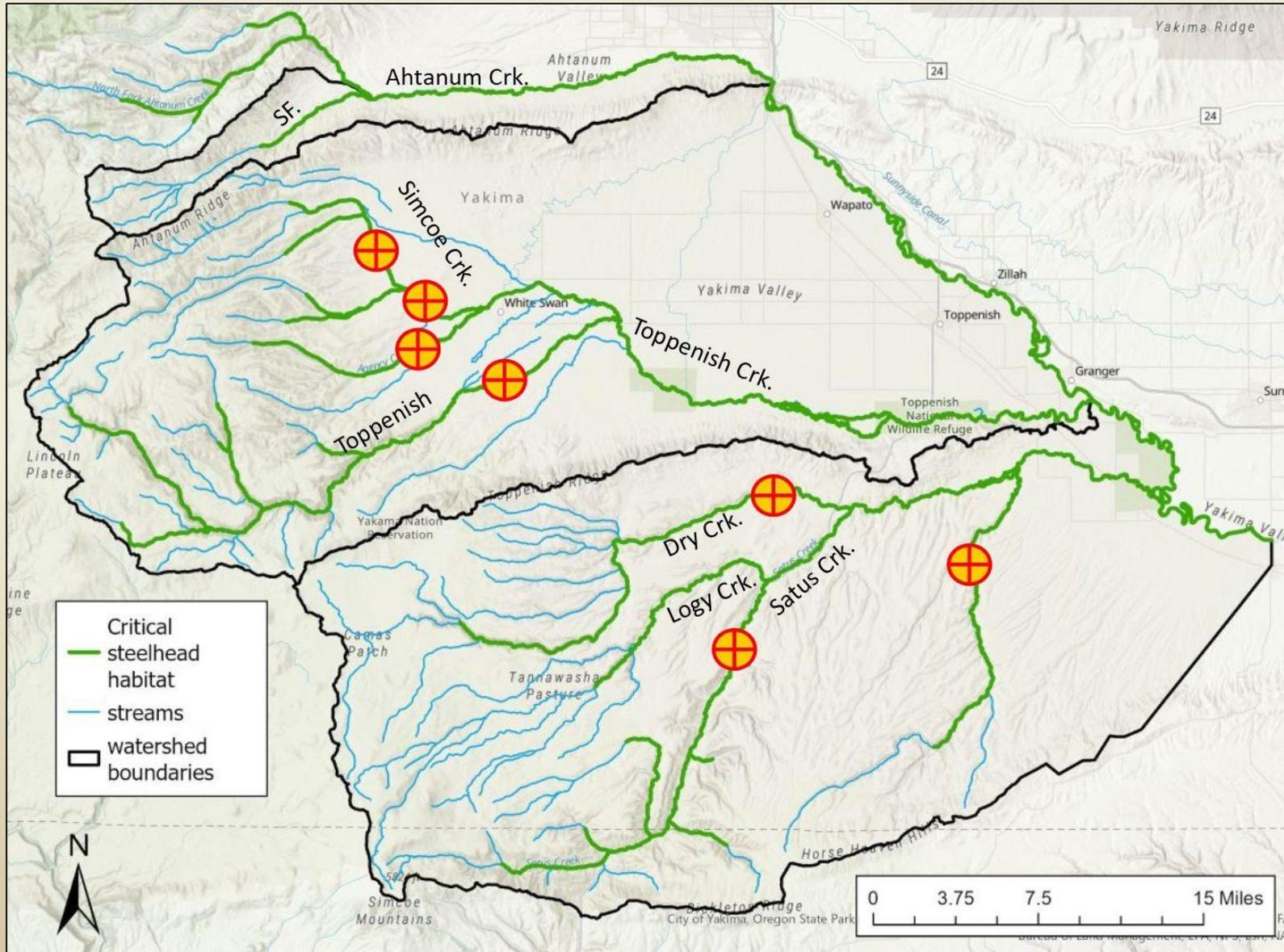
Habitat and Passage Projects

- Wahtum Creek Bridge (2023)
- Lawrence Ditch Screen (2023-24)
- NF Logy and Panther Creek low tech headwaters (2023)
- Meadow fence maintenance and rebuild (5 meadows in 2023)
- Pom Pom Road (2024 pending funding)
- 3-way phase 2 (2024)
- Satus Creek wood phase 1 (2024)
- Yakima River mile 89.5 (2024-25, in coordination with YN Wildlife)
- Snake Creek fish screen (2025)
- Mid-Toppenish passage and floodplain restoration (2025-26, with YN Wildlife)
- Toppenish/Simcoe Project, tbd (2026, TCCEP funded)
- Upper Toppenish wood phase 2 (pending funding)
- Satus Creek riparian assessment (pending funding)
- Ahtanum Creek at Lynch Lane (assessment phase)

Assessment/Monitoring

- Toppenish Simcoe Fan reach assessment and restoration strategy (2023)
- Fish passage assessment over all anadromous reaches in 3 tribes (2023-25)
- Lower Satus Creek Juvenile steelhead movement and survival (2024-2025)
- Groundwater database development (Toppenish Creek Corridor, ongoing)
- Ongoing fish and WQ monitoring work

Challenges-Intermittency



- All of our major steelhead and lamprey streams are naturally intermittent (except Logy and Ahtanum Creeks.)
- Climate change is likely to make this condition more extreme and more frequent.
- Need greater understanding of how this will affect fish population movement, productivity, and survival.
- Evaluate potential for groundwater recharge to ameliorate intermittent reaches.
- Aggressive watershed management and restoration is critical to buffering from CC. Beavers, snow management, distributed recharge...

Other challenges

- **Staff Capacity**
- **Funding**-this has increased but so has cost, and infrastructure projects are in another cost universe. As always, the restoration and management funding needs dwarf available funds.
- Greater **integration of science** and management. In the face of limited resources, need to take the right actions in the right places in the right sequence... Fish biology needs to be fully incorporated, but information is limited and uncertainty is high.

Questions?



Thank you to the Yakama Tribal Council who supports all of our work, Yakama Nation colleagues, YRWP staff, the Yakima Basin habitat restoration community.
And Funders!

PS. Come work with us! We're currently hiring Biologist and Technician positions.