

The Yakama Nation and Upper Kittitas County Groundwater

Phil Rigdon, Deputy Director

Yakama Nation Department of Natural Resources

Walla Walla, WA

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Recent History

- YN, along with others was asked its views on the proposed petition by Aqua Permanente
- YN made 3 points
 - Pumping and consumptively using groundwater captures surface water
 - No surface water is available for appropriation in the fully appropriated Yakima Basin
 - Senior rights Including YN irrigation and instream flow rights are not to be impaired, not even a little
 - Economic development can continue via mitigation through acquisition of senior rights
- We have been working with the other governments and water users on this problem

Yakama Nation Basics

In Treaty of Walla Walla (1855) Yakama Nation

- Ceded 10 million acres to US (1/4 of State of Washington)
- Reserved 1.4 million acre reservation
- Reserved hunting and fishing (and water) rights in Ceded Lands





The First Economy of YN and the Pacific Northwest

Harvesting salmon and other native foods supported the Yakama People and the regional economy for thousands of years. It is still a mainstay of the Yakama culture.

YN is a leader in salmon recovery.

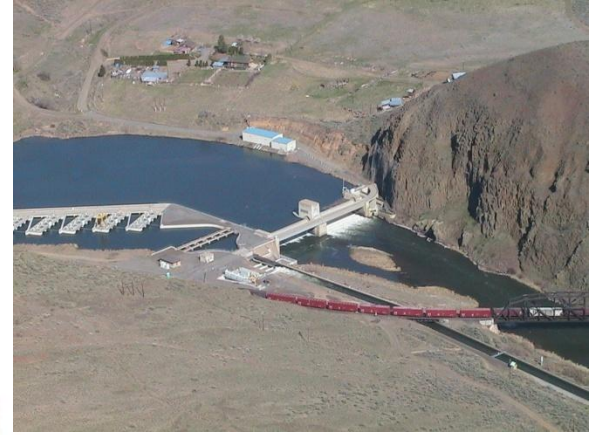
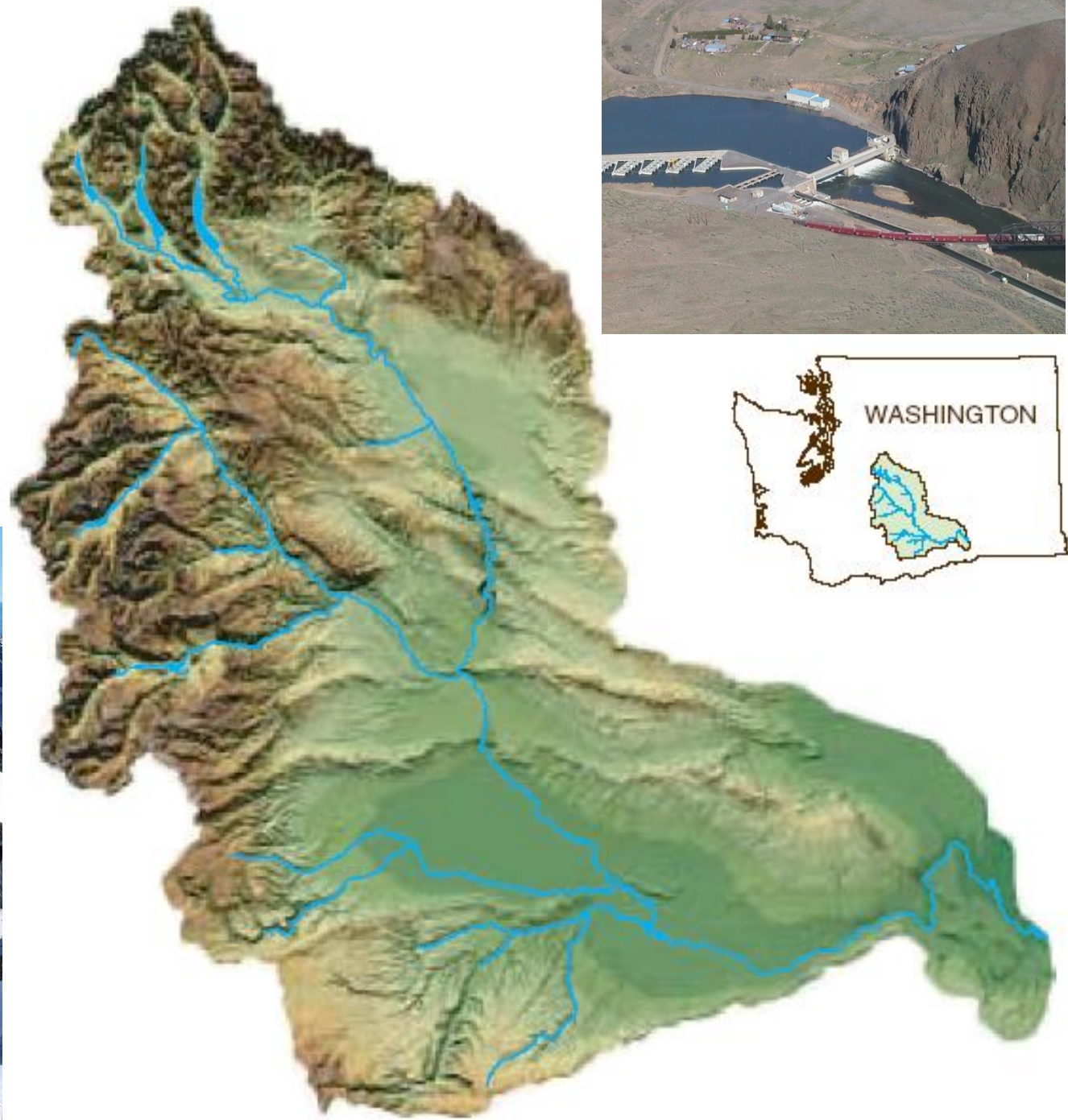


John Osborn Photo

Diversified Yakama Economy

- YN holds the senior adjudicated water rights in the Yakima River basin
 - Time Immemorial priority date
 - Purpose: Maintain fish and other aquatic life
- In addition YN owns and manages
 - Irrigated agricultural enterprise
 - YN holds large irrigation rights
 - YN holds large proratable rights (share shortages proportionally)
 - Drinking water supply program
 - 400k acre producing forest
 - Electric Utility
 - Casino
- YN has large multidisciplinary Natural Resources Department

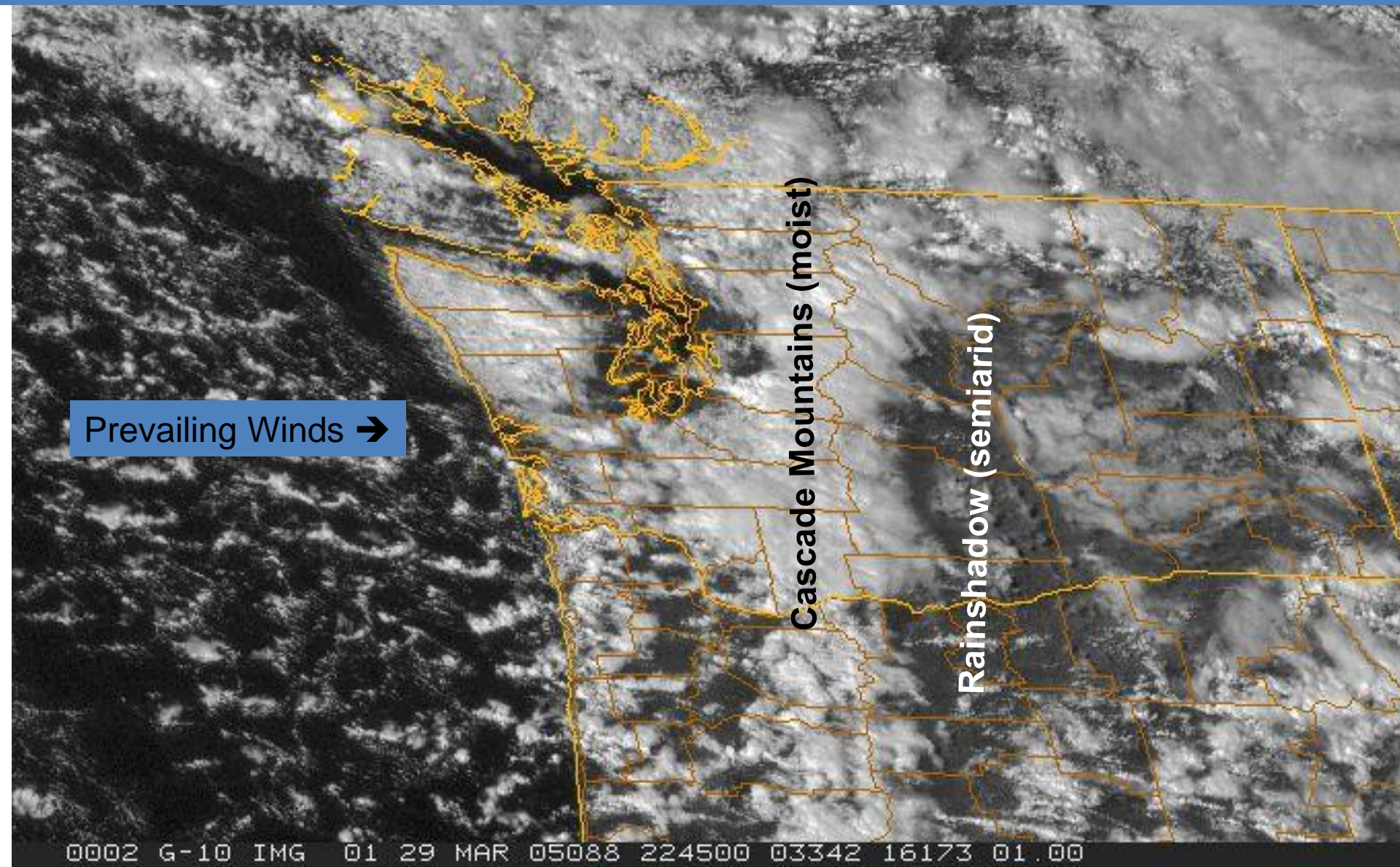
Yakima River Basin



Yakima Basin Basics

- Basin was a major salmon producer pre-development
 - Current runs small fraction of historic
 - Some species e.g. sockeye extirpated by irrigation works
 - YN working hard on rebuilding habitat, access, runs
- Semi-arid except for Cascade Mountains
- Virtually all agriculture is irrigated
- By 1905, demand for irrigation water exceeded runoff in summer
- May 10th, 1905 all unappropriated water withdrawn from appropriation so Reclamation Project could proceed
- Yakima Basin is major agricultural producer
 - About 500,000 acres, >2 million acre feet of irrigation rights
 - About 1 million acre feet of May 10th, 1905 water rights (the proratables)
 - In recent droughts, proratables received <40% of “entitlement”
- Google (no endorsement intended) Interim Operating Plan for the Yakima Project (Reclamation Document) for good description of the Yakima basin

The Yakima Basin lies on the Dry side of the Cascade Mountains:
Snowmelt dominated streams drain the Cascades.
Cascades block flow of moisture from Pacific Ocean.
Streams flow east through semiarid lowlands and discharge to Columbia River.



Point 1

Effects of Groundwater Pumping

- Mass is conserved in the hydrologic cycle
- Groundwater flows from recharge area to discharge area
- If you pump and use groundwater, you have less surface water
- Google (no endorsement intended) for more
 - Capture Committee Report
 - Surface and Groundwater A Single Resource
 - USGS Groundwater Study of Yakima Basin

Source of Water Derived From Wells

From Heath, 1983

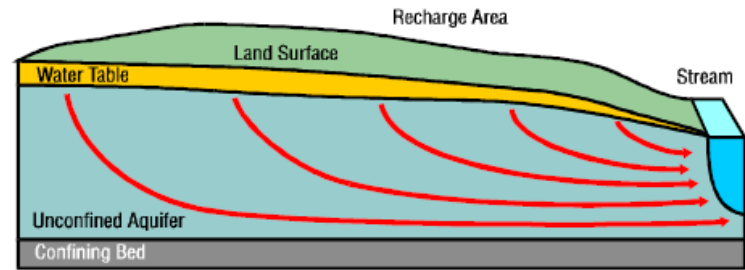
Groundwater pumping captures surface water.

Mass is conserved in the hydrologic cycle.

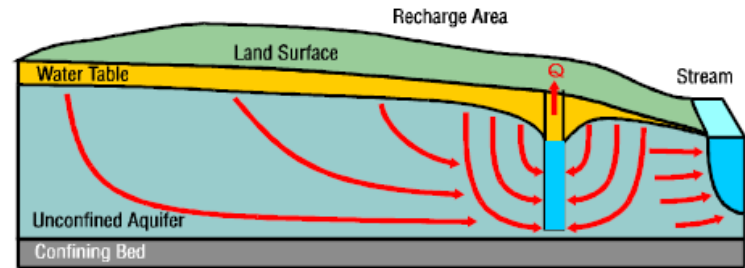
“Productive aquifers” don’t produce water, they transmit it.

“Producing wells” don’t produce water, they remove it

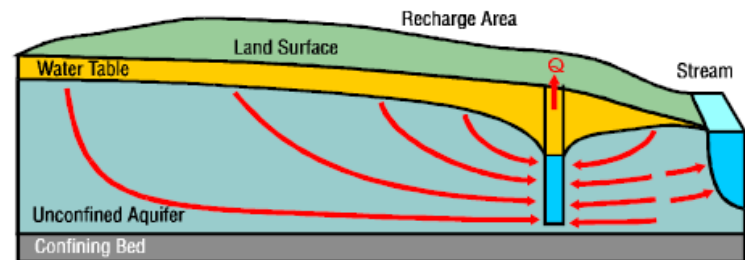
Note: cones of depression
Move faster than water



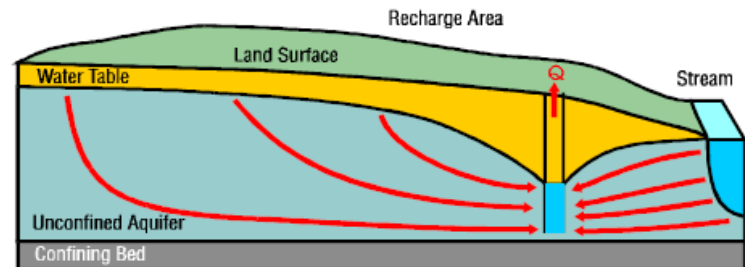
$$\text{Discharge (D)} = \text{Recharge (R)}$$



$$\text{Withdrawal (Q)} = \text{Reduction in storage } (\Delta S)$$



$$\text{Withdrawal (Q)} = \text{Reduction in storage } (\Delta S) + \text{Reduction in Discharge } (\Delta D)$$



$$\text{Withdrawal (Q)} = \text{Reduction in Discharge } (\Delta D) + \text{Increase in recharge } (\Delta R)$$

Point 2

There is no water available in the Yakima Basin

- Yakima Basin was fully appropriated by engineering design
 - In 1905, Reclamation engineers determined reliable, storable water supply and made plans to use it all
- Capturing surface water through wells would
 - Reduce Total Water Supply Available, reducing or placing irrigation rights at risk
 - Reduce flow and habitat for salmon in Yakima R. and tribs
- In 2001 proratable irrigators were receiving <40% of full supply
 - Adjudication court ordered all post 1905 surface water users to stop
 - 1908'ers (Roslyn) shut off because 1905'ers were short
 - If someone uses more, someone else has less
- That's what a fully appropriated basin looks like

Property Right?

- Quoting (more or less) an elected official (not Commissioner Jewell)
 - “A water right is a property right. The Department of Ecology is taking your property rights.”
 - Premise: First half true
 - Conclusion: Wrong! Merely owning property doesn't give you a water
 - If you did not get a water right by appropriation or Treaty, you don't have one

Point 3

Protecting Senior Rights Need Not Stifle Economic Development

- Water can be purchased and transferred (or put in trust) for mitigation
- Process
 - Yakima Basin has a Water Transfer Working Group that evaluates transfers according to established criteria including
 - Neutrality to Total Water Supply Available (the easy part)
 - No adverse change in streamflow (not so easy)
 - WTWG has been conscripted to work on Upper Kittitas problem
 - Many “Water Budget Neutral Determinations” have been approved through this process

Confluence of Tillman Creek and Yak R.

The Tributary problem

Used for rearing by rearing juvenile salmonids

Example of small stream with no water to spare



Hmmm, where could we get mitigation water? (The Kittitas Canal near Tillman Ck.)



- The U.S. owned Kittitas Canal crosses many of the problem tributaries (including Tillman Ck.)
- It carries about triple the peak water use of use of Seattle Public Utilities
- Thus far it is unavailable for mitigation

Help Wanted

Assessment of fish use and habitat potential in Upper Kittitas County Tribes

- Need to determine
 - where any reduction in flow is adverse
 - Possible mitigation



Tillman Creek

Summary

- Development in Kittitas County must respect
 - Senior Rights to
 - Irrigation
 - Instream flow
 - Fundamental principles of hydrologic science
- Mitigation is a qualified success
- More work is needed on
 - evaluating fish use and habitat quality
 - Upper basin hydrogeology
 - Appropriate mitigation
 - Alternative water supply