Watershed Restoration and Climate Resilience in the Context of Natural Resource Management

Watershed Resilience Program

Rachel Benbrook Watershed Resilience Program Lead

About WA DNR

Our mission: *Manage, sustain, and protect the health and productivity of Washington's lands and waters to meet the needs of present and future generations.*

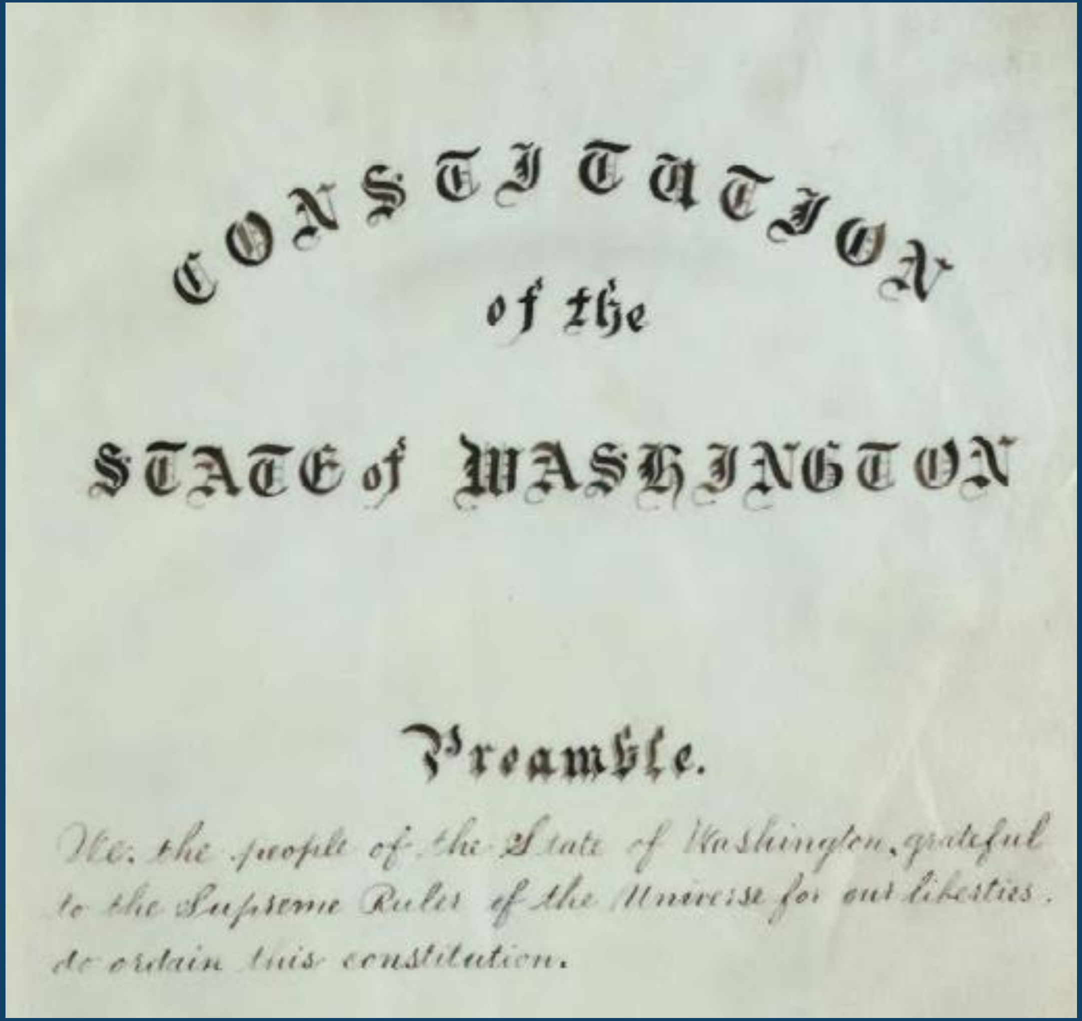
History
At statehood, federal government provided WA with 3 million acres of land to generate revenue for schools and public institutions

Today
DNR manages ~6 million acres of aquatic lands and uplands

Schoolchildren in Monroe, late 1800s. Photo: Monroe Historical Society

DNR’s Trust Mandate

Outlined in the Washington State Constitution Ratified October 1, 1889



- ARTICLE XVI School and Granted Lands: “All the public lands granted to the state are held in trust for all the people…”

- ARTICLE XVII Tide Lands: “The state of Washington asserts its ownership to the beds and shores of all navigable waters in the state up to and including the line of ordinary high tide, in waters where the tide ebbs and flows, and up to and including the line of ordinary high water within the banks of all navigable rivers and lakes…”

Working Within this Trust Mandate

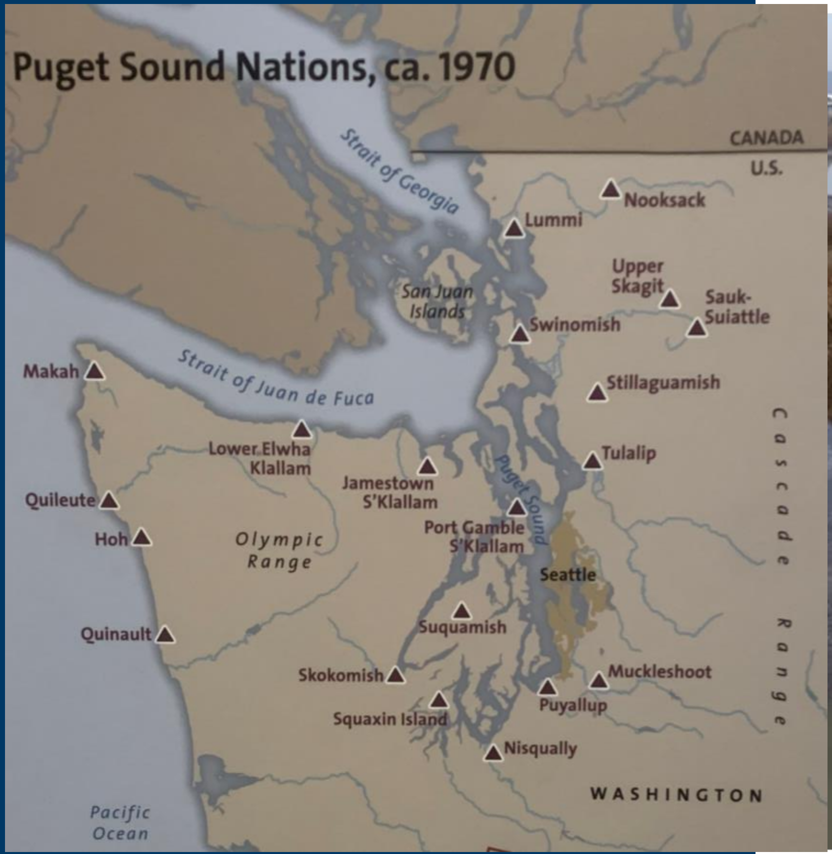
- ~3 million acres of State Trust lands are managed by DNR for the benefit of beneficiaries, including K-12 schools, state universities, county governments, and even the WA state capitol campus
- Includes forested lands, recreation and conservation areas, rangelands, etc.
- Much of how DNR does this is defined in statute, including mandate to generate revenue

Washington's Legislature serves as the trustee

DNR manages trust assets on behalf of trustee

Revenue generated for beneficiaries of trust

Tribal Lands, Tribal Leaders



Map from the National Museum of the American Indian, photo R Benbrook

Puget Sound salmon habitat restored with tribes leading the way

Oct. 12, 2022 at 6:00 am | *Updated Oct. 12, 2022 at 4:09 pm*

1 of 4 | Excavators work on breaching the final dike in the Blue Heron Slough restoration project in Everett on Oct. 3. A levee separates Steamboat Slough, on the right, with farmland that's being dug out at low tide. (Karen Ducey / The Seattle Times)

The Seattle Times

Stevens Treaties: 1854-1856

Photo: Wikipedia

"The right of taking fish, at **all usual and accustomed grounds** and stations, is further secured to said Indians **in common with** the citizens of the territory…together with the privilege of hunting, gathering roots and berries, and pasturing their horses on **open and unclaimed lands.**"

(emphasis added)

◀ Fish Wars Documentary

Indian Country 101 Training ▶

Washington is Salmon Country

DNR’s Role in Salmon Recovery: Forests

- ~2.2 million acres timber lands
  - Regional State Lands teams oversee access and land use agreements
- Forest Regulation
  - Administers Forest Practices Board rules to protect public safety, water quality, and fish and wildlife habitat
  - Small forest landowner office
- Forest Resilience
  - Works across all lands to monitor, manage, and protect the health of WA forests
  - Urban and Community Forestry
  - Good Neighbor Authority with USFS
- Wildland Firefighting, Post-Fire Recovery

DNR’s Role in Salmon Recovery: Aquatic Resources

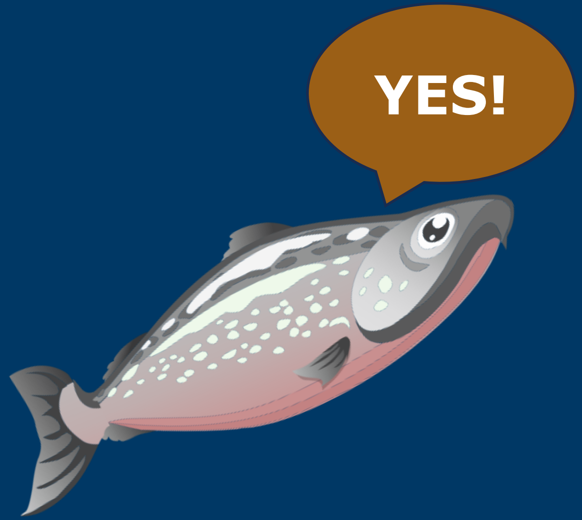
- ~2.7 million acres of state-owned aquatic lands are not trust lands, but constraints still exist
- Aquatic lands leases and right of entry authorizations (real estate agreements NOT permits!)
- Science and monitoring
  - Ocean acidification
  - Kelp and eelgrass, geoduck
  - Pre/post project monitoring
- Aquatic Restoration Program
  - Marine and nearshore focus
  - Piling removal, derelict structures, etc.
- Watershed Resilience Program

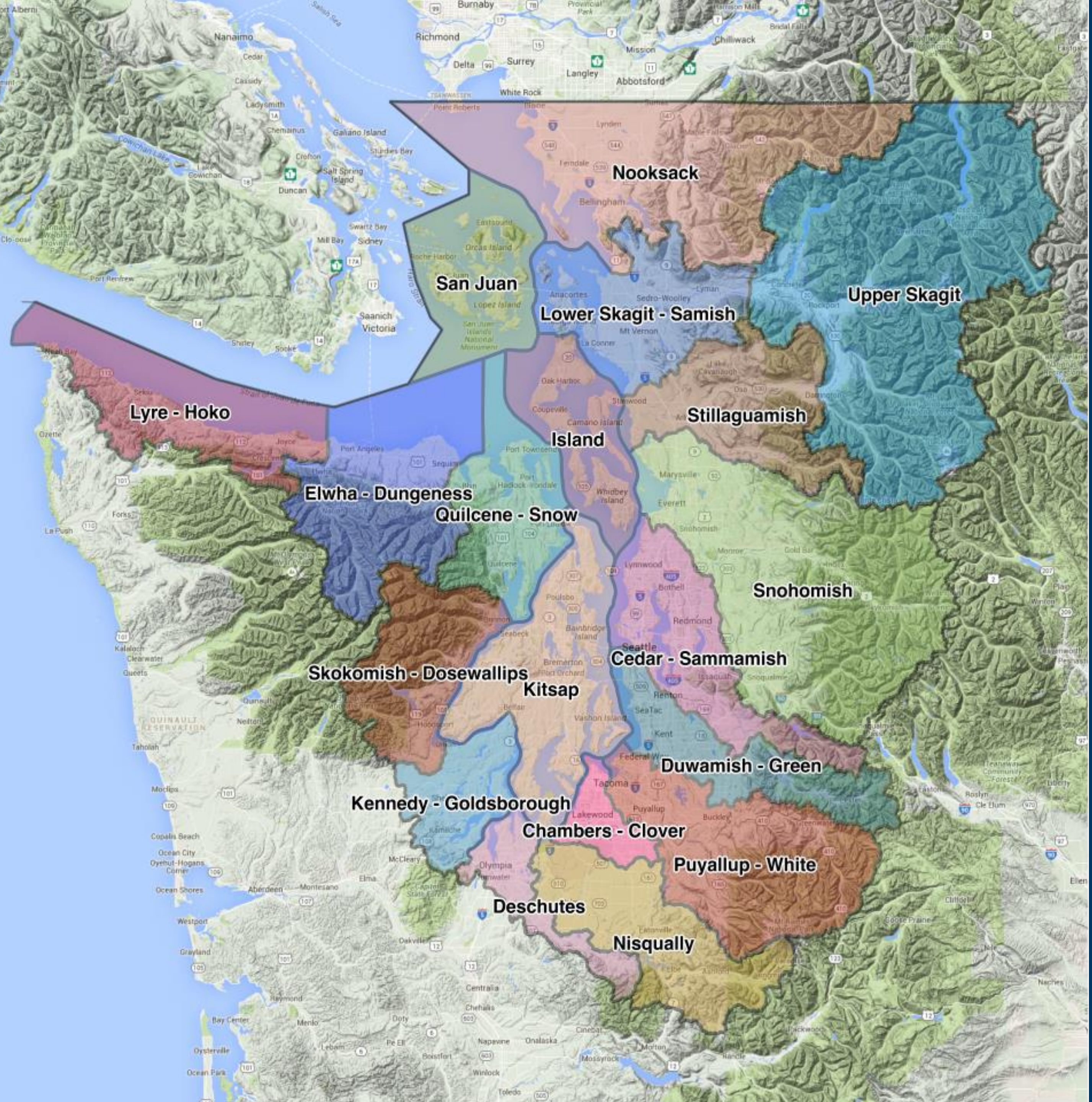
“Despite decades of focus and nearly $1 billion invested in recovery efforts, the sad reality is our salmon are dying…

The Department of Natural Resources is one among many in the network of watershed resilience and salmon recovery partners. **No one entity can do it all – but each of us must do all that we can**.”

Hillary Franz, Commissioner of Public Lands

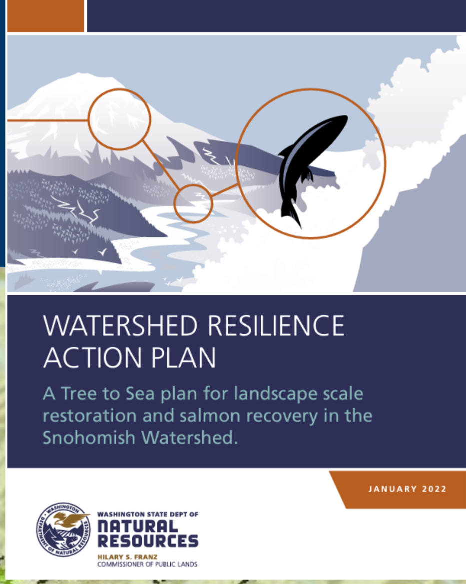
Should DNR do more?





Watershed-Scale Salmon Recovery Planning

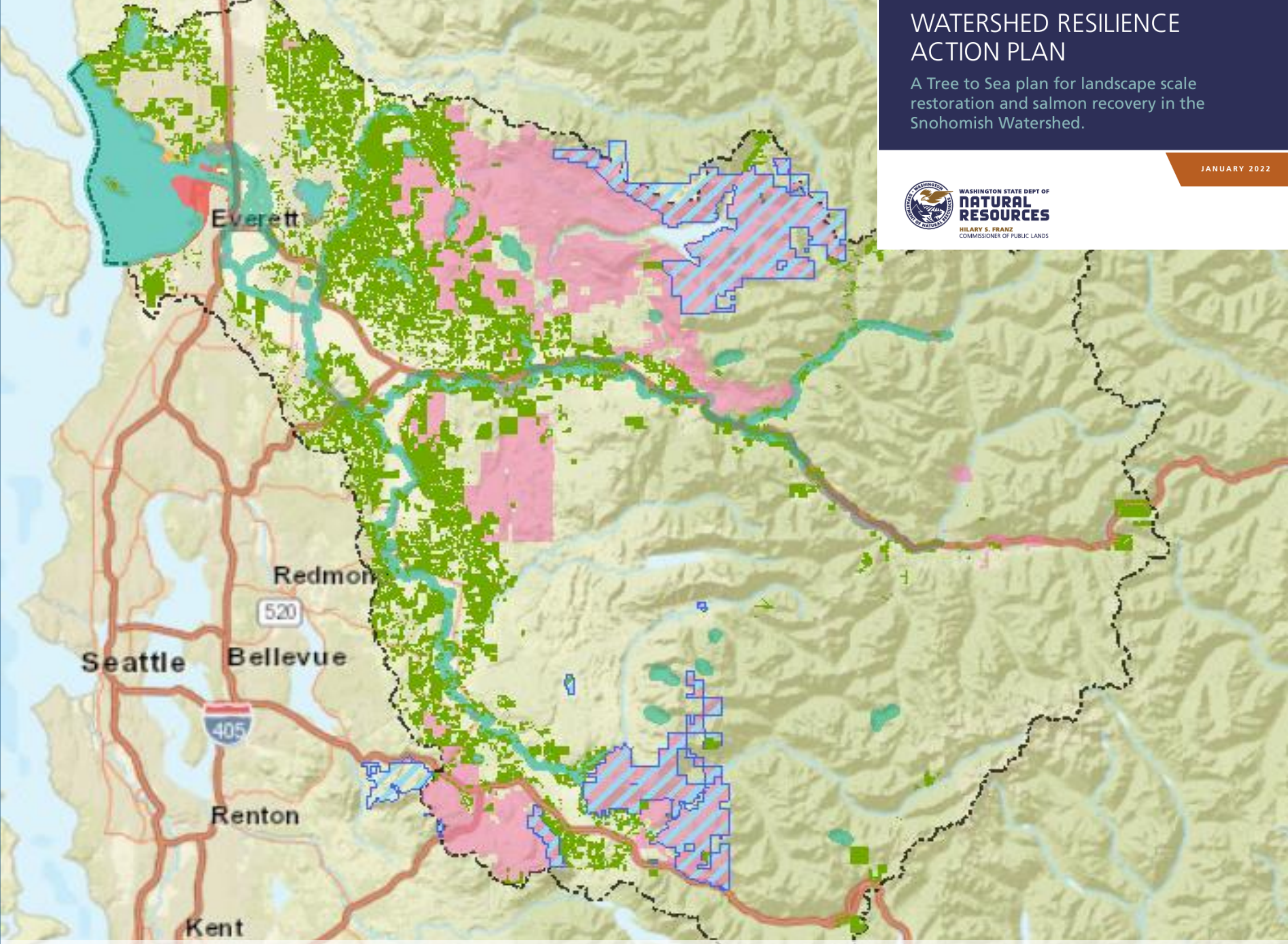
2022: Pilot Snohomish Watershed Resilience Action Plan (WRAP) Launched



Why the Snohomish?

- Large watershed, significant DNR lands
- Home to nine salmonids
- Produces 25-50% of Puget Sound coho
- Chinook at 5% and Steelhead at 7% of recovery goals
- Collaborative and successful salmon recovery community

dnr.wa.gov/wrap



Teal = Aquatic Lands Pink = Trust Lands BluePink = Conservation Areas
Dark Green = Small Forest Landowners

Five Goals

GOAL 1: Protect and clean up aquatic habitat

GOAL 2: Restore, conserve and connect forests and riparian habitat.

GOAL 3: Revitalize urban forests and streams.

GOAL 4: Engage and invest in communities

GOAL 5: Reduce and combat climate impacts

Measurable Outcomes

Key Takeaway #1: Watershed Scale, But Also Place-Based

Source: Creative Commons

- Working at the (big) watershed scale is hard!
- Apply the more familiar place-based lens to reduce complexity
  - Then zoom out and think about projects holistically (i.e. beads on a string)
- Boils down to the basics
  - Investing in relationship building
  - Showing up at the table
  - Engaging stakeholders

Watershed-Scale Engagement: Snohomish Example

Tulalip Tribes

Snoqualmie Tribe

King County

Snohomish County

Beavers Northwest

Sound Salmon Solutions

Snohomish Conservation District

Snoqualmie ~ Watershed Forum

Snohomish Basin Salmon Recovery Forum

Mountains to Sound Greenway

Washington Department of Fish & Wildlife

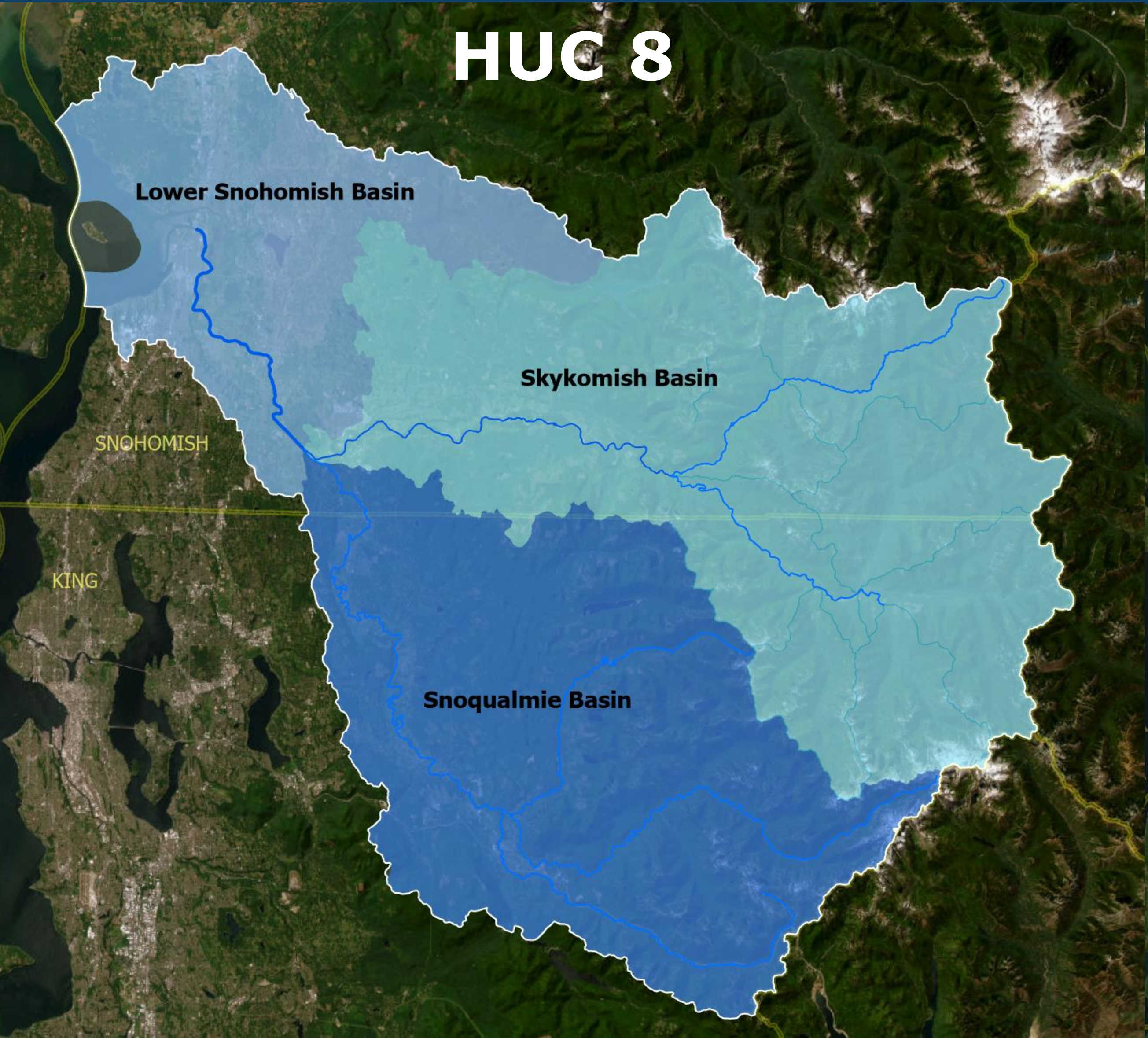
Wild Fish Conservancy Northwest

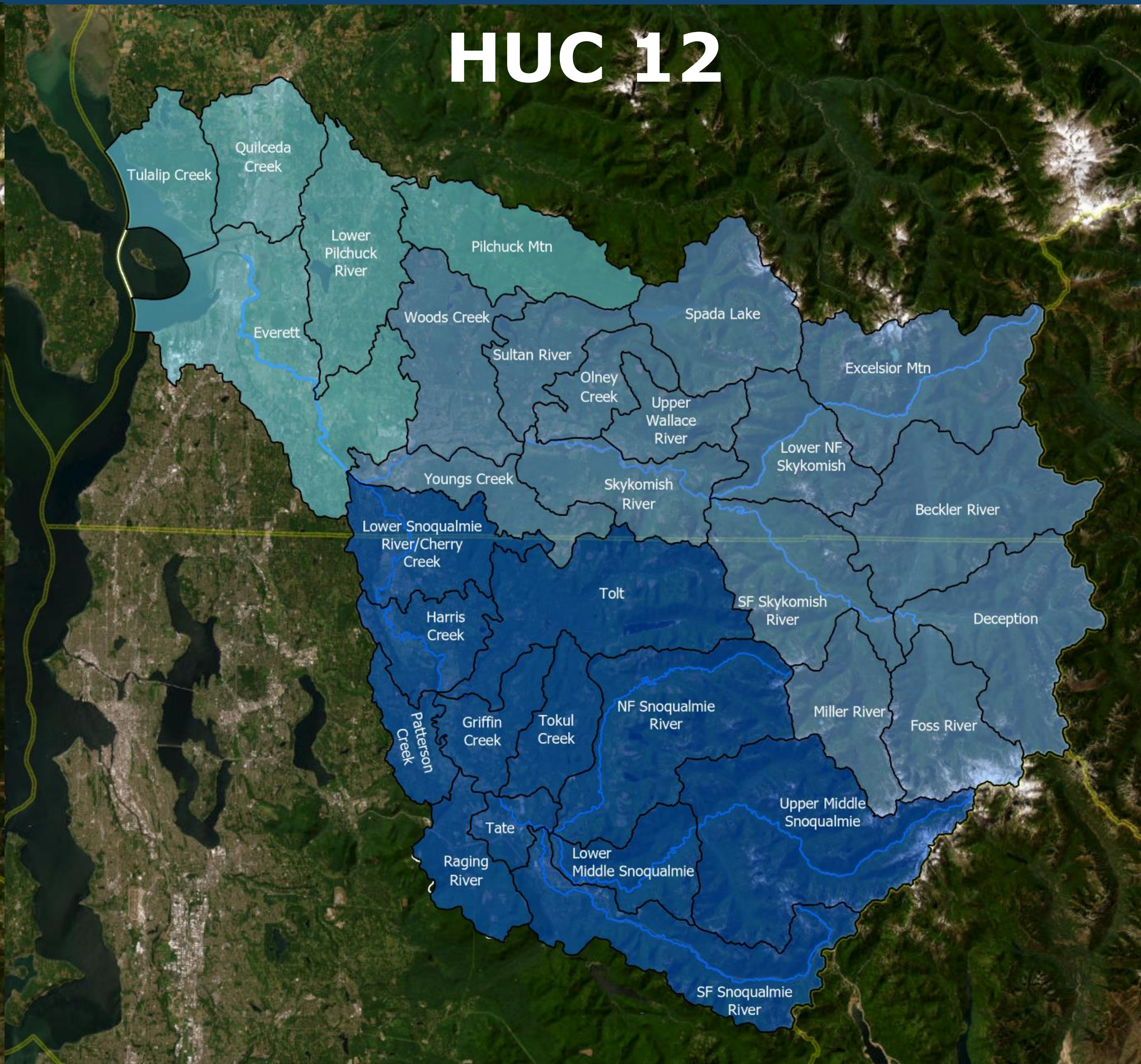
Key Takeaway #2: Think Like a Watershed

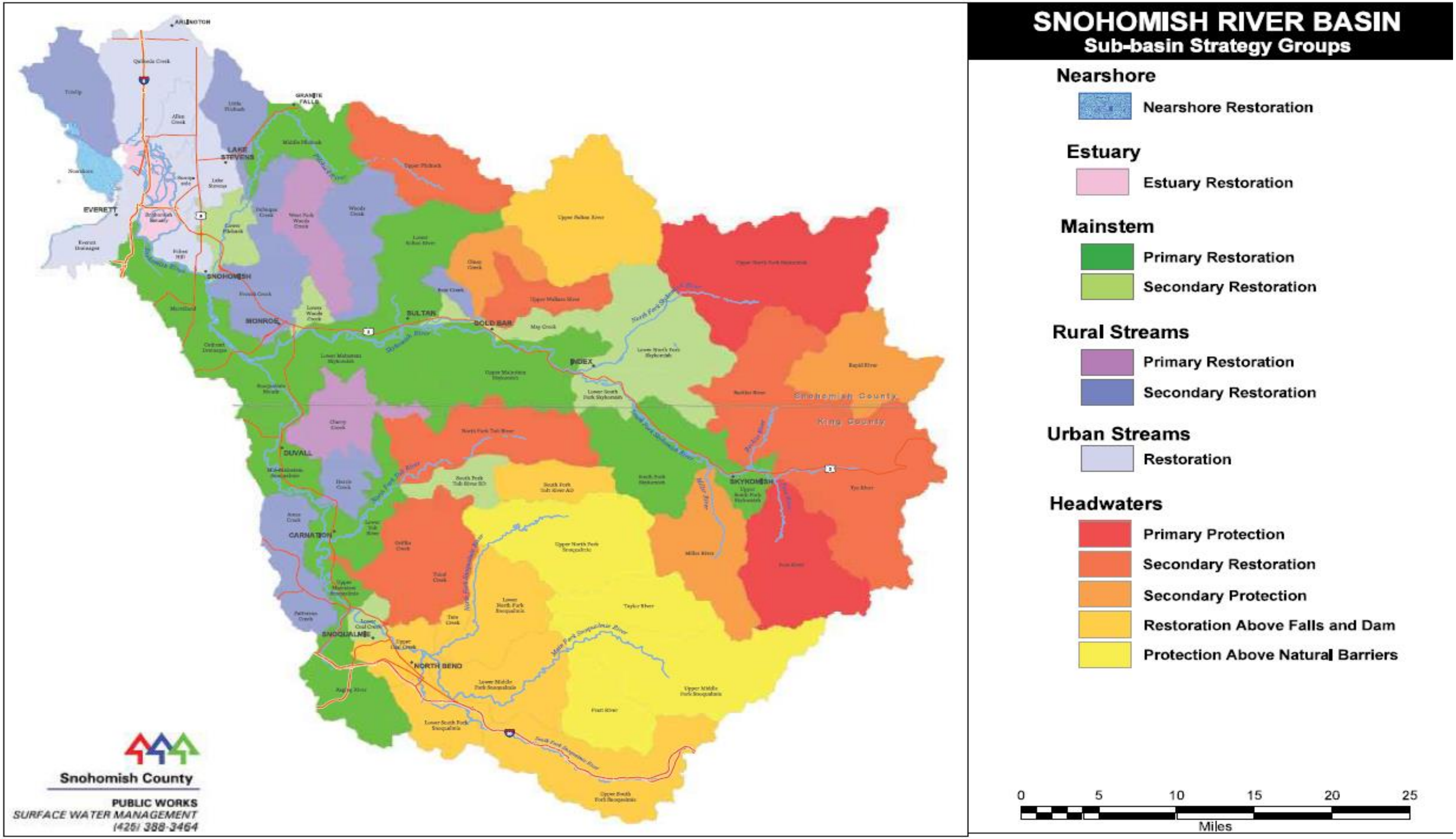
Source: Creative Commons

- Group into headwaters, tributary, and mainstem systems
- Apply a subbasin scale
  - Hydrologic Unit Code (HUC) 8 or 12
  - Interface with the right stakeholders in the right places
- Water flows downhill!
  - Take the easiest path, replicate and amplify what has worked elsewhere
  - Leverage existing knowledge and resources, i.e. salmon recovery lead entities in WA state, regional and local resilience plans

Snohomish Watershed

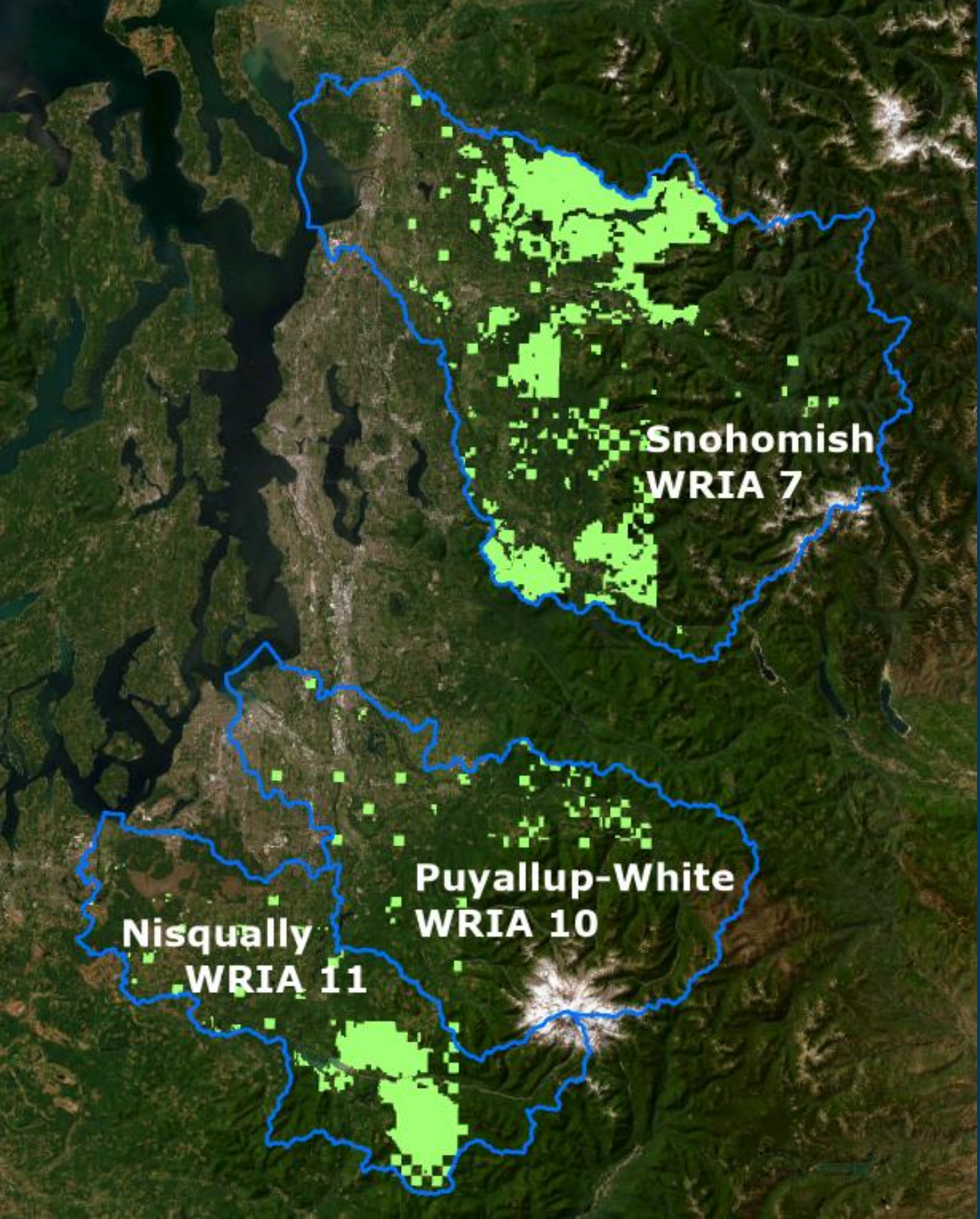





SNOHOMISH RIVER BASIN
Sub-basin Strategy Groups
Nearshore
Nearshore Restoration
Estuary
Estuary Restoration
Mainstem
Primary Restoration
Secondary Restoration
Rural Streams
Primary Restoration
Secondary Restoration
Urban Streams
Restoration
Headwaters
Primary Protection
Secondary Restoration
Secondary Protection
Restoration Above Falls and Dam
Protection Above Natural Barriers
0 5 10 15 20 25
Miles
ARLINGTON
GRANITE FALLS
LAKE STEVENS
EVERETT
SNOHOMISH
MONROE
SULTAN
GOLD BAR
INDEX
DUVALL
CARNATION
SNOQUALMIE
NORTH BEND
SKYKOMISH
Snohomish County
King County
Snohomish County
PUBLIC WORKS
SURFACE WATER MANAGEMENT
(425) 388-3464

WATERSHED RESILIENCE PROGRAM

A Tree to Sea approach for landscape scale restoration and salmon recovery in Puget Sound watersheds.



Current Watersheds

- **Snohomish,** Pilot Watershed
- **Puyallup and Nisqually,** Expansion Watersheds added in 23-25 biennium

No longer a pilot!

Late 2023: The Watershed Resilience Program is created to represent this regional effort.

WRIA = Watershed Resource Inventory Area, WA statewide classification system

Programmatic Structure

Moved to Aquatics Division in June 2024, housed in Science and Puget Sound Recovery Team

Watershed Resilience Program (WRP)

Snohomish Watershed Resilience Action Plan (WRAP)

Large Wood Supply Initiative (LWSI)

Forest Landowner Fish Passage Initiative (FloFish)

Watershed Expansion

Puyallup Watershed

Nisqually Watershed

Plus…identify, plan, and implement restoration and resilience projects on DNR-managed lands

Our Purpose

- In-house salmon and watershed expertise, go-to point of contact for externals
- Build agency capacity for restoration and resilience
- Leverage local/state/federal funding
- Support work of partners on the ground
- Inspire cross-programmatic and inter/intra-agency collaboration
- Identify and address barriers to all the above

And, most of all…
…Accelerate the pace of progress!

Photo: *Seattle Times*

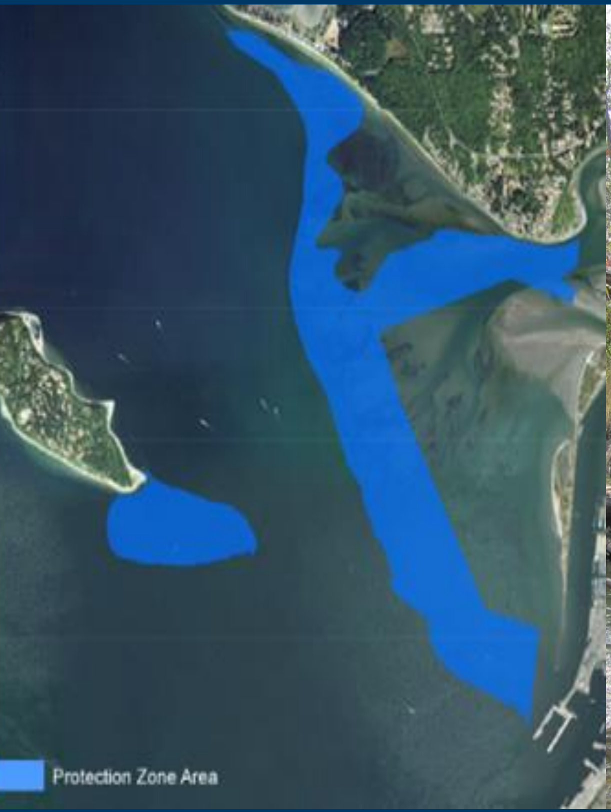
Key Takeaway #3: Sometimes Thinking Big is Better

- Some issues demand the watershed scale
  - Water quality and quantity
  - Strategic rather than opportunistic invasive control (knotweed!)
  - Landscape connectivity
  - Fish passage
- Climate resilience
  - Refugia
  - Beaver related restoration (see Dittbrenner et al., 2022)

Three “Buckets” of Work

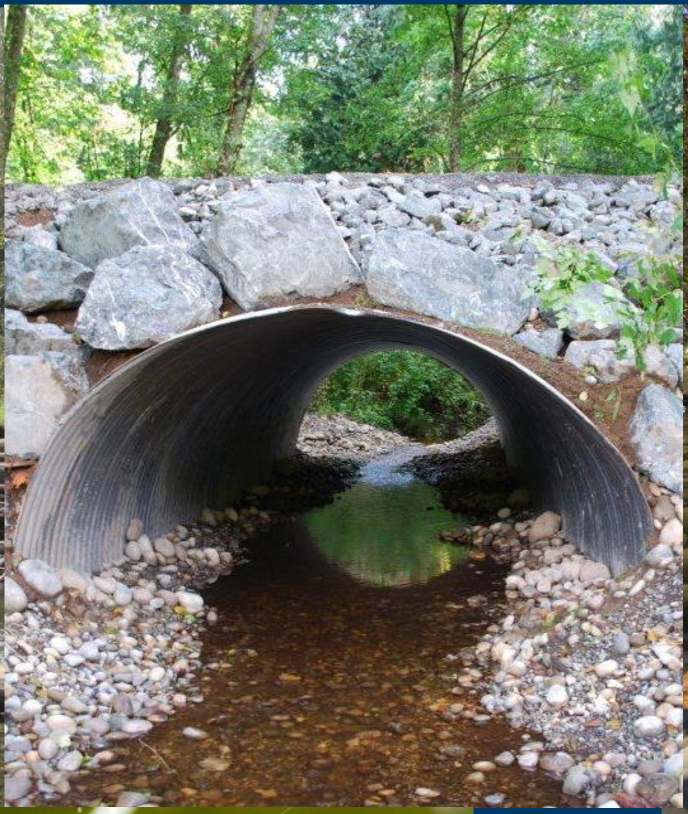
Incubate pilot projects at the subbasin/watershed scale, then amplify to watershed/landscape-scale once you work out kinks

Snohomish Kelp and Eelgrass Protection Zone



Large Wood Supply Initiative (LWSI)

Forest Landowner Fish Passage Initiative (FloFish)



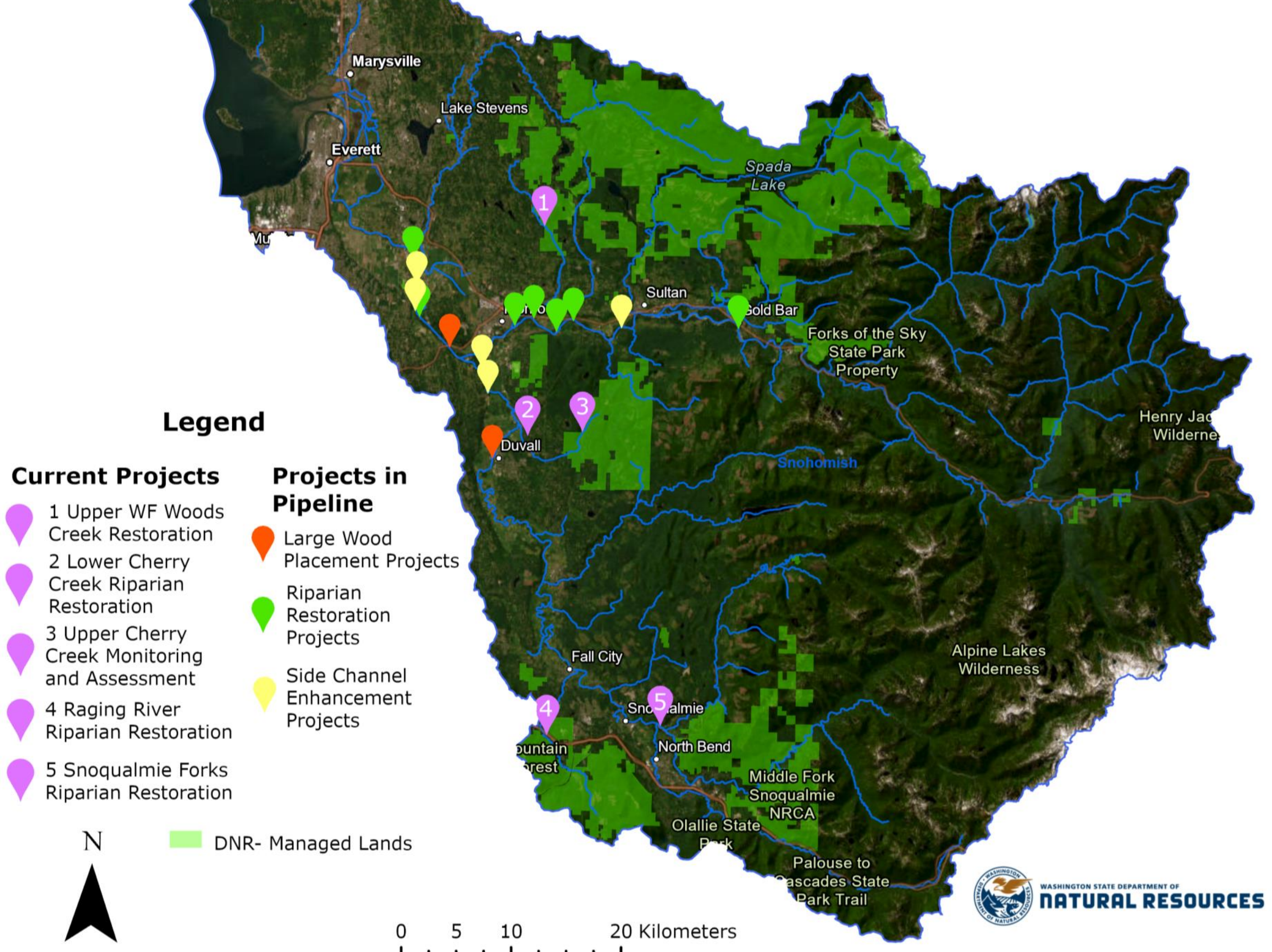
Watershed Expansion

AND…. Beaver Restoration

Key Takeaway #4: Get Those Boots on the Ground

- See it for yourself in order to truly know what is needed
- Desktop exercises can help zero in on potentially important reaches and prioritize where to go
- Invest in relationships with land managers to ensure access for on-the-ground site visits
- Goal = Build a pipeline of projects

Snohomish Watershed



WRP Projects

Challenges

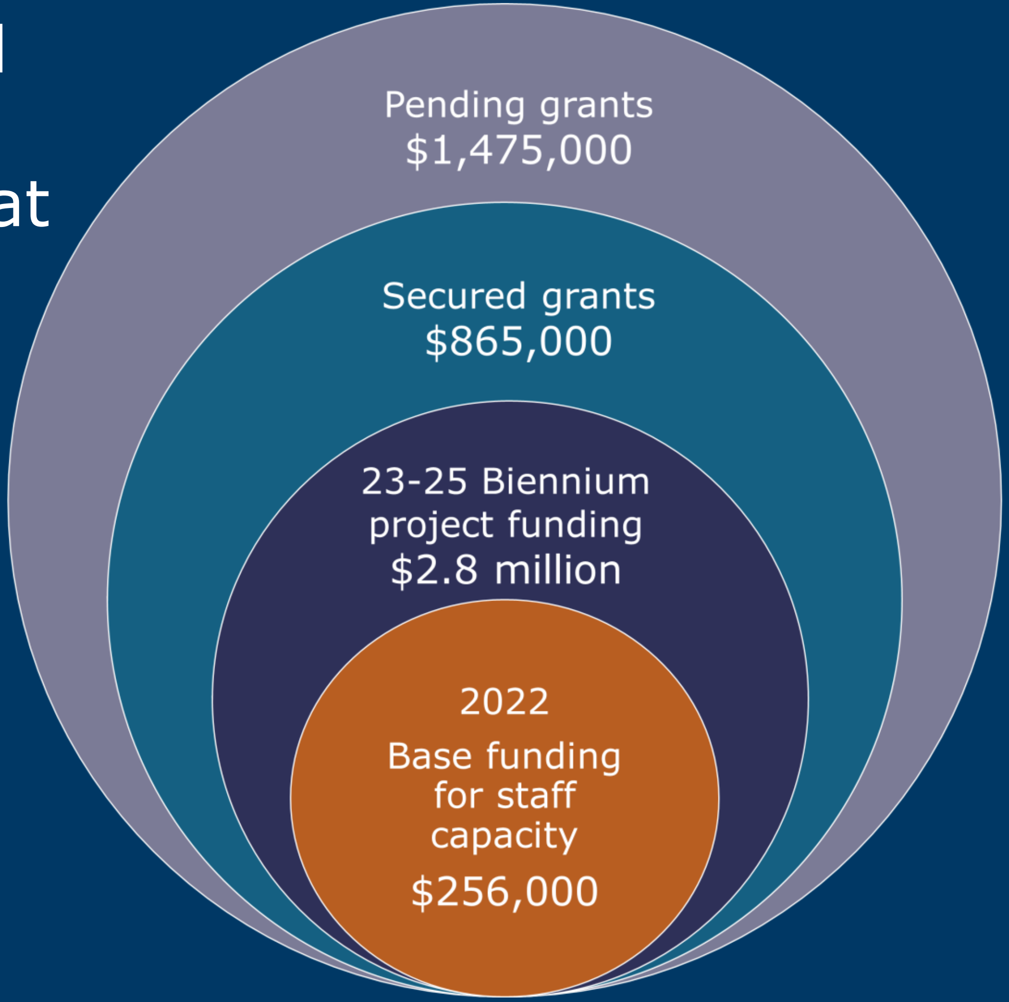
- Multi-use lands = conflicting priorities
- Scale of solutions must meet scale of problems
- Capacity limitations
- DNR lands often remote with a lack of access
- Behind the curve in freshwater system habitat assessment, project prioritization and planning

Opportunities

- Huge potential for large-scale projects
- Promoting access to restoration resources
- Chance to fill data gaps
- Workforce and project development
  - Room to grow and build DNR capacity
- Bridging the gap between watershed planning and on-the-ground implementation

Early Successes

- Figuring out how to work at the watershed scale
- Leveraging all the great work at DNR and partners
- Relationship and capacity building
- Funding - In just 2 years, secured local, state and federal grants with more in the pipeline
- Building support with legislators
- All this = Momentum!



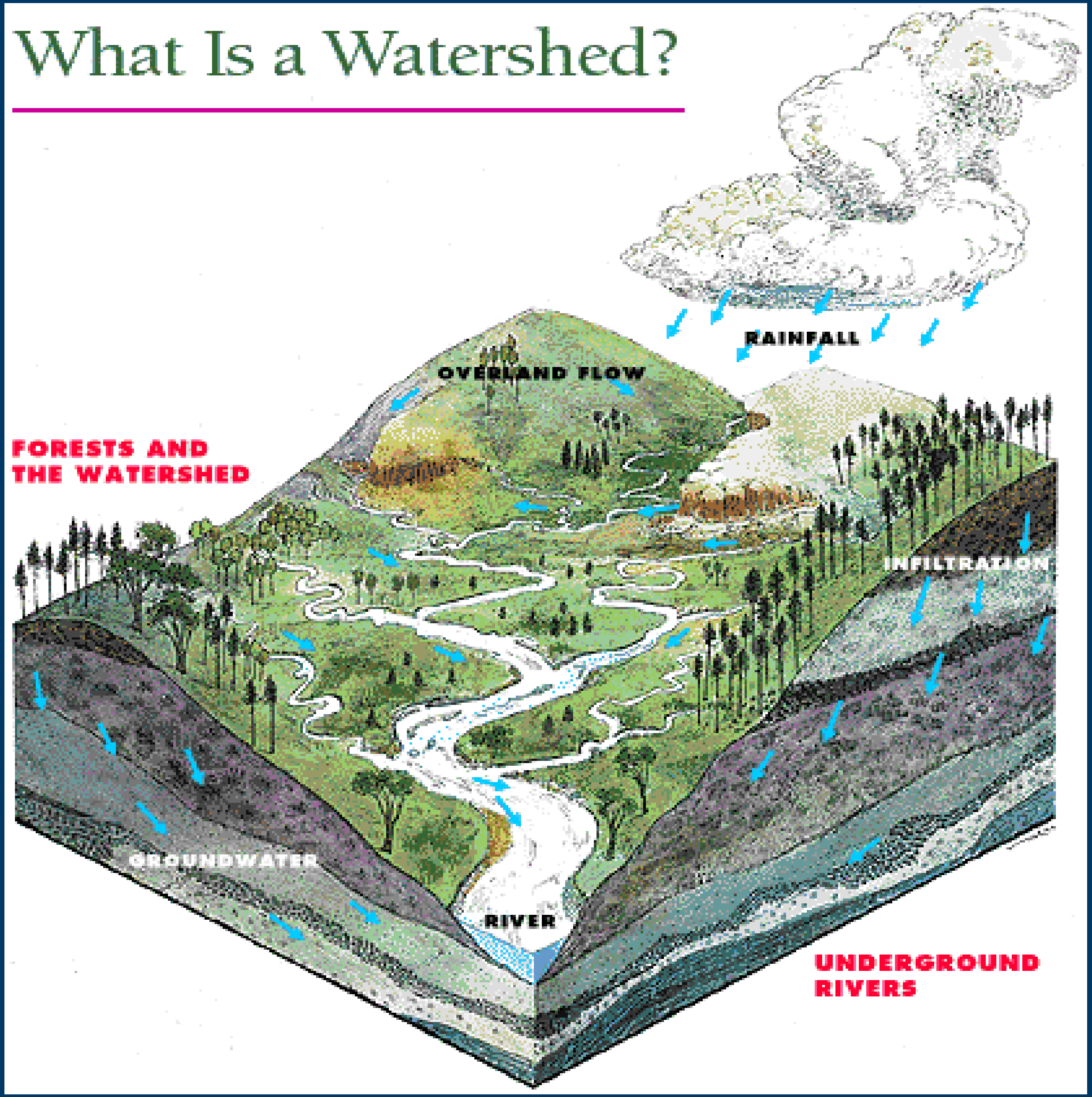
wa·ter·shed

noun

1.an area or ridge of land that separates waters flowing to different rivers, basins, or seas.

2. an event or period marking a turning point in a course of action or state of affairs.

Such as "the publication of Darwin's *Origin of Species* was a watershed moment in evolutionary biology"



Watershed map .gif repurposed from Rockingham County, NC

THANK YOU!

Rachel Benbrook
Watershed Resilience Program Lead
rachel.benbrook@dnr.wa.gov

www.dnr.gov/WatershedResilience