



Meeting Handouts

January 19, 2021

Updates from the Chair:

- WDFW meeting with Blue Forest Conservation, Jan. 7, 2021

Proviso Strategy:

- Habitat Utilization for Proviso Species Presentation
- Commonality in Fish Passage Project Evaluation Criteria



**FOREST
RESILIENCE
BOND**

Introduction to the Forest Resilience Bond

WDFW Fish Passage

January 2021

BLUE  FOREST
CONSERVATION

Goals of the Forest Resilience Bond



Collaboration



Accelerate and scale



Upfront capital

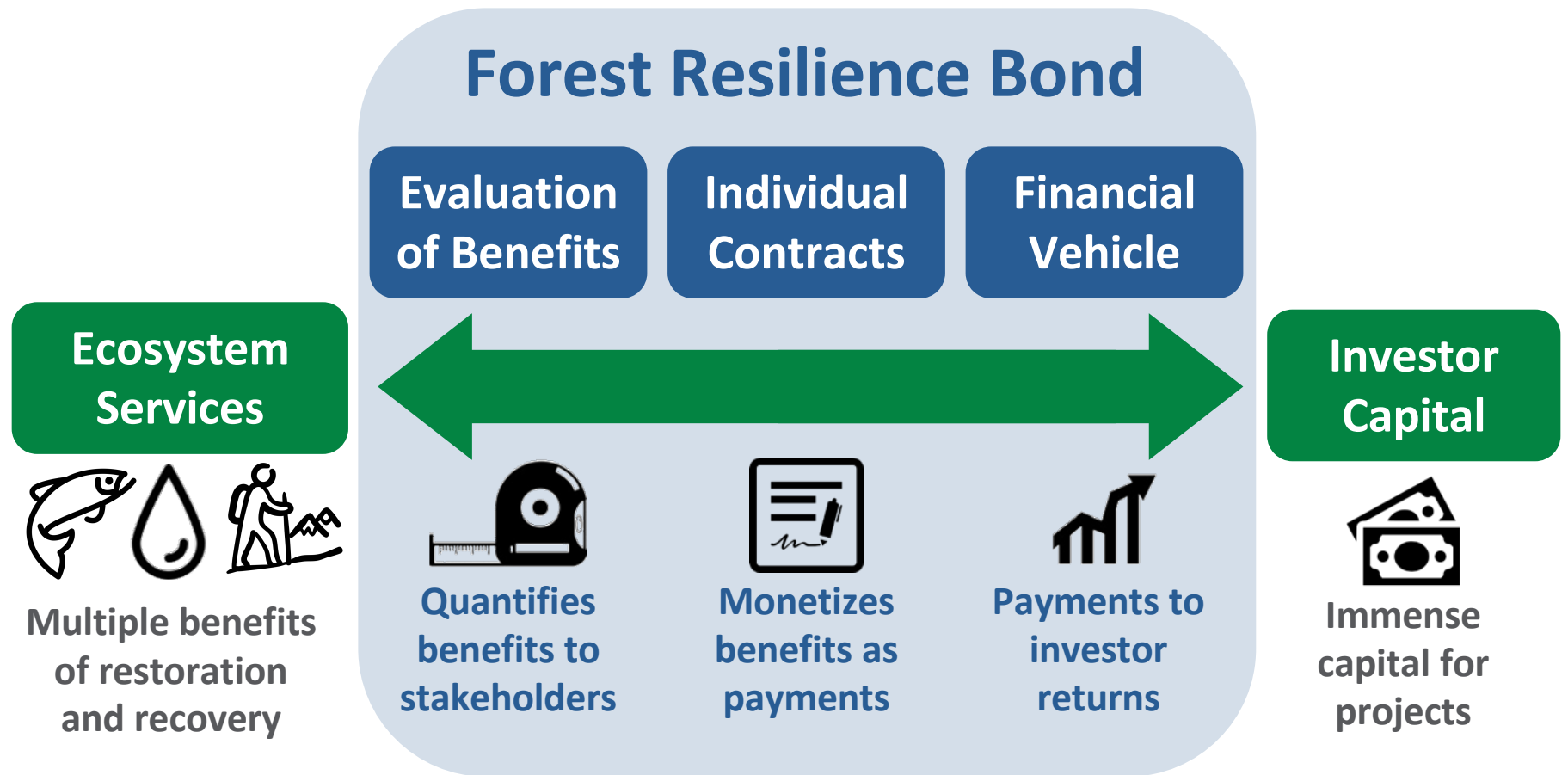


Restoration economy

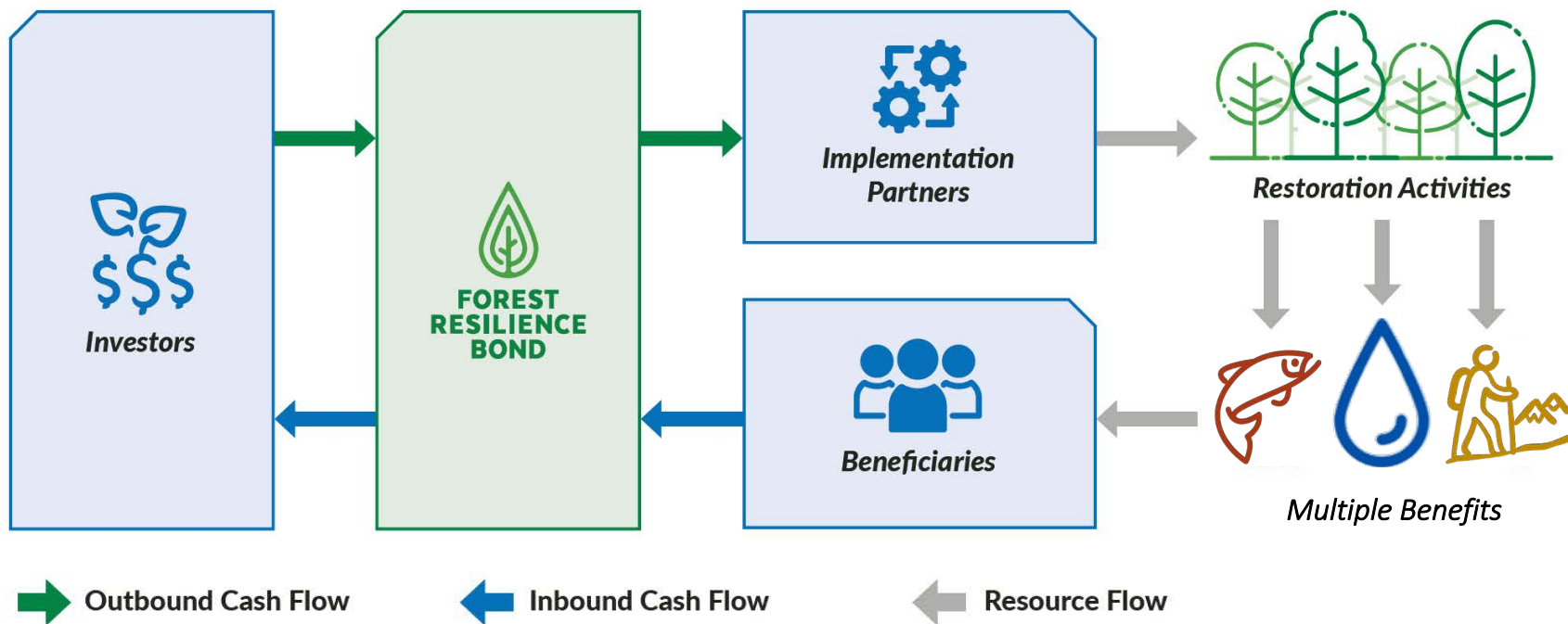


Multi-benefit projects

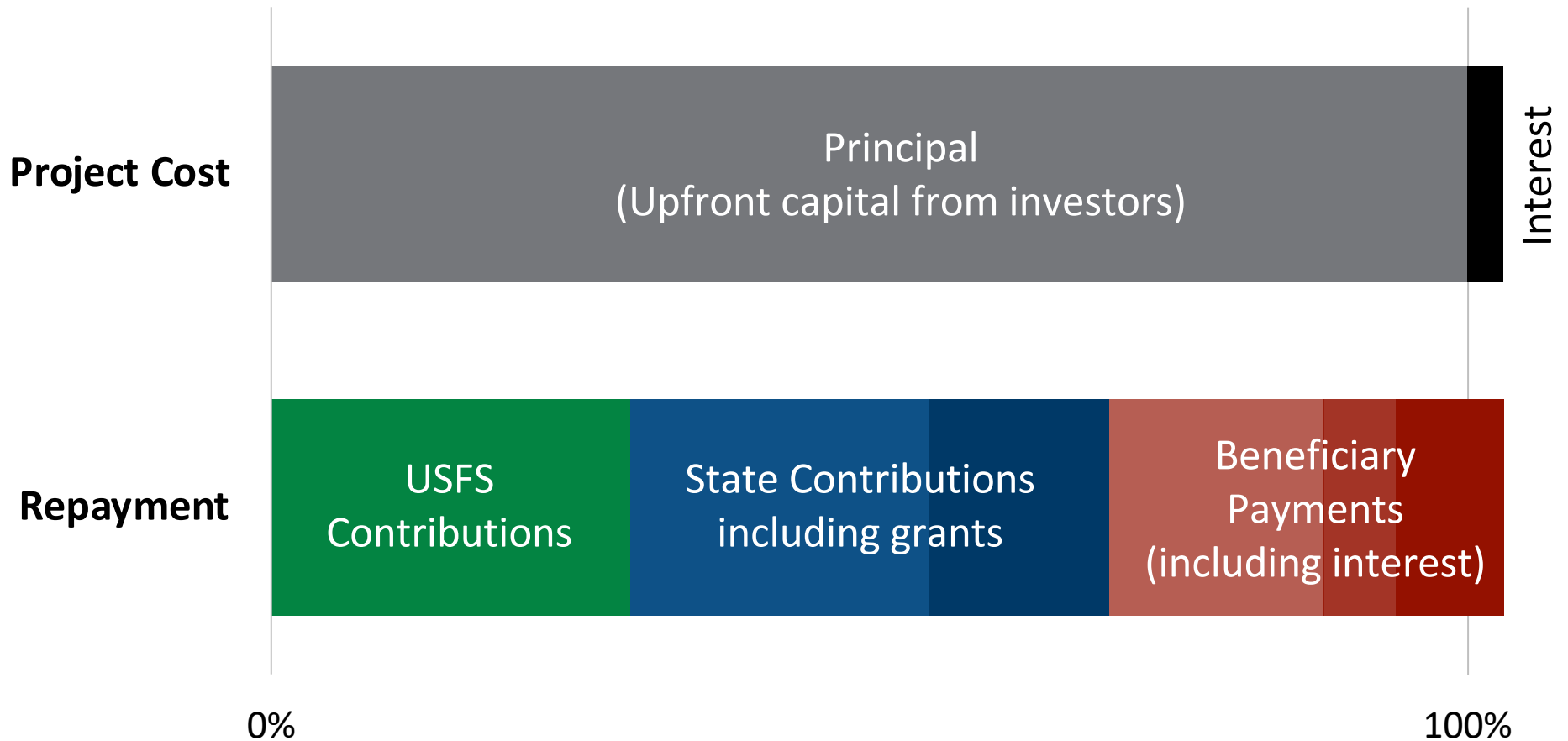
Connecting Investor Capital to Conservation



How the Forest Resilience Bond Works

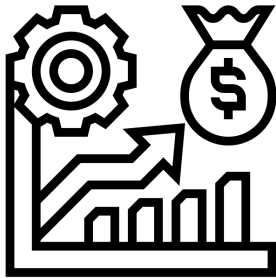


Example Sources of Repayment



An economic analysis to make the business case

Revenue enhancement



- Increased water supply, hydropower
- Tax revenue from recreation-based tourism

Cost avoidance or risk mitigation



- Sediment build up in a reservoir
- Delay in developing new water sources
- Decreased risk of severe wildfire

Regulatory efficiencies

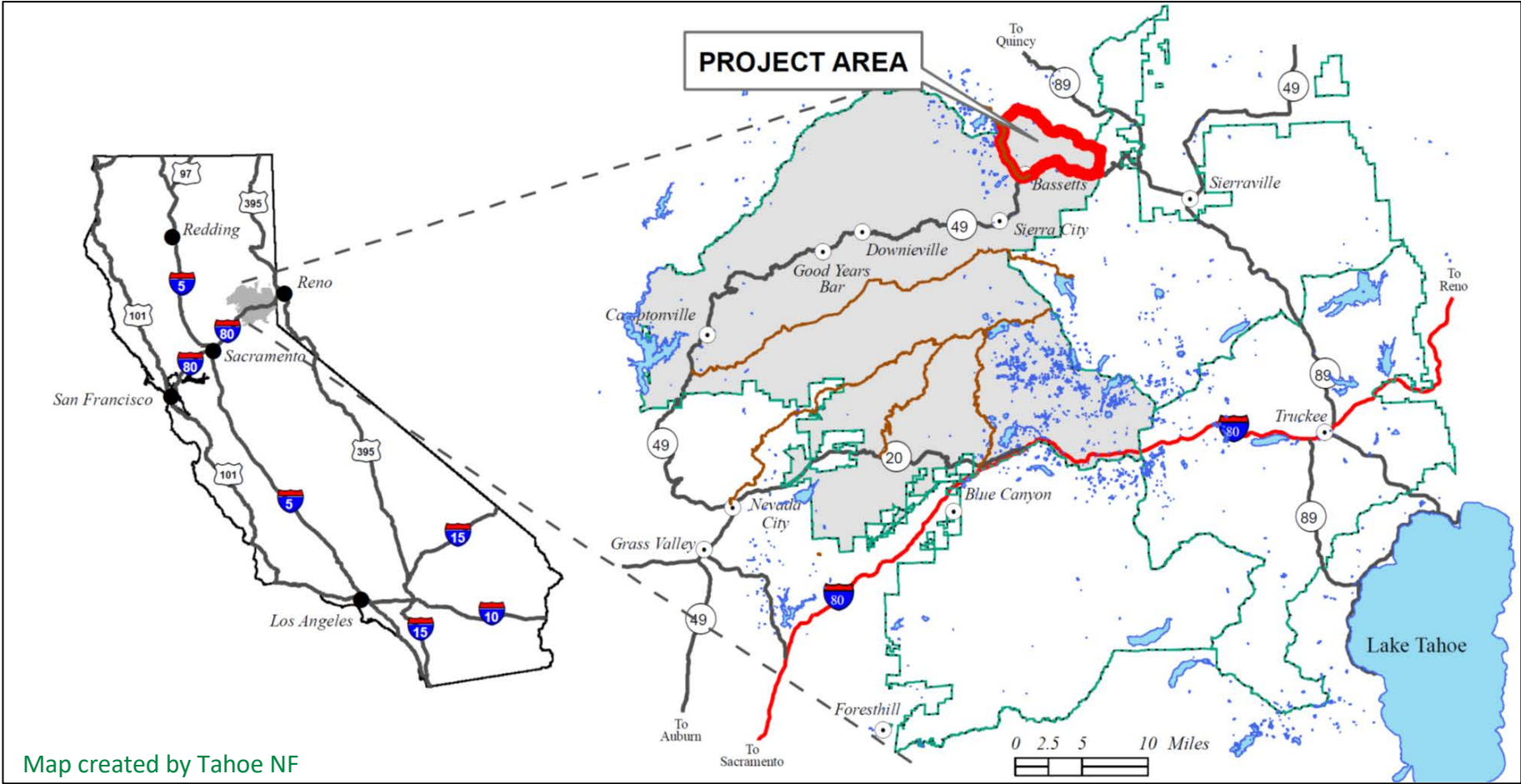


- Aquatic habitat obligations
- NPDES permit limits
- Environmental markets

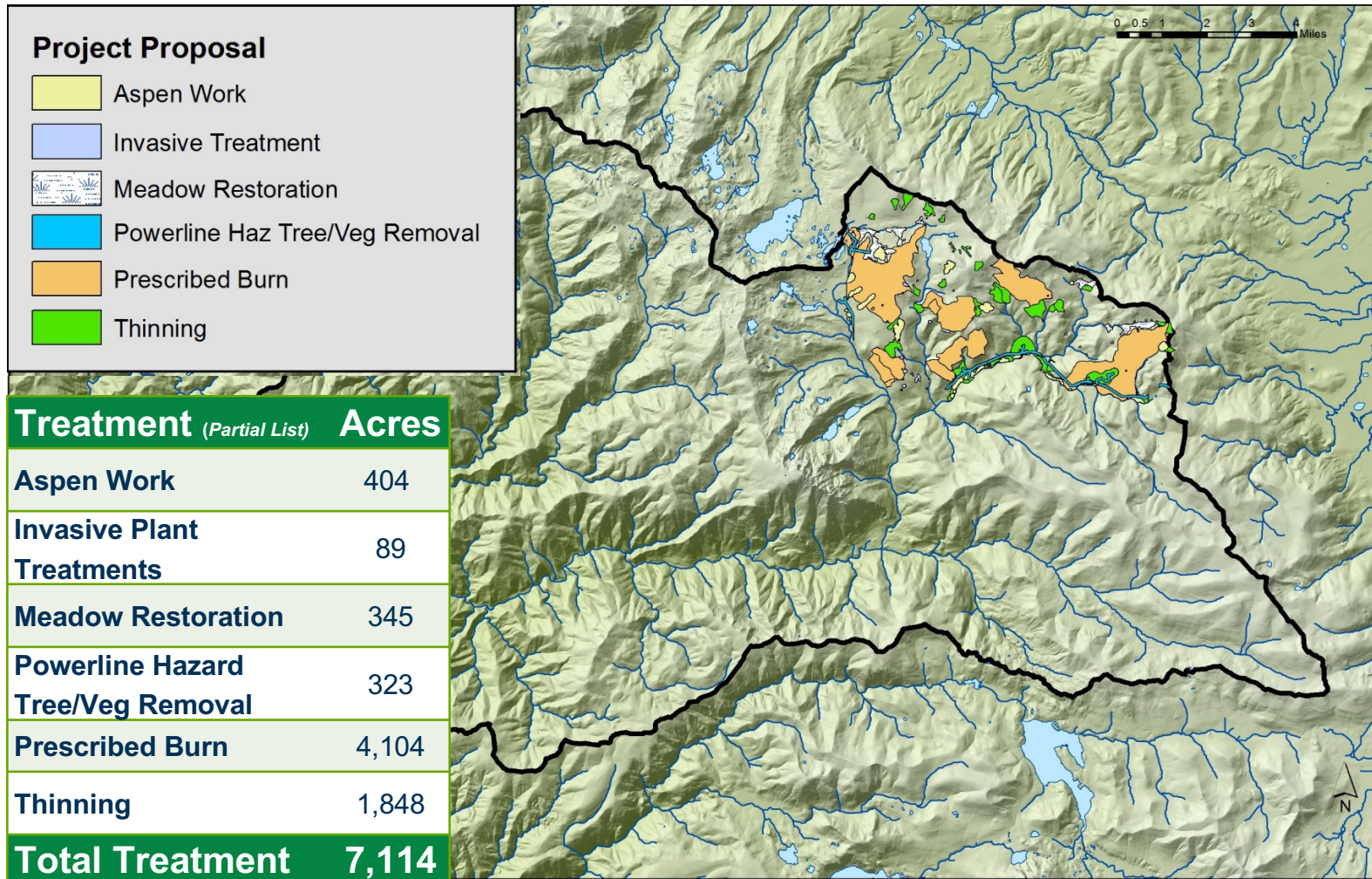
The Yuba Project, Tahoe NF



Yuba Project



Yuba Restoration Project

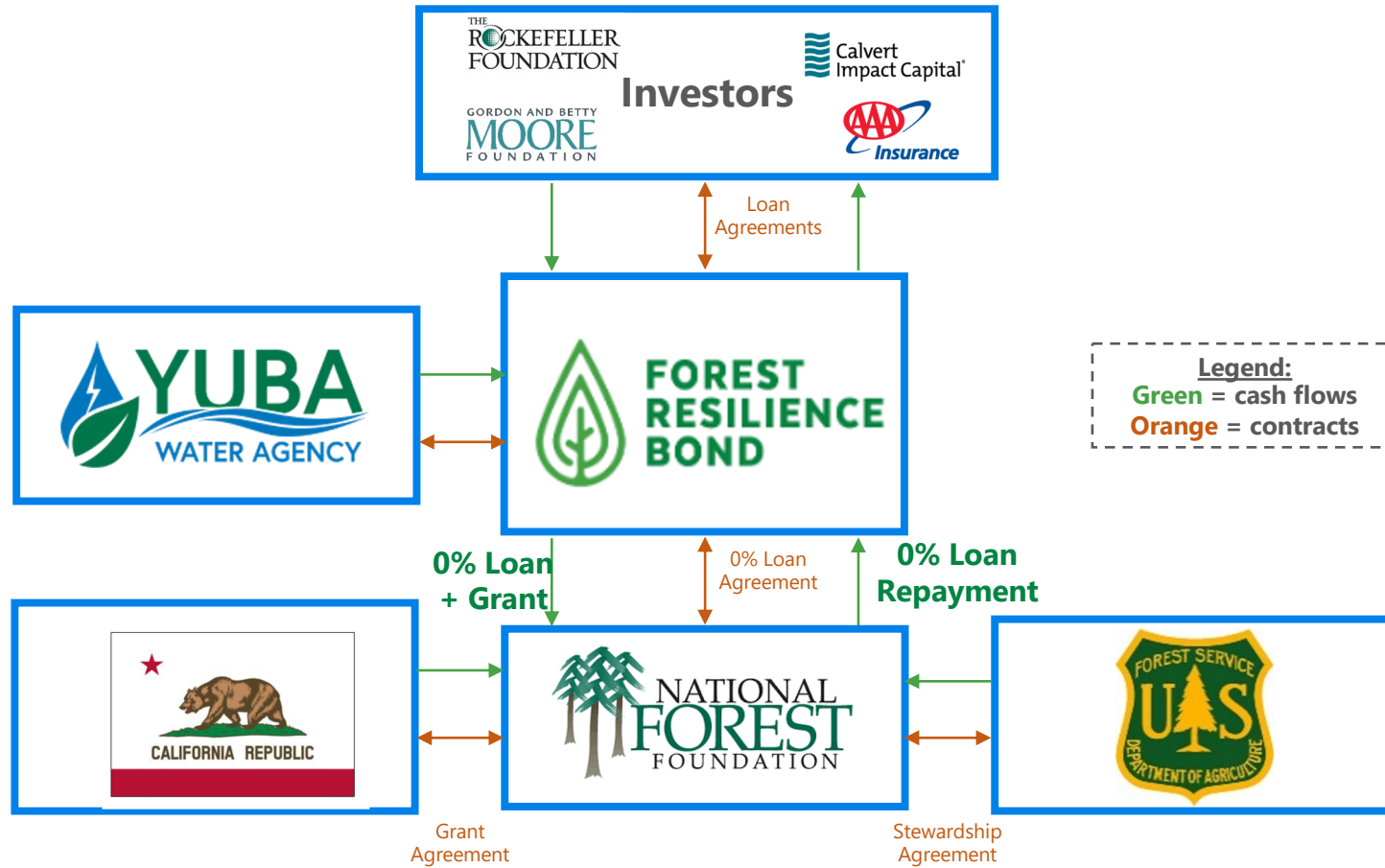


Diverse benefits to California, Sierra County, and Yuba Water Agency

- ▶ **Protect 50k acre-feet of water** annually for 5 years
- ▶ Generate **70k MWh of hydropower** annually for 5 years
- ▶ **Avoid 50k metric tons of CO₂ emissions** over 40 years
- ▶ Create **79 jobs** in local communities over 5 years
- ▶ WRI found **\$8.8M in economic value** over 20 years



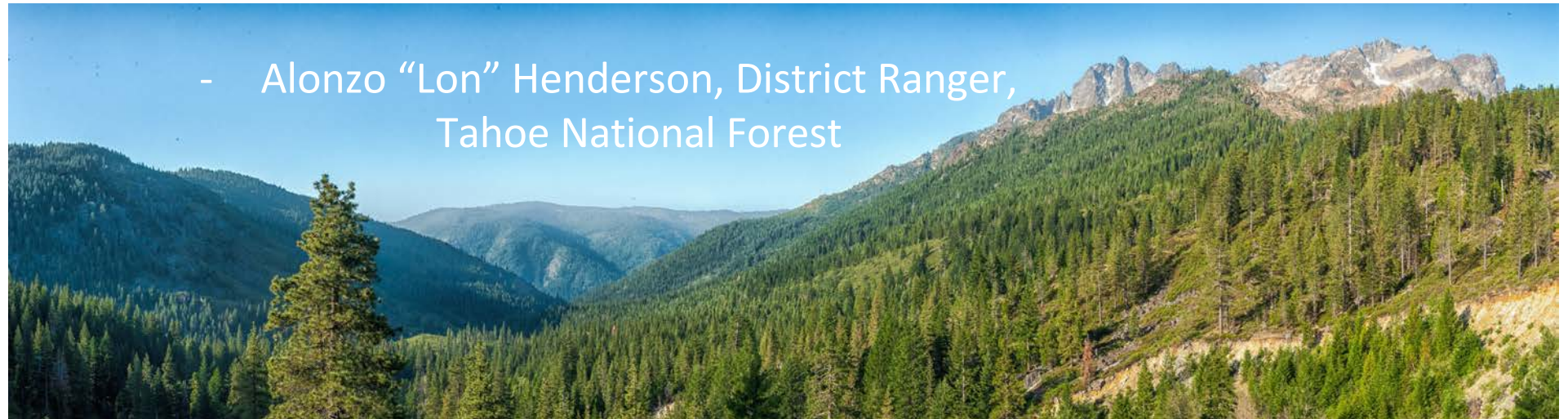
Pilot FRB: Structure & Stakeholders



Testimonial

“Typically, a large restoration project such as Yuba would take over ten years, if ever fully implemented. Instead, **we will complete it within three years.** This means a healthier, more resilient forest before insects, disease or wildfire negate our planning and before our communities are adversely impacted.”

- Alonzo “Lon” Henderson, District Ranger,
Tahoe National Forest

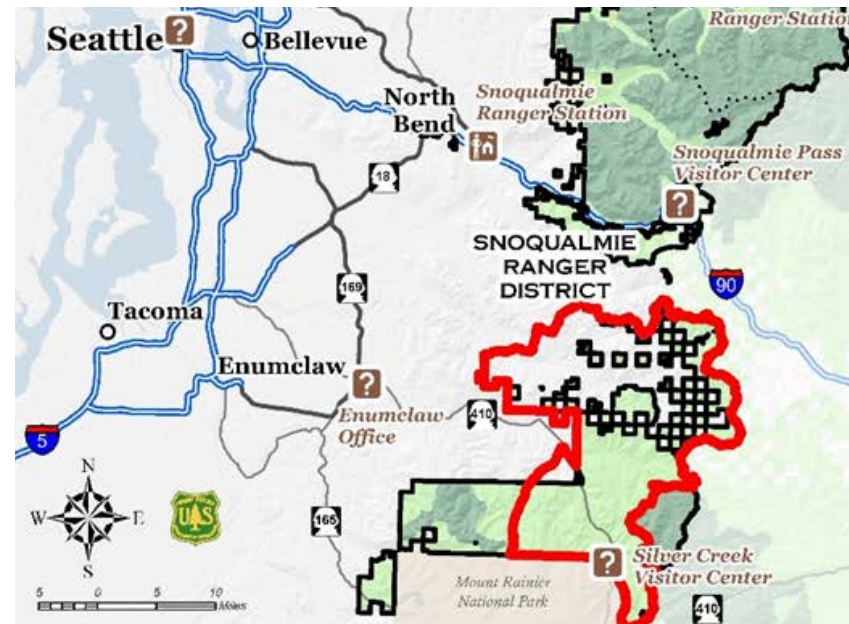


Opportunity: Snoquera Project



Snoquera: A priority landscape

- ▶ Over 120k acres in the Mt. Baker-Snoqualmie NF in the Upper Green and White River Watersheds (WRIA 9 and WRIA 10)
- ▶ Landscape-scale restoration project supported by multiple local groups
- ▶ Identified as one of 16 Western WA priority landscapes by WA DNR Forest Action Plan
- ▶ Project components:
 - Stream health **including fish passage**
 - Forest management
 - Recreation
 - Community Resilience

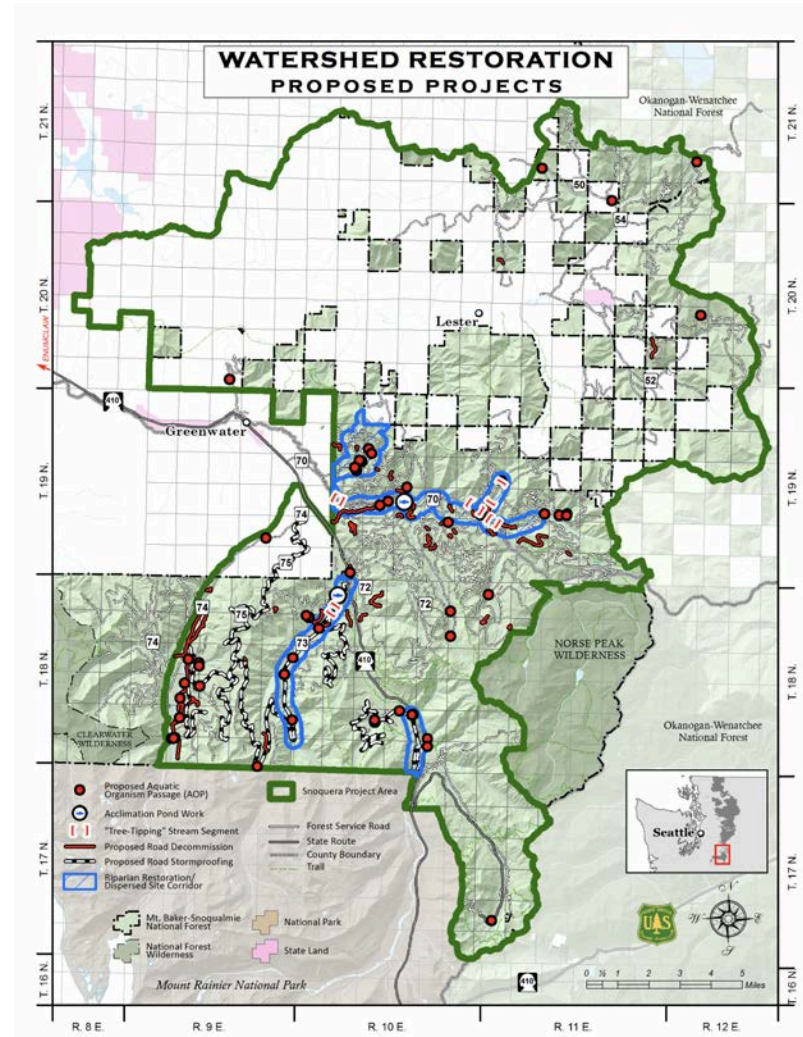


Snoquera Planned Actions and Benefits

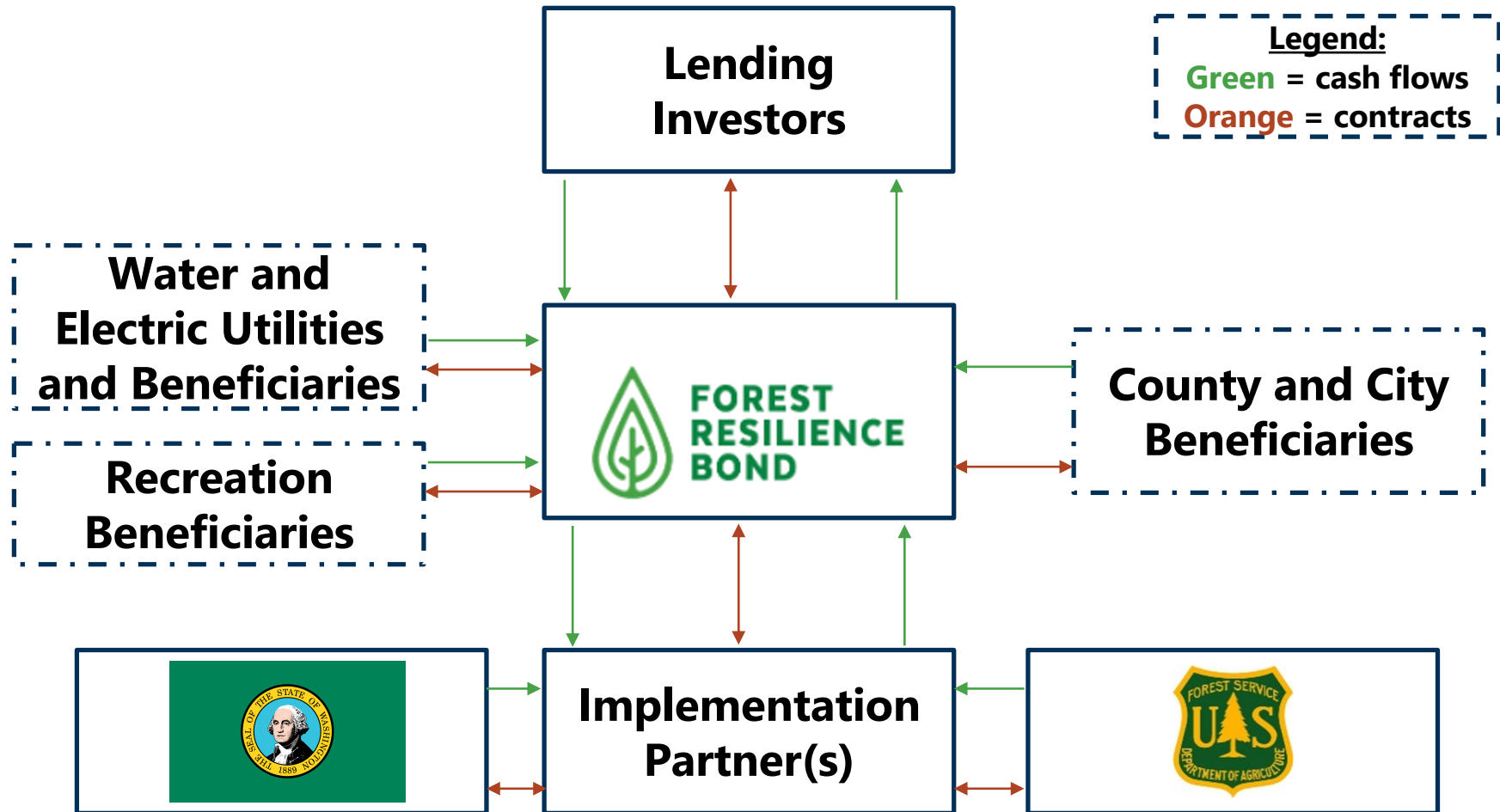
| Ecological Restoration | Total |
|---|---|
| Variable Density Thinning | Up to 12,245 acres |
| Elk Forage | Up to 389 acres |
| Huckleberry Enhancement | Up to 400 acres |
| Perennial Fish Bearing Stream Restoration | ~8 stream miles |
| Road maintenance | ~262 miles |
| Road Stormproofing | ~54 miles |
| Aquatic Organism Passage | 53 sites (49 in Puyallup-White, 4 in Green-Duwamish) opening 16 stream miles of habitat |
| Recreation | |
| Trailhead expansion/re-establishment | 3 trailheads |
| Dispersed Camping / Riparian Restoration | ~24 miles |

AOP Locations

| HUC 12 Subwatershed(s) | # AOP |
|---|-----------|
| Lower Greenwater River | 20 |
| West Twin Creek- White River | 1 |
| Silver Creek – White River, Headwater White River | 10 |
| Huckleberry Creek | 7 |
| Upper and Lower West Fork White River | 11 |
| Lester Creek – Green River | 0 |
| Sunday Creek - Green River | 3 |
| Twin Camp Creek – Green River | 0 |
| Headwater Green River | 1 |
| TOTAL | 53 |



Example Snoquera Project Contracts and Agreements



Project Development Framework



← We are here

← This is next

Project Proposal Development Example- Eldorado Project



| Projected benefits to Sacramento Municipal Utility District | | |
|---|---|--|
| Water Quantity | 10,950-14,590 acre-feet/year for 10 years | \$9.5M in additional hydropower revenue |
| Wildfire Risk Reduction | Reduction in average 20-30 year wildfire risk from 10.1% to 7.7%-9.1% | \$0.7-\$1.6M in avoided wildfire costs to assets Up to \$7.2M in avoided wildfire liability |

\$10-20M total

Working together- Snoquera

- We want to work with you to understand project benefits
- With your confirmed interest, there will be a more credible analysis to see if there is actually an economic benefit to your entity
- Economic analysis is at no cost to your entity, only some staff time and maybe data
- Letter of interest or MOU expressing your commitment to working together (but not committing financially)





BLUE FOREST
CONSERVATION

Financial Innovation for Sustainable Solutions



**WORLD
RESOURCES
INSTITUTE**



**FOREST
RESILIENCE
BOND**

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WDFW & Brian Abbott Fish Barrier Removal Board

Habitat Utilization Summary for Proviso Species

December 30, 2020

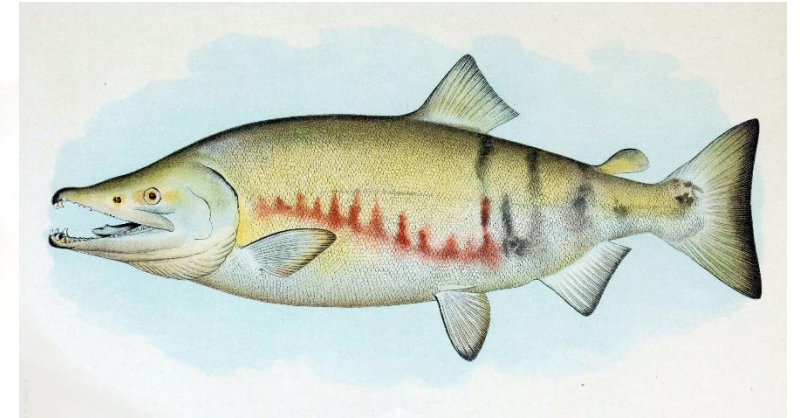
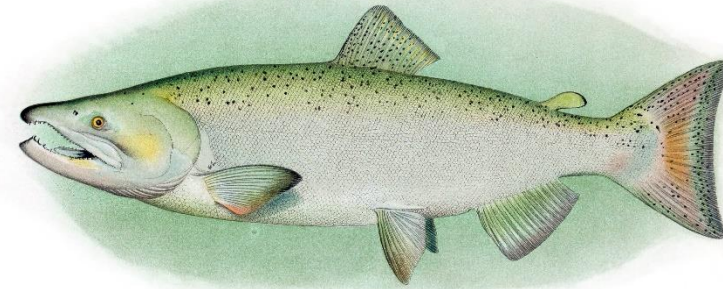
Tom Jameson, Fish Passage DIV MGR, Habitat Program & Chair of FBRB
Matt Curtis, Scoping Section MGR & FBRB Program MGR



Habitat Utilization Characteristics for ALL Proviso Species

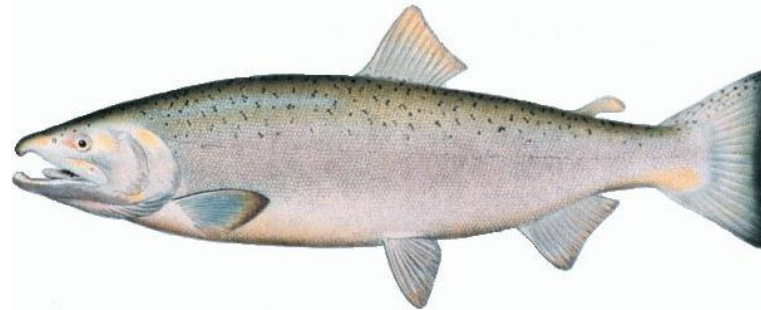
Spawning Habitat

- Continuous clean and cool water
- Large quantities and areas of clean, rounded gravels
- Channel complexity
- Cover



Rearing Habitat

- Cool, clean, oxygenated, continuous flow
- Overhanging vegetation and Large Woody Material (LWM)
- Diversity of Accessible Habitat Types



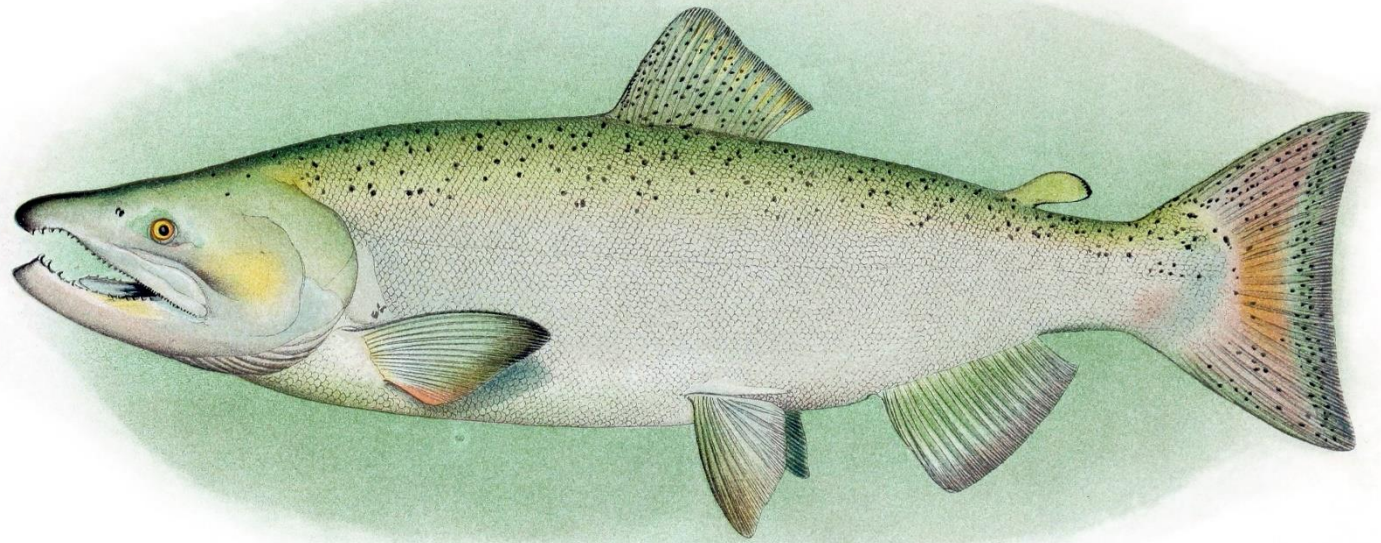
Habitat Utilization Characteristics for Chinook Salmon

Spawning Habitat

- Mainstem spawners that need a lot of space
- Large, deep, slow moving, low gradient streams
- 14-15 weeks of consistent, cool clean flow for optimal survival to emergence

Rearing Habitat

- Large, natal streams with nearby tributaries.
- Freshwater Residence: 1 year
- Estuarine habitat is critical for transition to tidal waters.



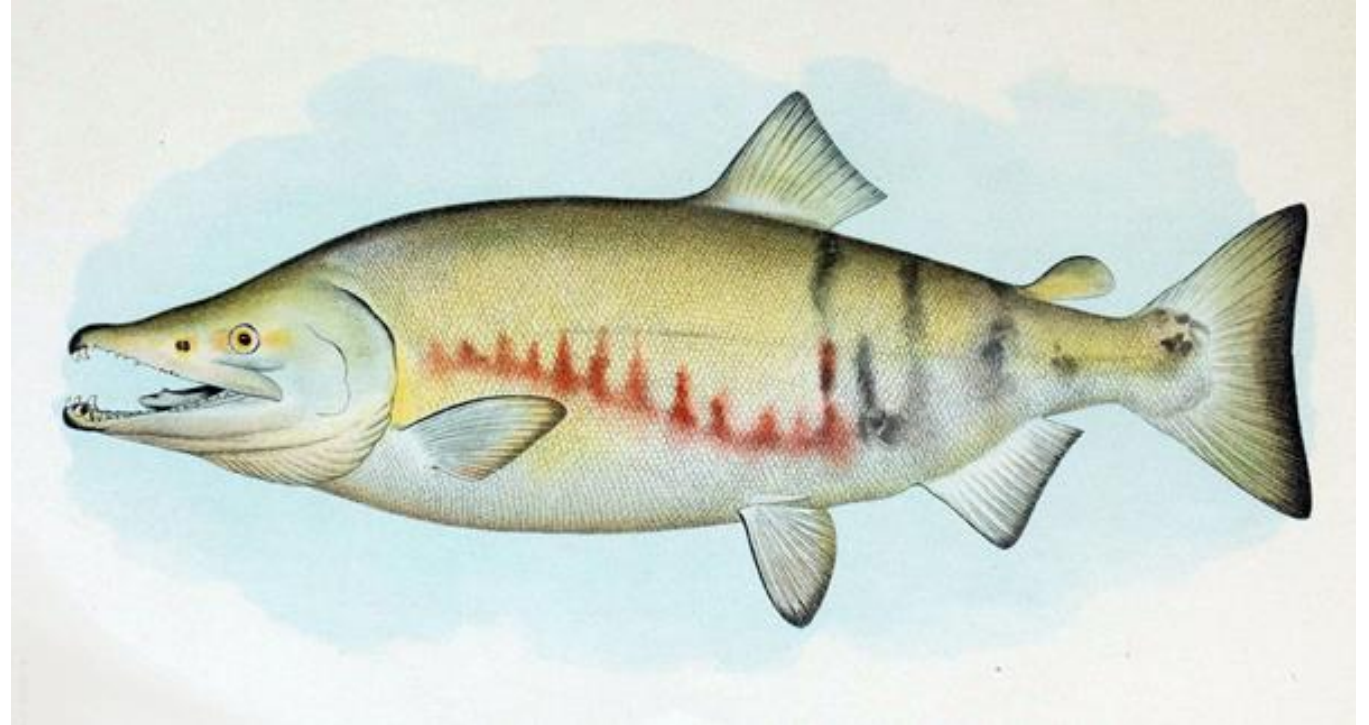
Habitat Utilization Characteristics for Chum Salmon

Spawning Habitat

- Medium to large, slow moving, very low gradient streams
- Spawn in margins and side channels of mainstems and in small streams
- 24 weeks of consistent, cool clean flow for optimal survival to emergence

Rearing Habitat

- Immediately move to tidal waters upon emergence.
- Freshwater Residence: a few days
- Critical need is intact nearshore and estuary habitat.



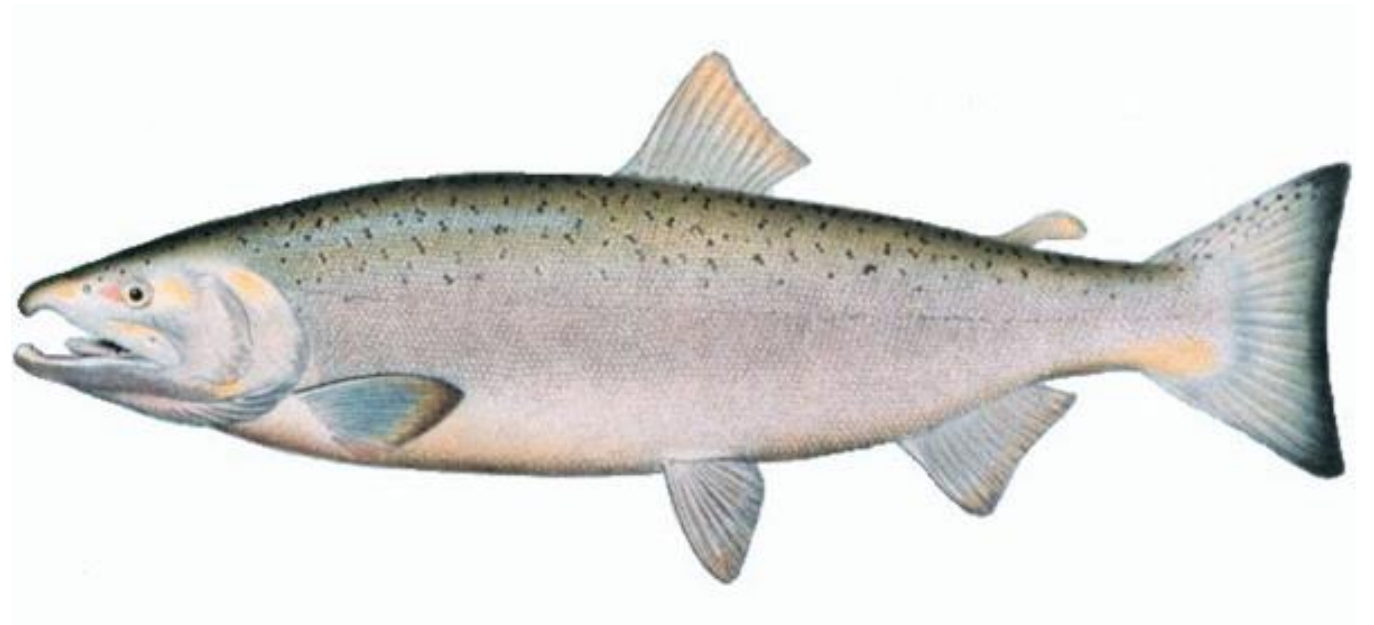
Habitat Utilization Characteristics for Coho Salmon

Spawning Habitat

- Any size stream with access
- Spawn in margins and side channels of mainstems and in small streams
- 8-10 weeks of consistent, cool clean flow for optimal survival to emergence

Rearing Habitat

- All accessible waters.
- Freshwater Residence: 2 years
- Upper reaches of streams and off-channel habitats critical.



Habitat Utilization Characteristics for Steelhead Trout

Spawning Habitat

- Any size stream with access
- Spawn in upper reaches of accessible stream habitat that has space
- 5-8 weeks of consistent, cool clean flow for optimal survival to emergence

Rearing Habitat

- All accessible waters
- Freshwater Residence: 1-4 years
- Diverse habitats throughout systems critical.



Thank You

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WDFW & Brian Abbott Fish Barrier Removal Board

Commonality in Evaluation Criteria for Fish Passage Barrier Removal Project Consideration
December 29th , 2020

Tom Jameson, Fish Passage DIV MGR, Habitat Program & Chair of FBRB
Matt Curtis, Scoping Section MGR & FBRB Program MGR



U.S. v Washington – The Culvert Case Injunction - WSDOT

- Prioritizes barrier corrections based on the greatest amount of potential salmon and/or steelhead habitat upstream.
- Prioritizes multiple projects together for efficiency
- Newly identified barriers will be addressed in a reasonable period of time
- State must maintain and monitor culverts for fish passage in perpetuity



The Injunction - WDFW, DNR, & State Parks

- All but DNR met deadline to complete their list of court ordered correction by October 31, 2016 (DNR has 2 remaining)
- Newly identified barriers are to be completed within 6 years of discovery.
- New barriers averaging 1 or 2 a biennium so no prioritization scheme is required.
- State must maintain and monitor culverts for fish passage in perpetuity



The Brian Abbott Fish Barrier Removal Board (FBRB)

- Barrier severity and linear habitat gain
- Clearly outlined anticipated costs
- Project readiness, i.e., design level, permits, sponsor capacity, etc.
- Habitat quality
- Design approach and climate change resilience
- Absence of downstream barriers
- Number of anadromous species affected by the barrier
- Occurring in a designated priority watershed



The Family Forest Fish Passage Program (FFFPP)

- Amount and quality of habitat opened by the project.
- Number of fish species which would benefit.
- Other upstream and downstream barriers.
- Project cost



USDA's Natural Resources Conservation Service (NRCS)

- Two Programs : Environmental Quality Incentives Program (EQIP) & The Regional Conservation Partnership Program (RCPP)
- Ranking criteria changes annually and is not set by the local NRCS regions
- Fish passage projects compete against all other practices that NRCS funds (fencing, manure ponds, high tunnels, tree planting...)
- Projects with District Conservationist support usually get funded



The Salmon Recovery Funding Board (SRFB)

- High benefit to salmon.
- High likelihood of being successful.
- Costs that don't outweigh the anticipated benefits of the project.



King County

- Quality and amount of fish habitat that could be restored
- Current Condition of the crossing structure
- Other factors



Thurston County

- Anadromous fish access
- Potential habitat gain
- Barrier status
- Culvert condition
- Maintenance history



Thank You

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