

# Integrating Ecosystem Services into Operations and Management



## The Cool Soda Experience

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The Sweet Home Community of Interest  
The Sweet Home Ranger District Interdisciplinary Team  
Regional NFS and Research staff

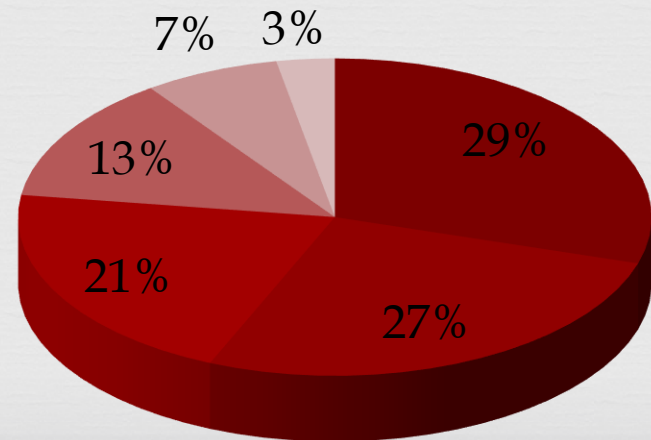
# Current Paradigm



- Dependent on timber and fire funding
  - ✧ Planning and implementation
- Mitigate in compliance with environmental laws
  - ✧ Endangered Species Act
  - ✧ Clean Water Act
- Partnerships fund “other resource” projects
  - ✧ Rocky Mtn Elk Foundation
  - ✧ Oregon Watershed Enhancement Board
  - ✧ Bonneville Power Administration
  - ✧ State Fish and Game

## 2014 Budget

- Timber and Silviculture
- Engineering / Recreation / Minerals
- Fire
- Overhead
- "Other Resources"
- Planning and Monitoring



# A Variety of Constituents

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❧ Timber/range/mining interests

❧ Extraction of resources

❧ Environmental interest

❧ Protection of resources

❧ Recreation interests

❧ Access to the land base





# A New Vision



- ❧ Use ecosystem service concepts as a basis for land management decisions
- ❧ Invest in the environment
  - ❧ Integrated funding to plan and implement a suite of actions
- ❧ Develop social contracts
- ❧ Focus on outcomes not targets

# A Shift in Approach



- ❧ Know the capabilities of the land
- ❧ Understand what is valued
- ❧ Research existing and desired conditions
- ❧ **Map** where values are best met
- ❧ Propose solutions to conflicts
- ❧ Highlight agreed upon outcomes

**Charette** a meeting in which all stakeholders in a project attempt to resolve conflicts and map solutions.



# The Charette Process



## ❧ Knowledge Transfer

- ❧ Intensive introduction to the area
- ❧ Shared knowledge

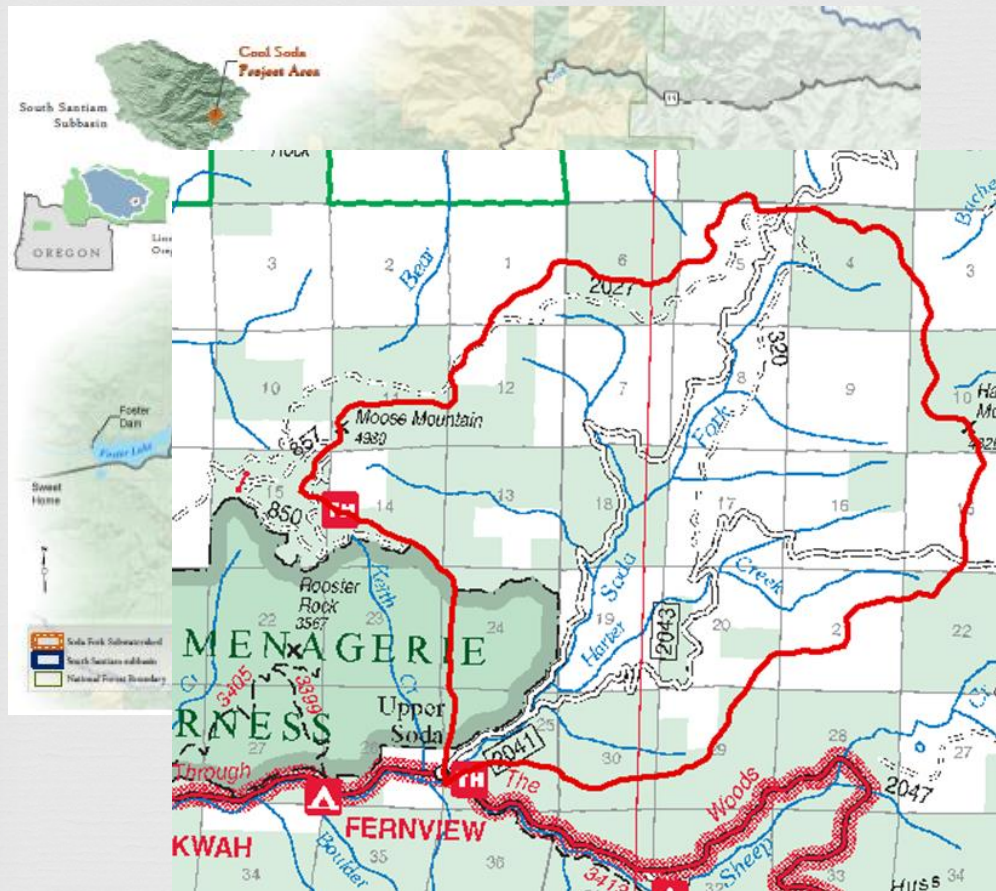
## ❧ Collective Learning (community of interest)

- ❧ Investigation and data collection
- ❧ Feedback / discussion / learning

## ❧ Restoration Design Concept (iterative)



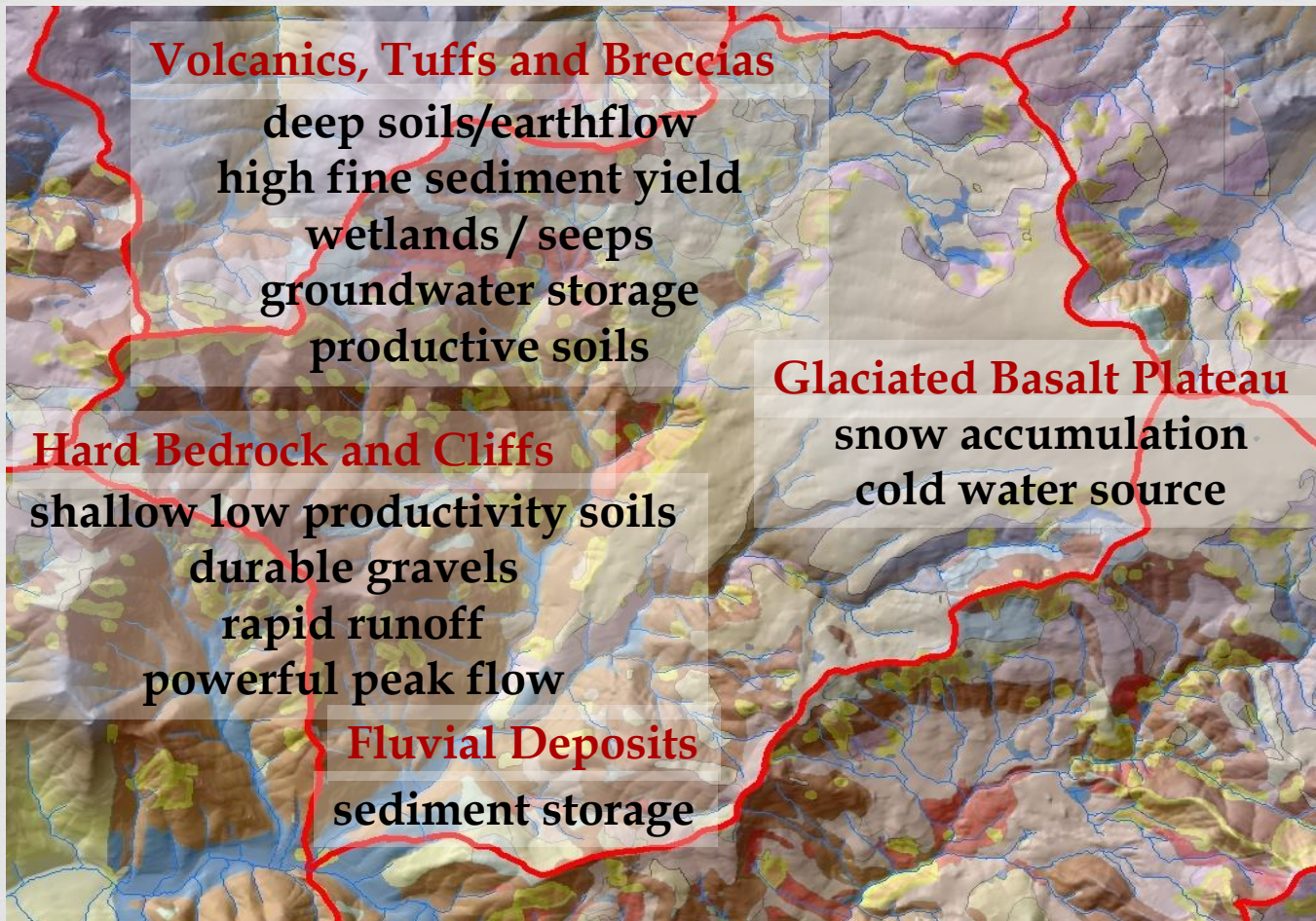
# Landscape and Community of Interest



American Forest Resource Council  
Cascadia Wildlands  
City of Sweet Home  
Confederated Tribes of Grand Ronde  
Confederated Tribes of Siletz Indians  
Confederated Tribes of Warm Springs  
Linn County Park Dept.  
Oregon Dept. of Fish and Wildlife  
Oregon Hunters Association  
Oregon State Dept. of Forestry  
Oregon State University  
Oregon Wild  
Portland State University Students  
South Santiam Watershed Council  
Sweet Home Economic Development Grp  
U of Oregon Ecosystem Workforce Grp  
US Fish and Wildlife Service  
Rocky Mountain Elk Foundation  
Sweet Home citizens



# Knowledge Transfer

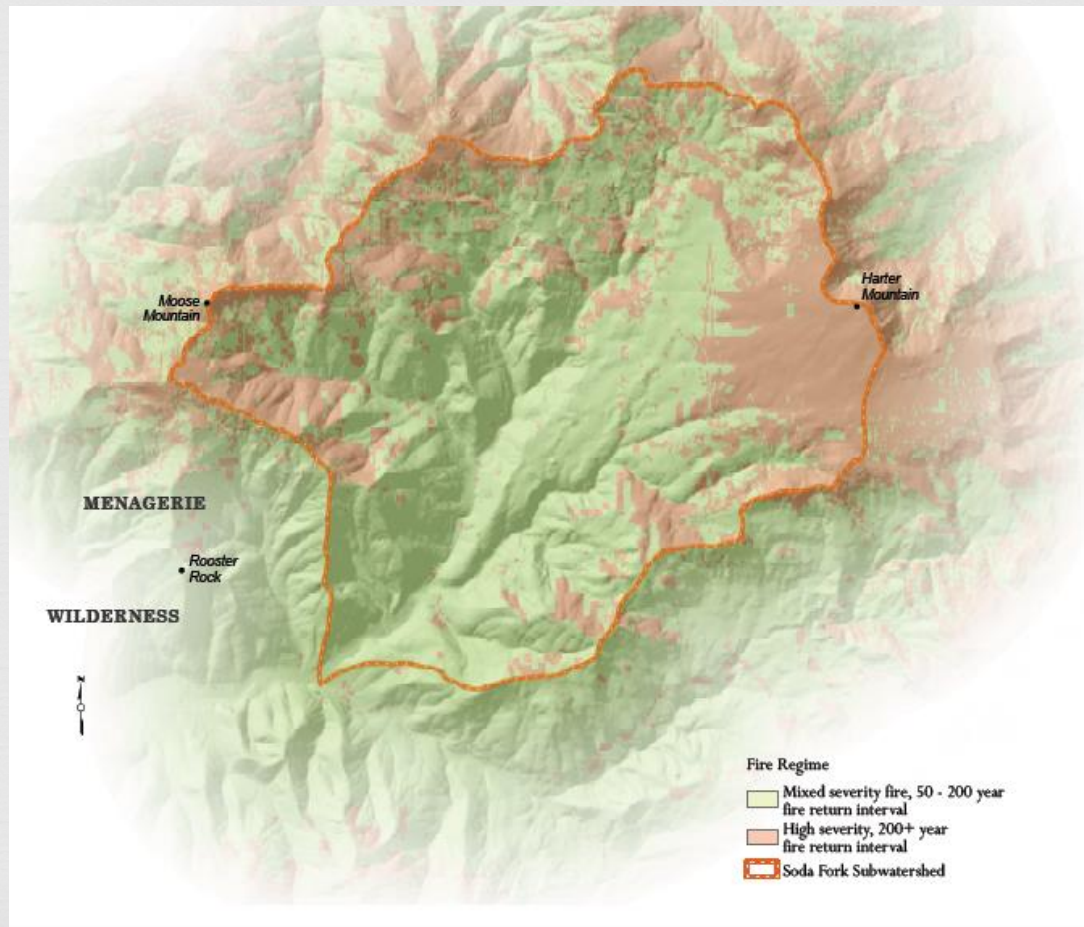


## Physical Resources

- œ Geology
- œ Landforms
- œ Soils
- œ Hydrology
- œ Climate



# Knowledge Transfer



## Disturbance Processes

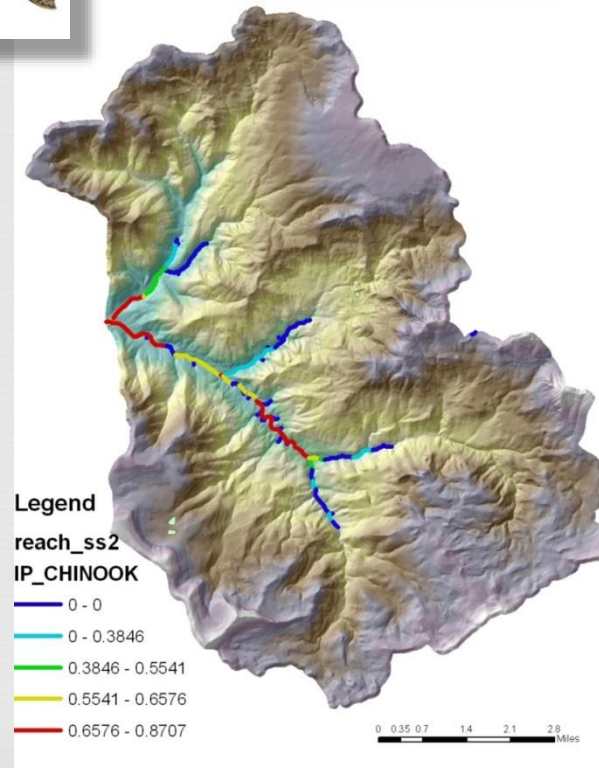
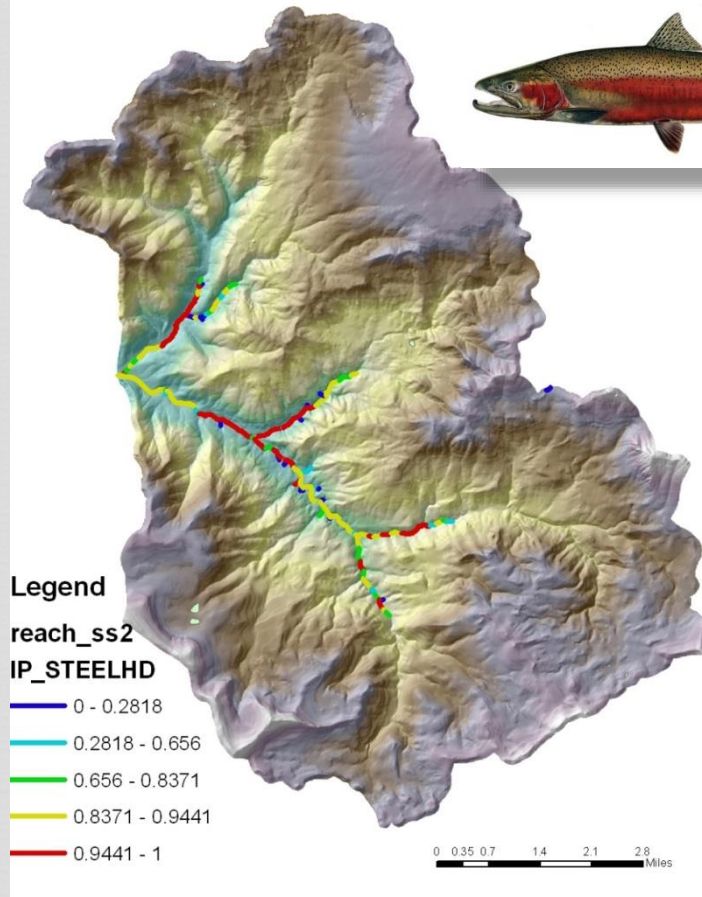
- Fire
- Wind
- Insect and Disease
- Erosion

# Knowledge Transfer



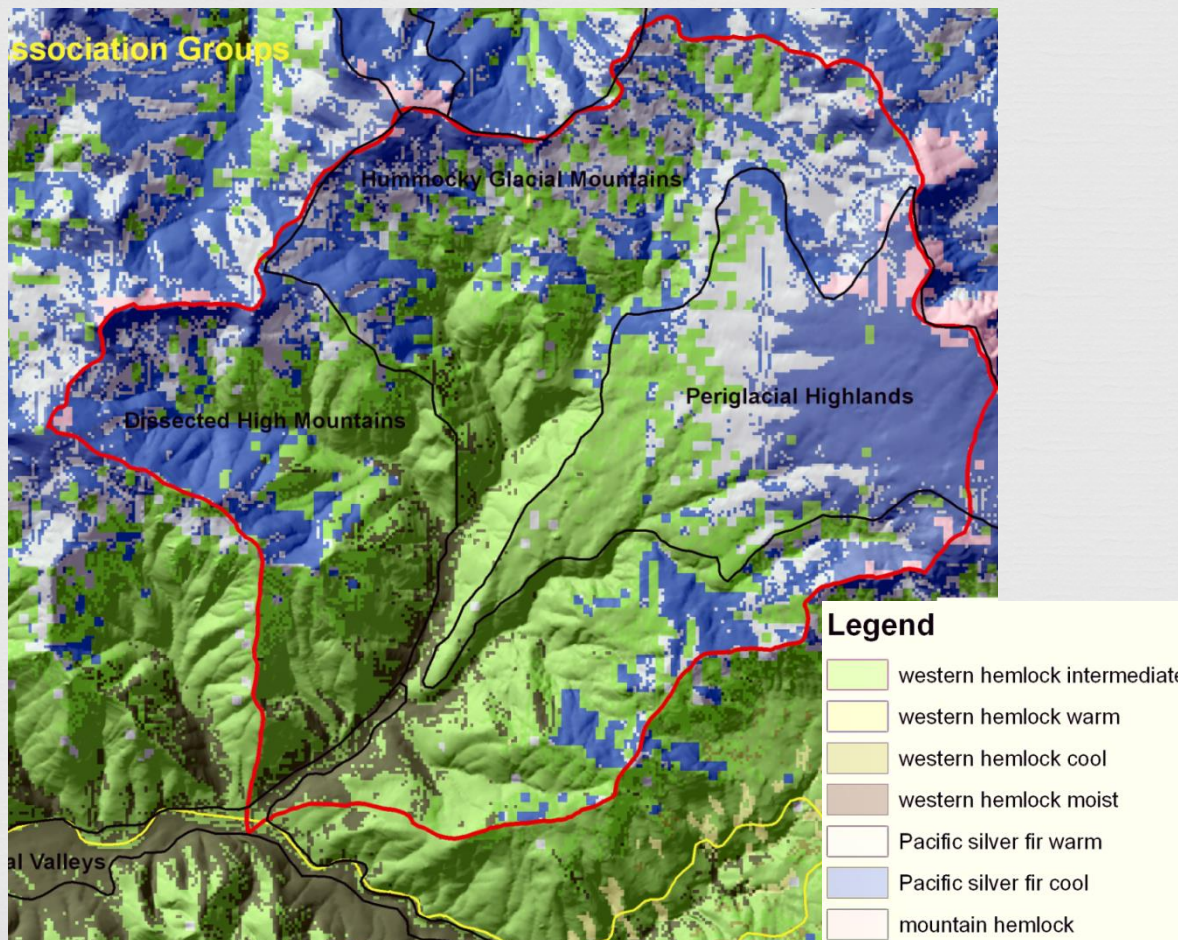
Biological  
Resources

Native fish  
inherent  
potential





# Knowledge Transfer



Biological  
Resources

Native plant  
species  
distribution



# Habitats and Cultural Landscapes

- Dry Meadow Habitats
- Wet Meadow Habitats
- Ponds and Seeps
- Rock Talus Areas
- Skunk Cabbage Patches
- Older Vine Maple areas





# Historic Wildlife Species



# Community Ecosystem Service Values

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Clean cold water  
Wild fish  
Aquatic species diversity  
Jobs  
Traditional and cultural uses  
Aesthetics  
Recreation  
Timber products  
Native plant species diversity  
Wildlife species diversity  
Old growth forests  
Carbon storage  
Climate regulation  
Fire protection  
Environmental education  
Public health  
Wilderness



## Streams and Wild Fish

## Forests and Wildlife



## Community and Culture





# Investigate Status of Services



# Design Alternative Futures





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# Design Alternative Futures

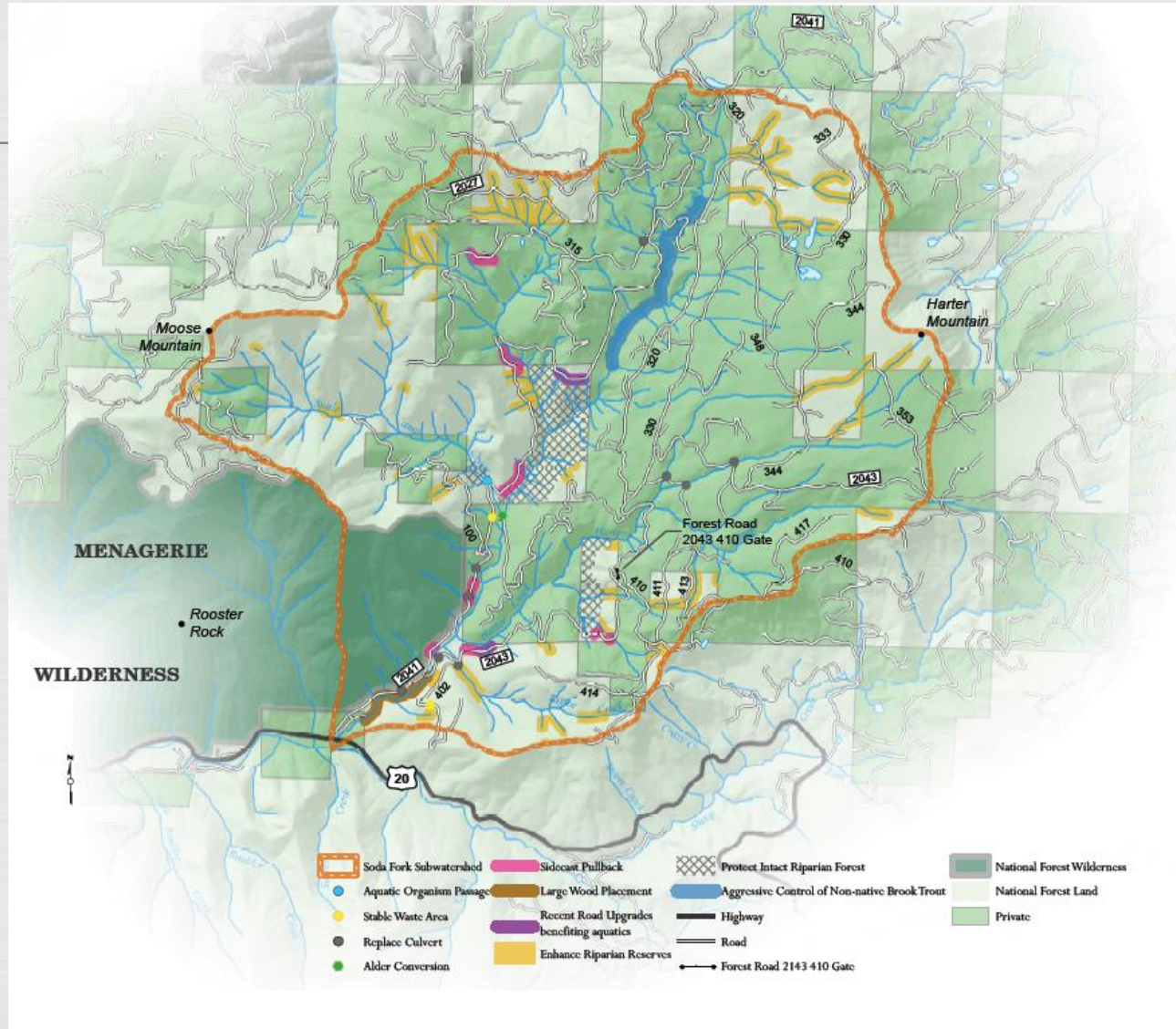




# Restoration Design

World of Ideas...Near Term Actions

## Streams and Wild Fish



### Jobs



Excavator and dumptruck hours to replace culverts and pull back road sidecast.



One construction job to replace the Suttle Camp Creek culvert on Road 2041 with a bridge.



Two seasonal jobs for the Forest Service to conduct fish shocking for brook trout eradication in upper Soda Fork Creek.



One week of contracted yarder work to pull over 40 trees in lower Soda Fork Creek.

A timber falling job and one day of tree planting for alder to conifer riparian conversion.

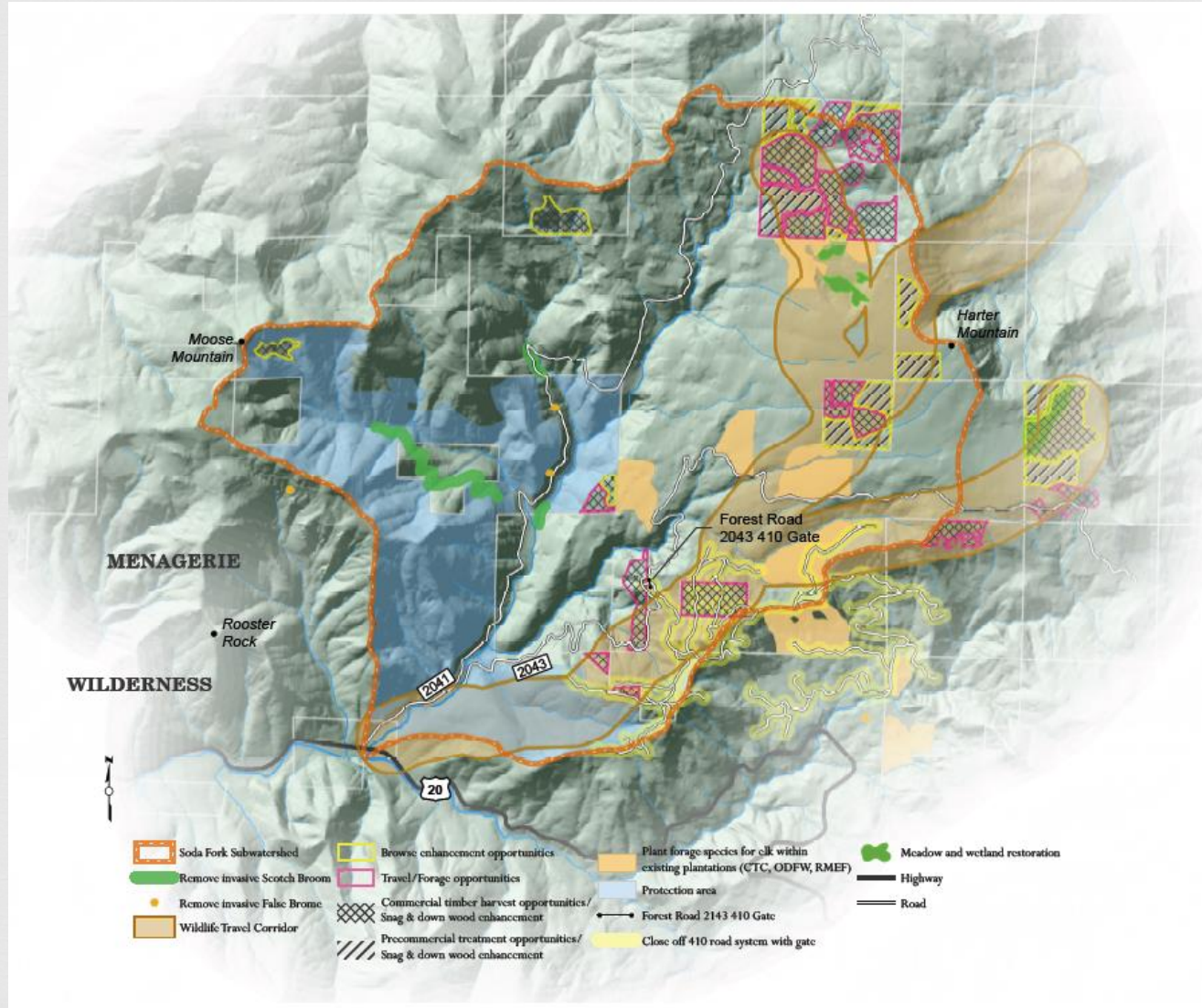
Local contractors for gate installation.



# Restoration Design

World of Ideas...Near Term Actions

## Forests and Wildlife



### Jobs



Timber fallers for harvest and special habitat creation



Drivers and operators for harvest and log haul



Mastication contractor for meadow and wildlife corridor enhancement work



Youth corps work to remove invasive species



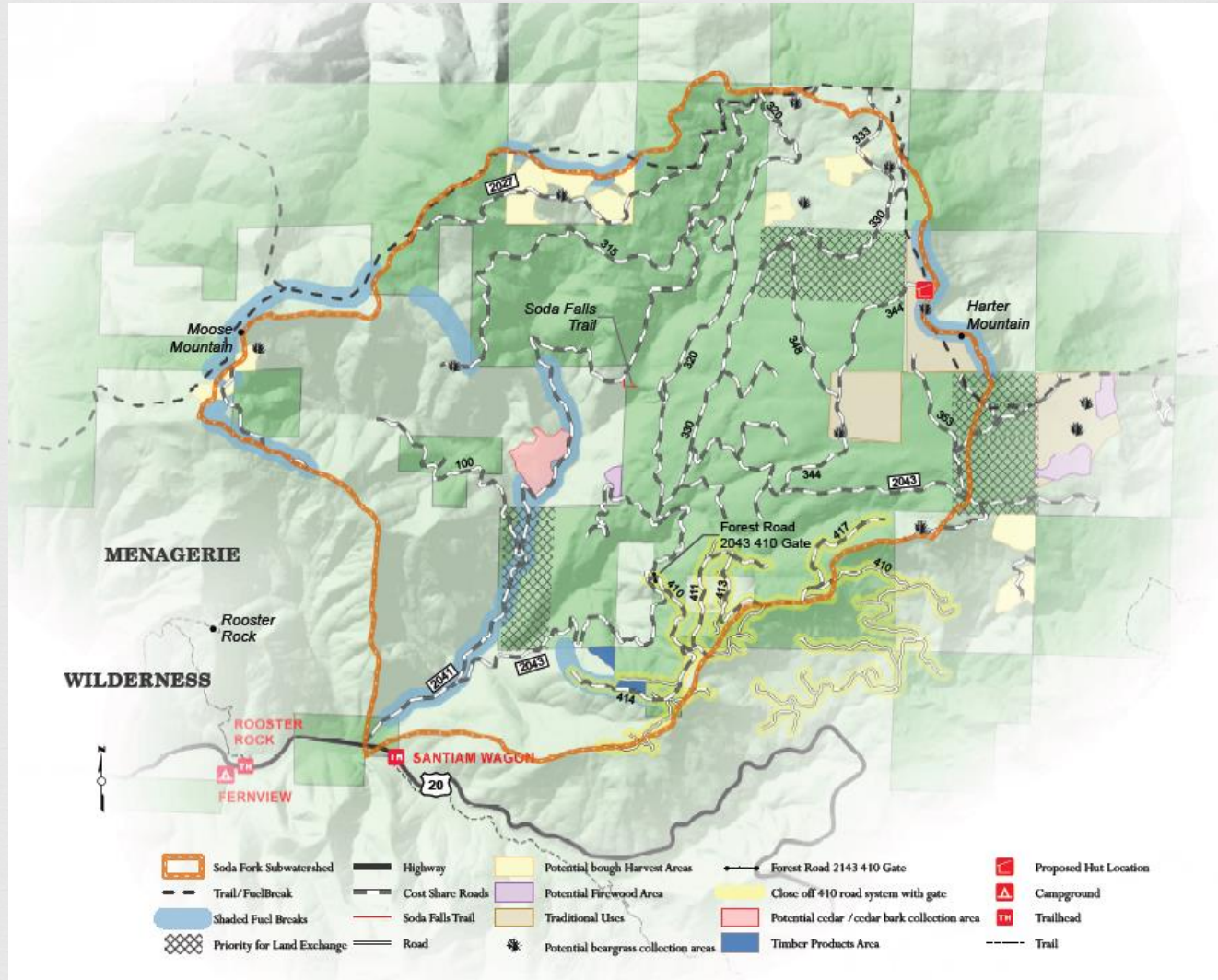
Local contractors for gate installation



# Restoration Design

World of Ideas...Near Term Actions

## Community and Culture



### Jobs



Excavator and dumptruck for road work.



Logging contractors for fuel break work.



Permit coordination for special forest products gathering



Volunteer labor for the trail construction to the view of the falls.

Local contractor to install gate on 2043 410.

Entrepreneurial opportunities for outfitter guides related to the hut-to-hut trail system.

Commercial firewood potential from designated firewood areas.

# Proposed Action Table

## EXAMPLE:

### Restoration Opportunity: Install Bridge

#### Output:

½ mile of stream restored

#### Outcome:

- \* Removes only unnatural barrier in ESA listed fish stream
- \* Allows sole source of durable gravel to enter key fish habitat
- \* Restores genetic diversity to isolated fish population

Landscape Challenges	Near-term Action Opportunities	Outputs	Outcomes	Benefits from Nature	Costs/Revenues
Streams and Wild Fish					
Remove barriers to fish, gravel and wood movement	Replace undersized culverts	6 miles of stream restored (USFS, CTC)	Reduces risk of failure on 6 undersized culverts with steep fills showing signs of imminent failure that are directly upstream of ESA listed fish species. 90% of aquatic risk culverts will be replaced in the watershed.	<ul style="list-style-type: none"> <li>Clean cold water</li> <li>Wild fish</li> <li>Jobs</li> </ul>	\$240,000
Minimize sources of fine sediment	Excavate road adjacent	1 mile of stream restored (USFS, CTC)	90% of the high aquatic risk side cast areas will be stabilized. May prevent approximately 100 cubic yards of fine sediment from entering Snake Falls.	<ul style="list-style-type: none"> <li>Clean water</li> <li>Aquatic sp. diversity and habitat</li> <li>Jobs</li> </ul>	\$20,000
Remove barrier to winter steelhead, bullhead movement, and wood transport	Install bridge at Little Camp Creek to restore aquatic organism and gravel/wood passage	16 miles of stream restored (USFS, CTC)	Removes only unnatural barrier to ESA listed fish in watershed. Allows sediment sorting of major source of local competent double-gravel directly into a ESA listed fish spawning bar. Reintroduces genetic diversity to resident fish above the culvert.	<ul style="list-style-type: none"> <li>Wild fish</li> <li>Traditional cultural uses</li> <li>Jobs</li> </ul>	\$250,000
Restore native fish species	Aggressively control brook trout through stocking and removal	3 miles of stream restored (USFS, CTC)	Objective will be to limit the population of brook trout to 5-10% of the current numbers. Depleted populations will be able to recolonize 3 miles of upper Snake Falls.	<ul style="list-style-type: none"> <li>Aquatic sp. diversity and habitat</li> <li>Jobs</li> </ul>	\$100,000
Improve channel wooded to bedrock that currently lacks complex habitat and spawning areas for anadromous fish	Implement in stream large wood placement through tree topping	1 mile of stream restored (USFS)	90% of the most important stream reach for anadromous fish in the Cool-Snake planning area will be restored by increasing structural complexity through introduction of large wood.	<ul style="list-style-type: none"> <li>Wild fish</li> <li>Clean cold water</li> <li>Jobs</li> </ul>	\$50,000
Increase cover in riparian areas to provide shade and sources of large wood	Convert alders to conifers (Little Camp and Snake Fork Creek confluence)	2 acres (CTC)	50% of the historic cedar density would be restored in the alder-dominated floodplain on listed fish habitat	<ul style="list-style-type: none"> <li>Clean cold water</li> <li>Wild fish</li> </ul>	\$7,500

- ❧ Landscape Challenges
- ❧ Restoration Opportunities
- ❧ Outputs (Targets)
- ❧ Outcomes
- ❧ Benefits From Nature
- ❧ Costs/Revenues





# Follow Through



- ❧ Private lands grant for forage improvement
  - ❧ Before project completed
- ❧ Programmatic consultation in place for aquatic restoration, culverts, roads
  - ❧ Projects implemented 2013-14
- ❧ Environmental Assessment needed for all vegetation projects
  - ❧ After 1 year, ready to sign
  - ❧ Partners for elk forage projects
- ❧ Ironically, waiting for fire funds



*"This year, for the first time in recent memory, winter steelhead redds were observed within the project reach"*

# Questions / Discussion

