

Steelhead Recovery in Latah County

2023 Family Forest Landowners & Managers Conference

Presented by

Brenda Erhardt, Resource Conservation Planner

Latah Soil and Water Conservation District

March 28, 2023



Latah Soil and Water Conservation District

- Working With Willing Landowners to Improve Lands and Protect Resources
 - Private Landowners
 - Farmers
 - Ranchers
 - U.S. Forest Service
 - Idaho Department of Lands



Latah Soil and Water Conservation District

- Voluntary, locally-led conservation
- Work within Latah County
- Locally-elected Board of Supervisors
- Primarily Grant Funded



What We Do...



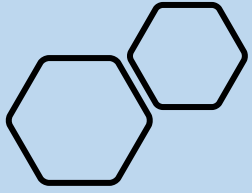
Collaborative Efforts



- Local**
 - **Private Landowners**
 - Latah County Highway Districts
 - Palouse Land Trust
 - Palouse Prairie Foundation
 - Idaho Native Plant Society
- State**
 - Idaho Office of Species Conservation
 - Idaho Department of Lands
 - Idaho Department of Environmental Quality
 - Idaho Department of Fish and Game
 - University of Idaho
- Federal**
 - Farm Service Agency
 - Natural Resources Conservation Service
 - U.S. Fish and Wildlife Service
 - U.S. Forest Service



Restoration Roundtable 2011



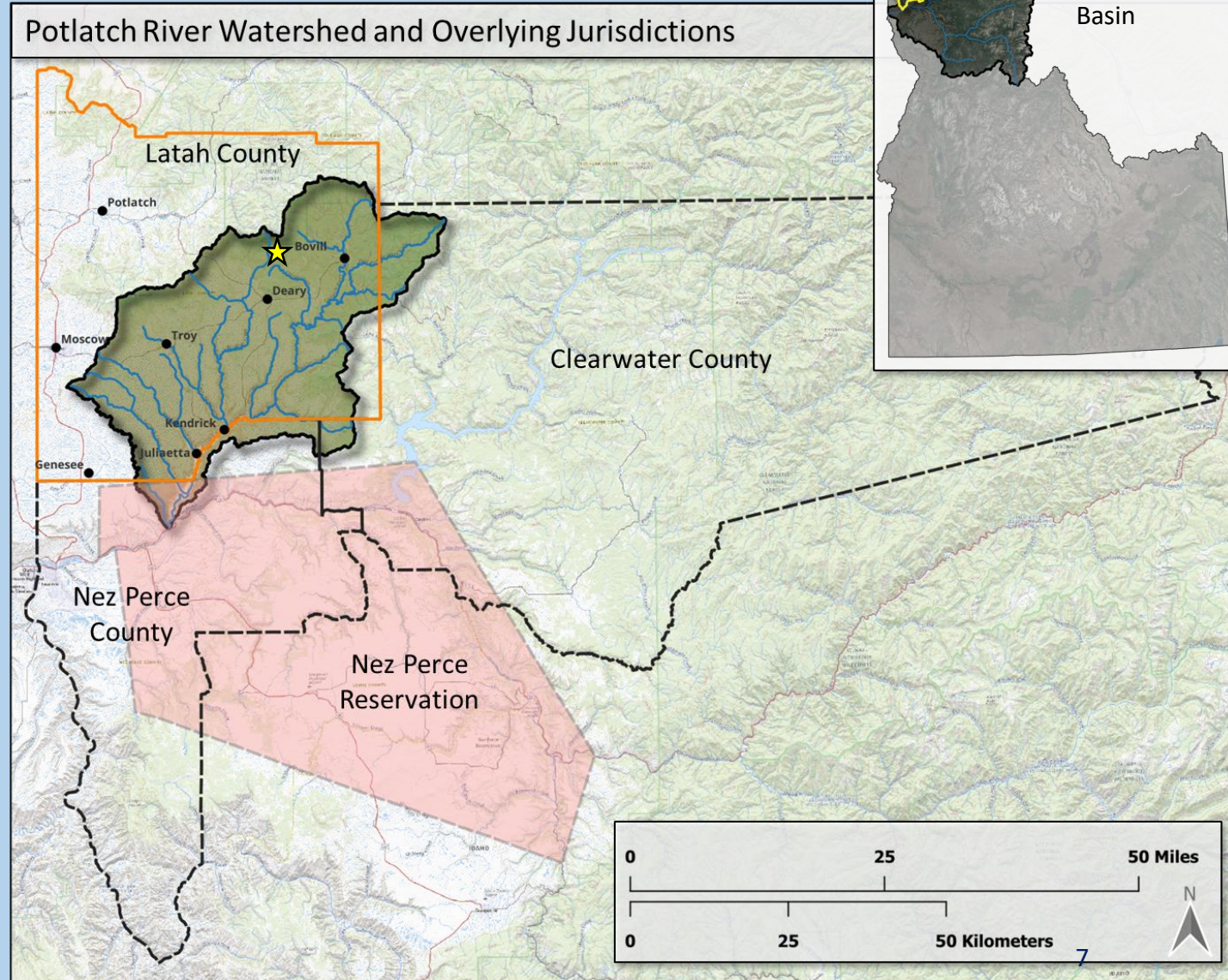
Latah SWCD Field Crew

- Field season
 - April-November
- Another essential component!



Potlatch River Watershed

- Clearwater Basin
- Majority of the watershed within the boundaries of Latah County/Latah SWCD
- 380,400 acres
- 78% Private Ownership



Focus – Wild Steelhead Habitat



The Potlatch River...

- has the **strongest component of wild steelhead** within the Clearwater River Lower Mainstem population
- **comprises 25% of the historic intrinsic potential** of the Clearwater River Lower Mainstem steelhead population
- includes steelhead that are **genetically distinct** from other wild Clearwater River groups

Source: IDFG/Bowersox 2011

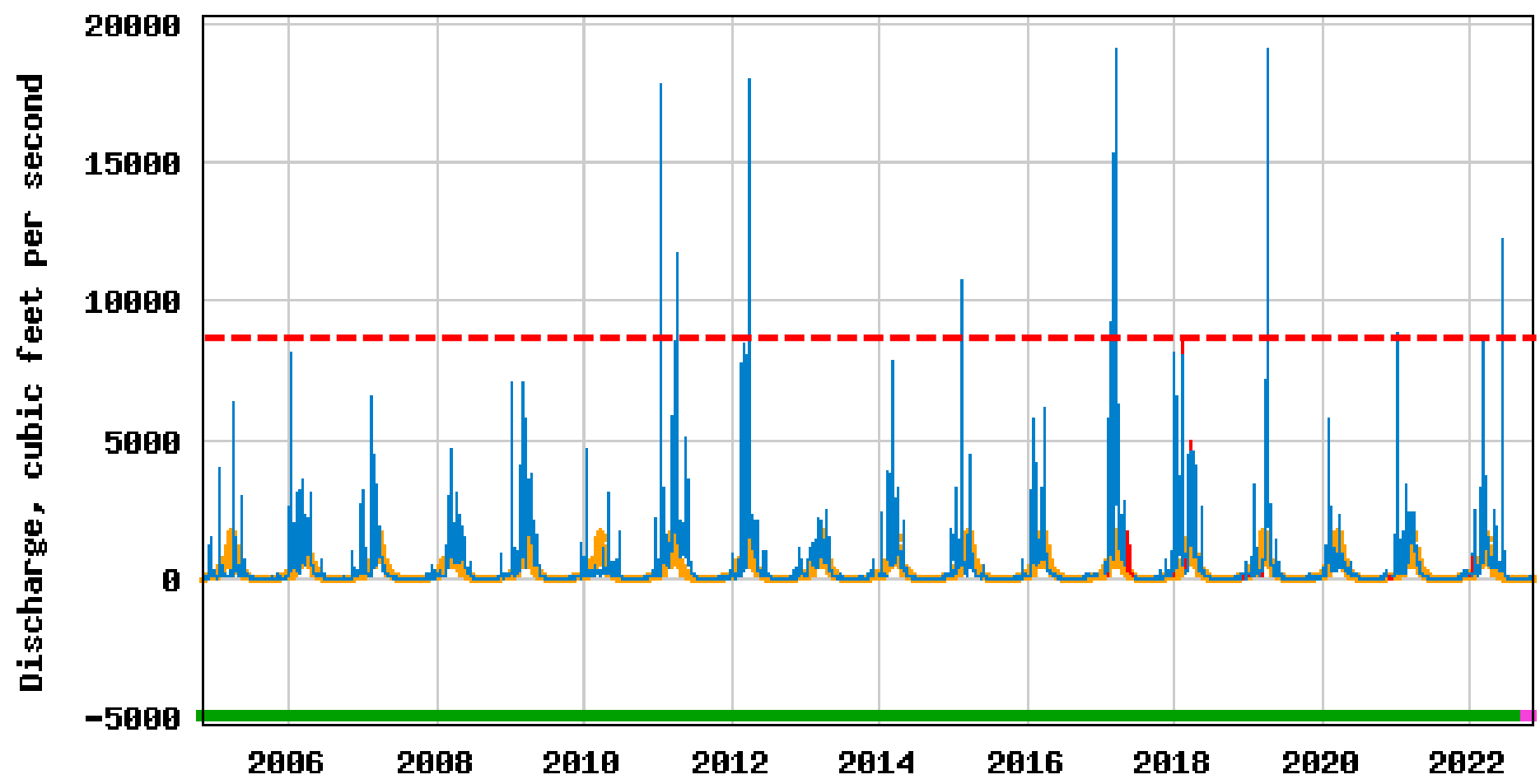


Potlatch Steelhead - Limiting Factors and Recommended Restoration Methods

- High water temperature
 - **Restore wetlands and plant native plants to promote shade**
- Low Flows
 - **Restore wetlands, reconnect the floodplain**
- Sedimentation
 - **Restore wetland and plant native plants**
- Lack of habitat complexity
 - **Restore wetlands and riparian zones and plant native plants**
- Migration Barriers
 - **Replace man-made barriers**



USGS 13341570 POTLATCH RIVER BEL LITTLE POTLATCH CR NR SPALDING



Peak flows in 1950s-1960s

- Median daily statistic (18 years)
- Discharge
- Estimated discharge
- Period of approved data
- Period of provisional data

~ 15,000 cfs @ 8:00 am – current photo
~ 19,000 cfs @ 3:00 am



POINT
VIEW

03/16/2017 07:58

51°F



Potlatch River near Big Bear Creek
August 9, 2015
~0.1 cfs at mouth of Potlatch River

Potlatch River Steelhead Habitat Project Goals

Goal 1.) Improve fish passage to suitable habitat.

Goal 2.) Provide suitable habitat for steelhead spawning and/or rearing.

Goal 3.) Improve instream water flows to support spawning and rearing habitat.

- Summer Base Flow
- Summer Stream Temperature



Latah SWCD Progress: 2004 – 2020

125 + projects

- Removal of 30 migration barriers – opening ~37 stream miles
- Floodplain reconnection – 450 acres
- Stream restoration – 28 miles
- Native trees, shrubs, forbs, grasses and grasslikes planted – 269,410
- Native seed applied – TONS (literally...)



Schwartz Creek culvert

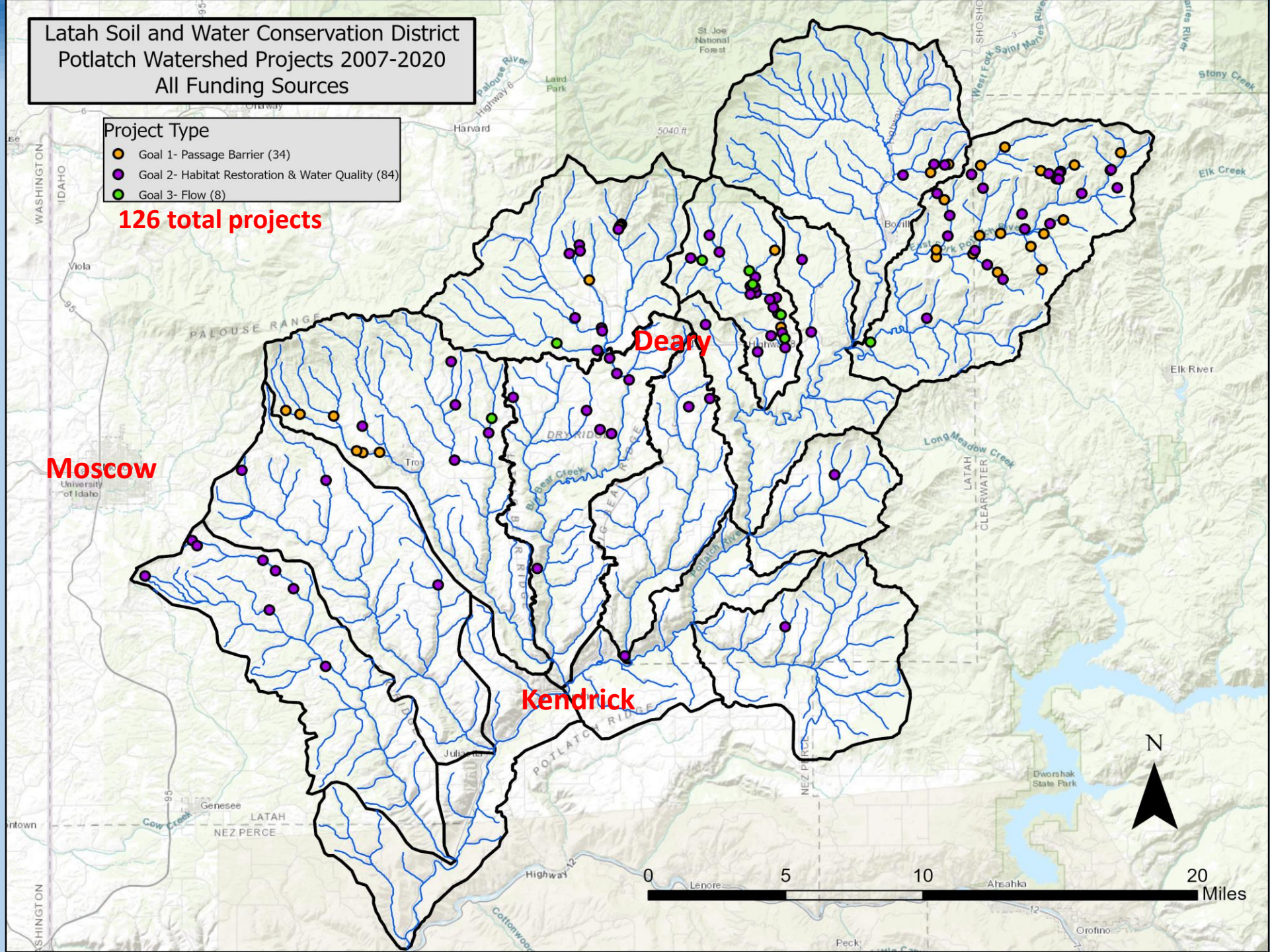


Schwartz Creek bridge

Latah Soil and Water Conservation District
Potlatch Watershed Projects 2007-2020
All Funding Sources

- Project Type
- Goal 1- Passage Barrier (34)
 - Goal 2- Habitat Restoration & Water Quality (84)
 - Goal 3- Flow (8)

126 total projects



Funding



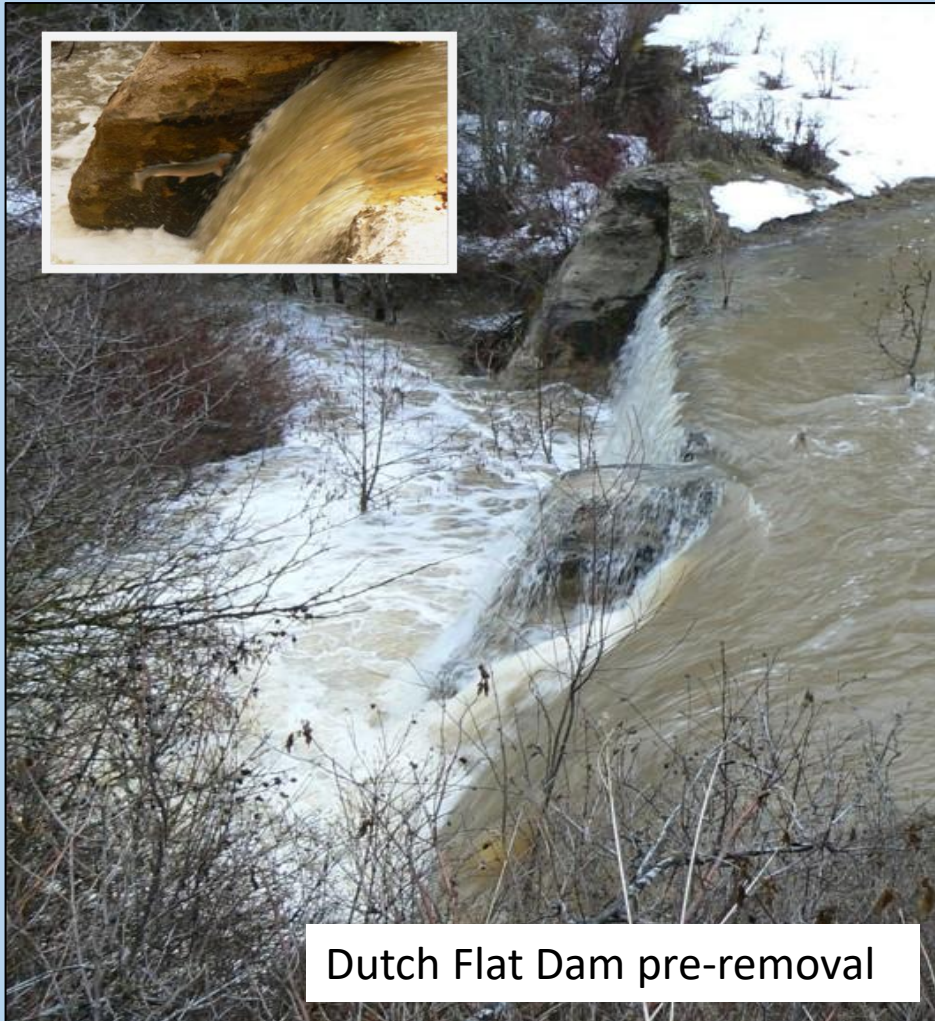
- Steelhead Habitat Projects
 - Private Landowners (in-kind)
 - Bonneville Power Administration
 - U.S. Fish and Wildlife Service
 - U.S. Forest Service
 - Idaho Department of Lands
 - Idaho Department of Environmental Quality
 - Idaho Office of Species Conservation
 - Idaho Soil and Water Conservation Commission
 - Idaho Transportation Department



Project Examples – Goal 1, Passage Barrier



Dutch Flat Dam (2013 project) – West Fork Little Bear Creek, opened 14 stream miles



Dutch Flat Dam pre-removal



Old Dam Site

Project Examples – Goal 2, Habitat

- Revegetation to address habitat complexity and sedimentation

Corduroy Creek, East Fork Potlatch River



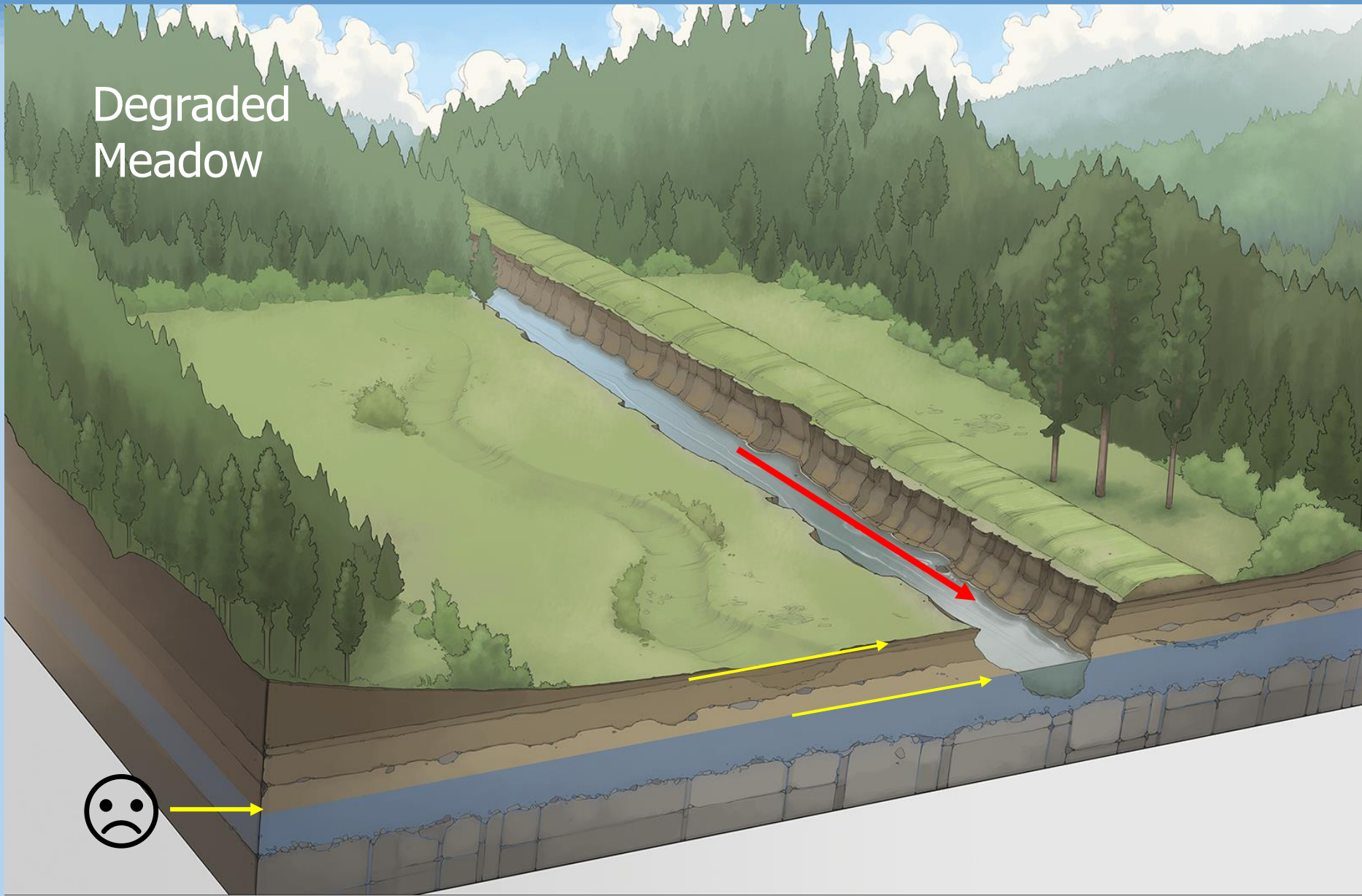
Project Examples – Goal 3, Flow (Meadow Restoration)



Two Mile Meadow, East Fork Potlatch River



Degraded Meadow



Problems:

It's **Deep**

- Water table depressed
- No hyporheic exchange
- Flood flows stay in channel

It's **Fast** – Energy regime is messed up

It's **Eroding** – Getting wider and deeper ²⁰

Potlatch River Meadow Conditions from Railroad Logging, Beaver Trapping, and other land use changes

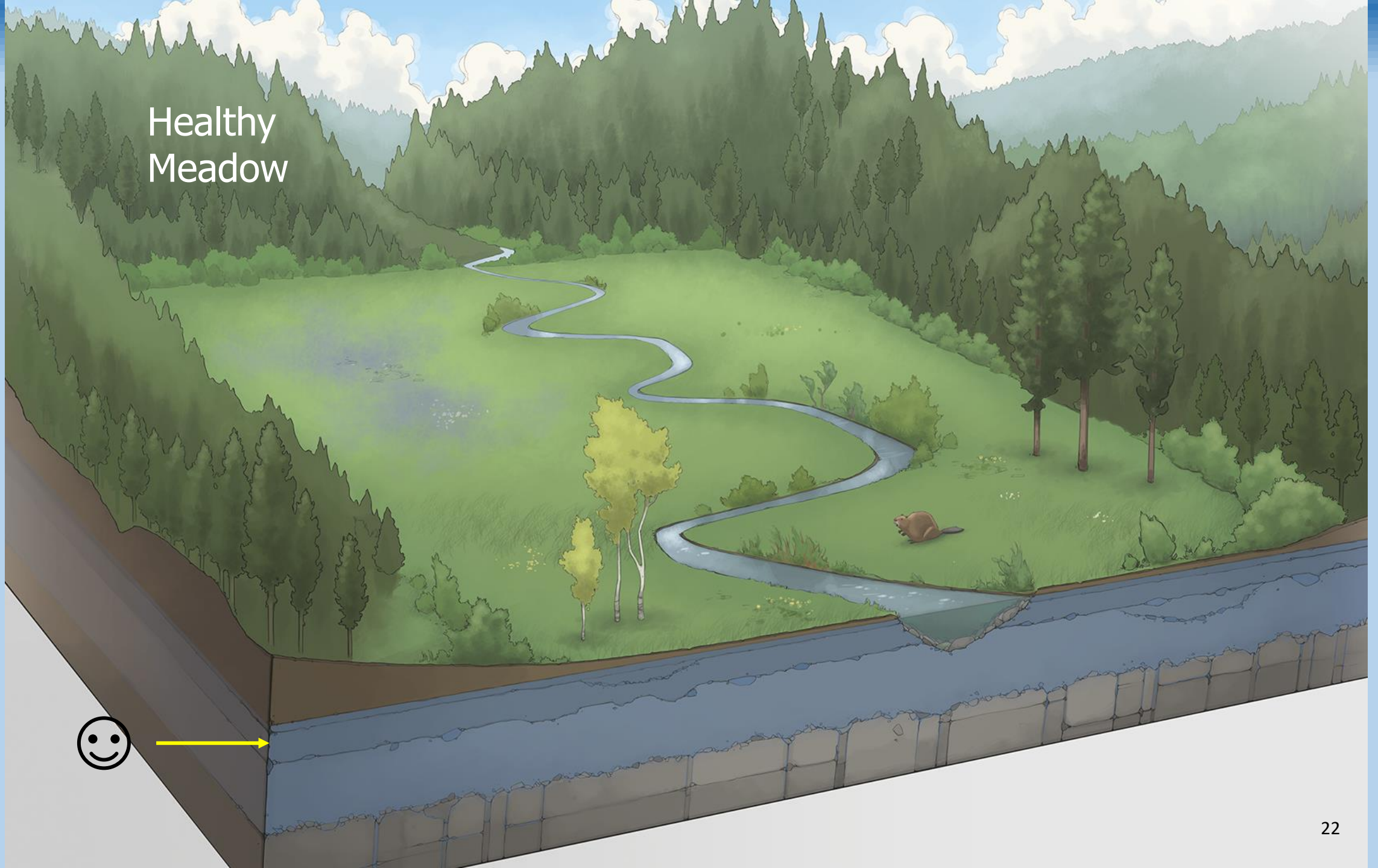
Stream and Meadow Restoration Racetrack, Corral Creek



Prior to Restoration

03.20.2006 10:00

Healthy Meadow



Healthy Meadow

Sinuuous channel, slower flows, riparian zone vegetation more attractive to beavers

Wet meadow supports diverse mosaic of habitats

Frequent inundation allows sediment deposition and attenuates peak flood flows

Riparian zone provides wood, leaf packs for channel complexity, food for macroinvertebrates

Flooding increases infiltration, percolation, and groundwater recharge

High water table supports wet meadow/wetland vegetation

High water table provides cool late-season base flows



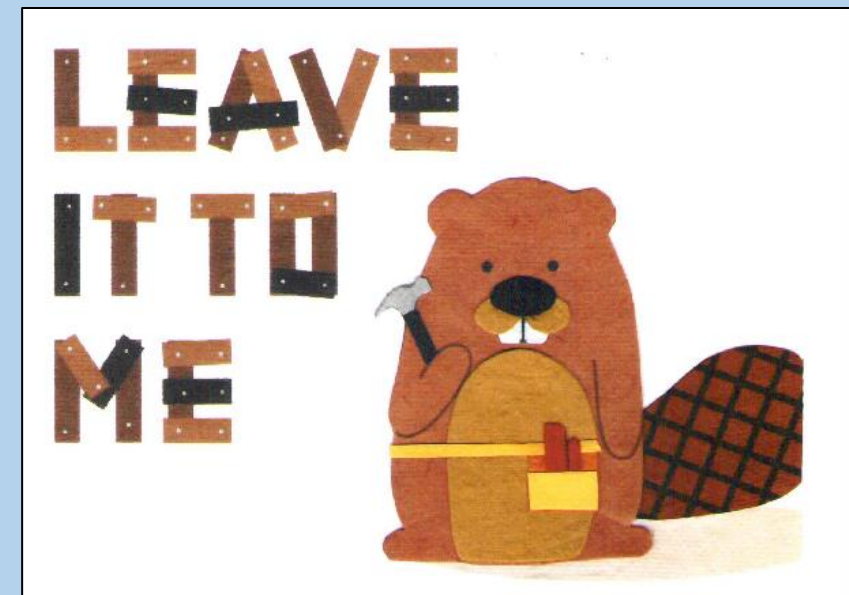
Stream and Meadow Restoration Racetrack, Corral Creek



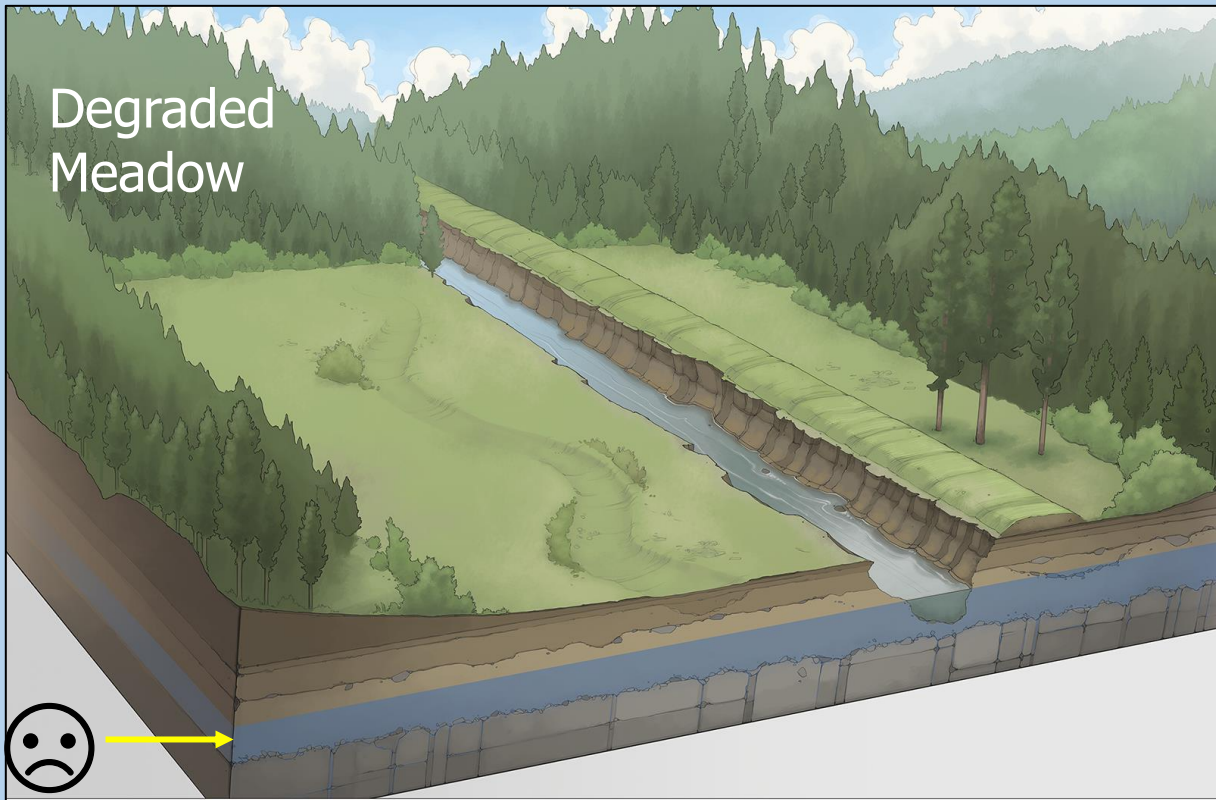
2/08/18

Process-Based Restoration

“Address root causes of degradation” by reestablishing “processes that create and sustain river and floodplain ecosystems” Beechie et al. 2010.



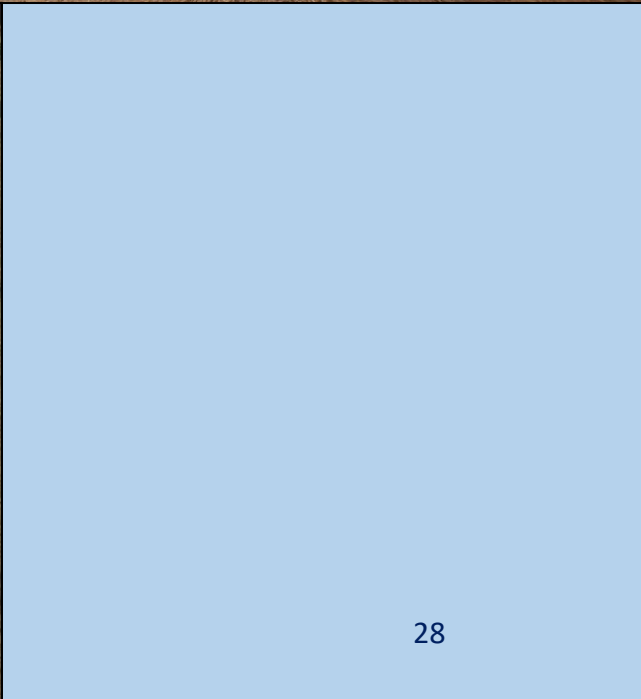
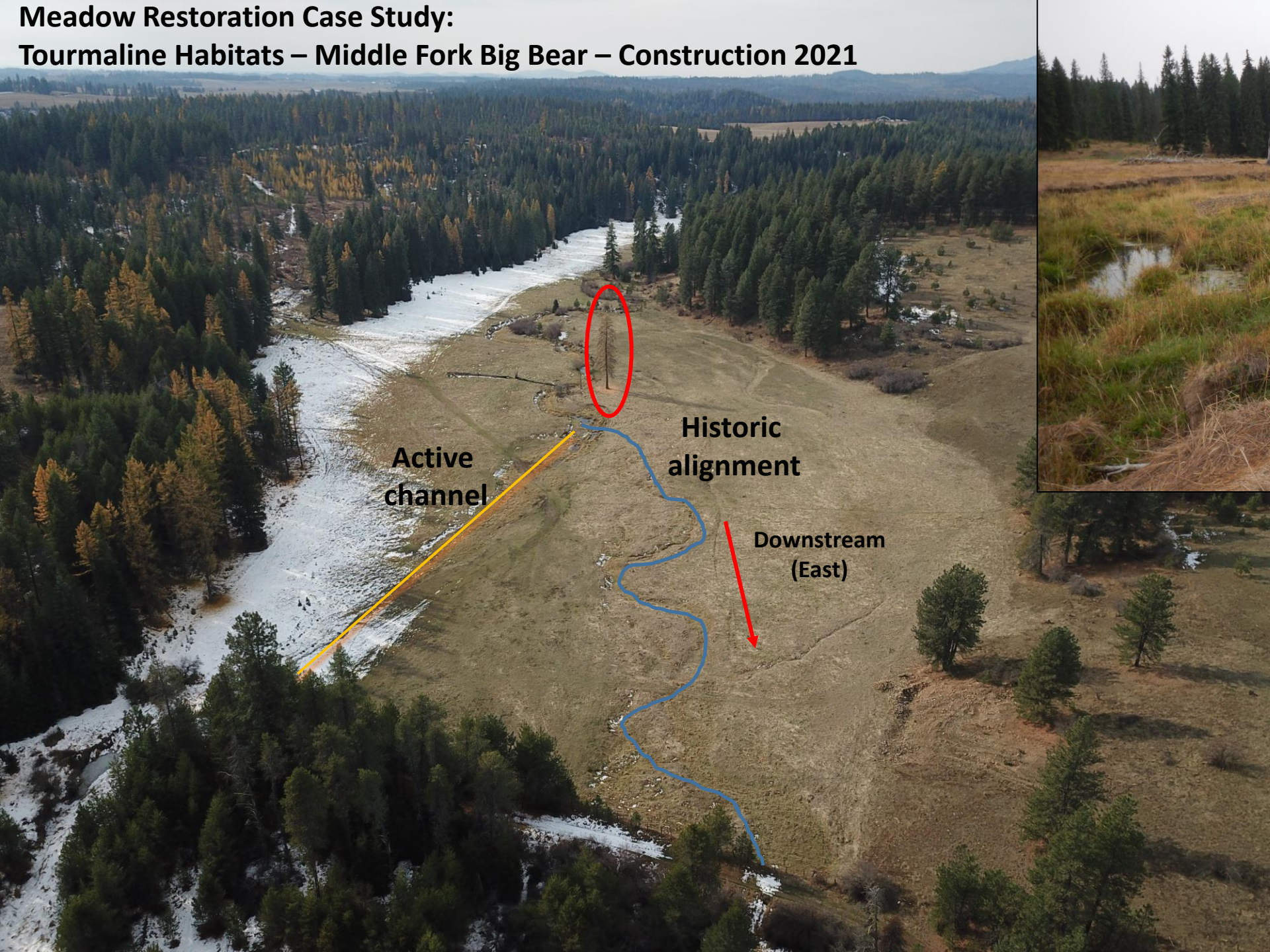
Process-Based Meadow Restoration Requires Active Approach + Time



Hard Hats Required



Meadow Restoration Case Study: Tourmaline Habitats – Middle Fork Big Bear – Construction 2021



Meadow Restoration Case Study: Tourmaline Habitats – Middle Fork Big Bear Creek, Construction 2021



Project Metrics:
Treated Area – 49 acres
Treated Stream length – 1.28 miles



April 28, 2021, pre-construction



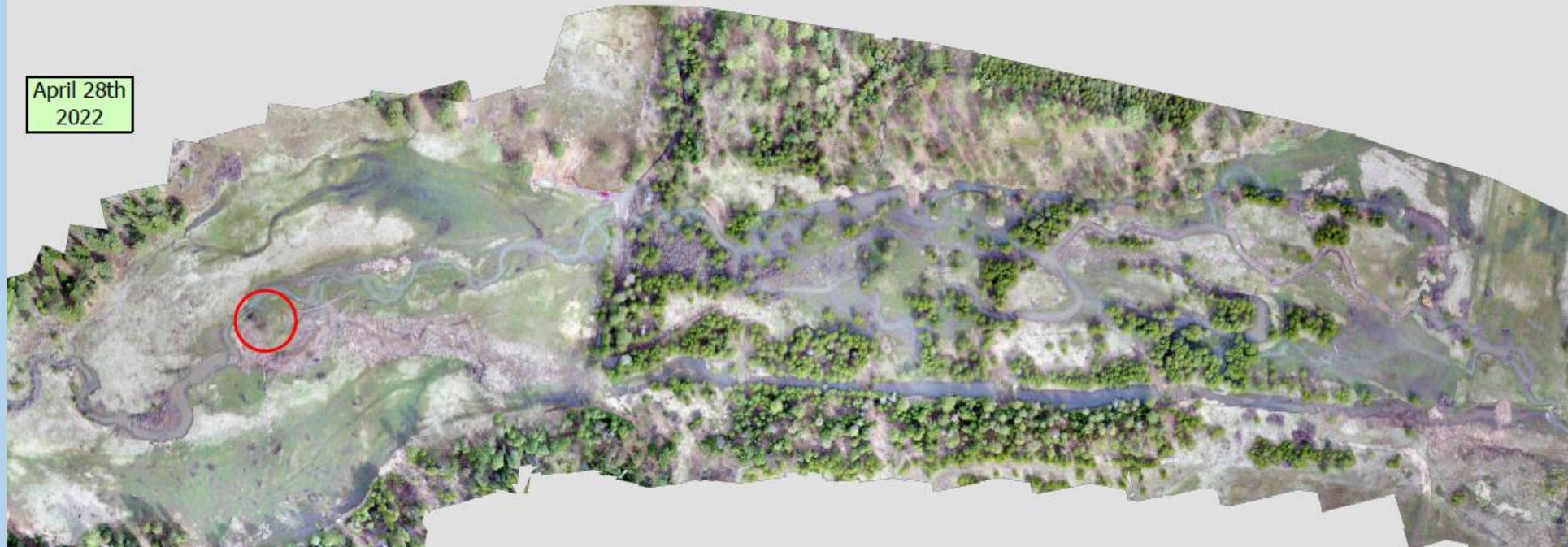
March 31, 2022, post-construction

Tourmaline Habitats Restoration Project Phase 2

April 28th
2021



April 28th
2022



Meadow Restoration Case Study:

Tourmaline Habitats – Middle Fork Big Bear Creek, Construction 2021

June 14, 2022



Goals achieved:

- Flow path altered
- Floodplain reconnected

Still to do:

- Add habitat complexity (more wood)
- Riparian vegetation

Beaver Dam Analogs – Low Tech Approach to Process Based Restoration



Revegetation Strategies using Native Plants



- Seeding – grasses and forbs
- Planting – trees, shrubs, forbs, grasses, sedges, rushes
- Protection – small and large-scale fencing
- Time Commitment – minimum 3 years, multiple seasons to spread the risk



Protection

- Slash to hold soil and provide safe sites for seed





McKetta Slash Pile, 2015

Protection

Exclosure Fencing

- Sturdy
- Reusable
- Easy to install
- Prevents browse and raking



Buck Fence Livestock Exclusion

- Wildlife friendly
- Limited lifespan
- Maintain with on-site materials
- Open Range



Photo: Parma Post and Pole

Protection



Take Home Messages

- Private landowners are essential
- Steelhead and land management = 😊
- Restore natural processes
- Need local project advocate
- Long-term commitments and patience required
- Revisit sites and adjust



Thank you

Brenda Erhardt
berhardt@latahswcd.org

