

Icicle Habitat Restoration and Protection

Icicle Work Group

December 3, 2015



Washington
Department of
**FISH and
WILDLIFE**



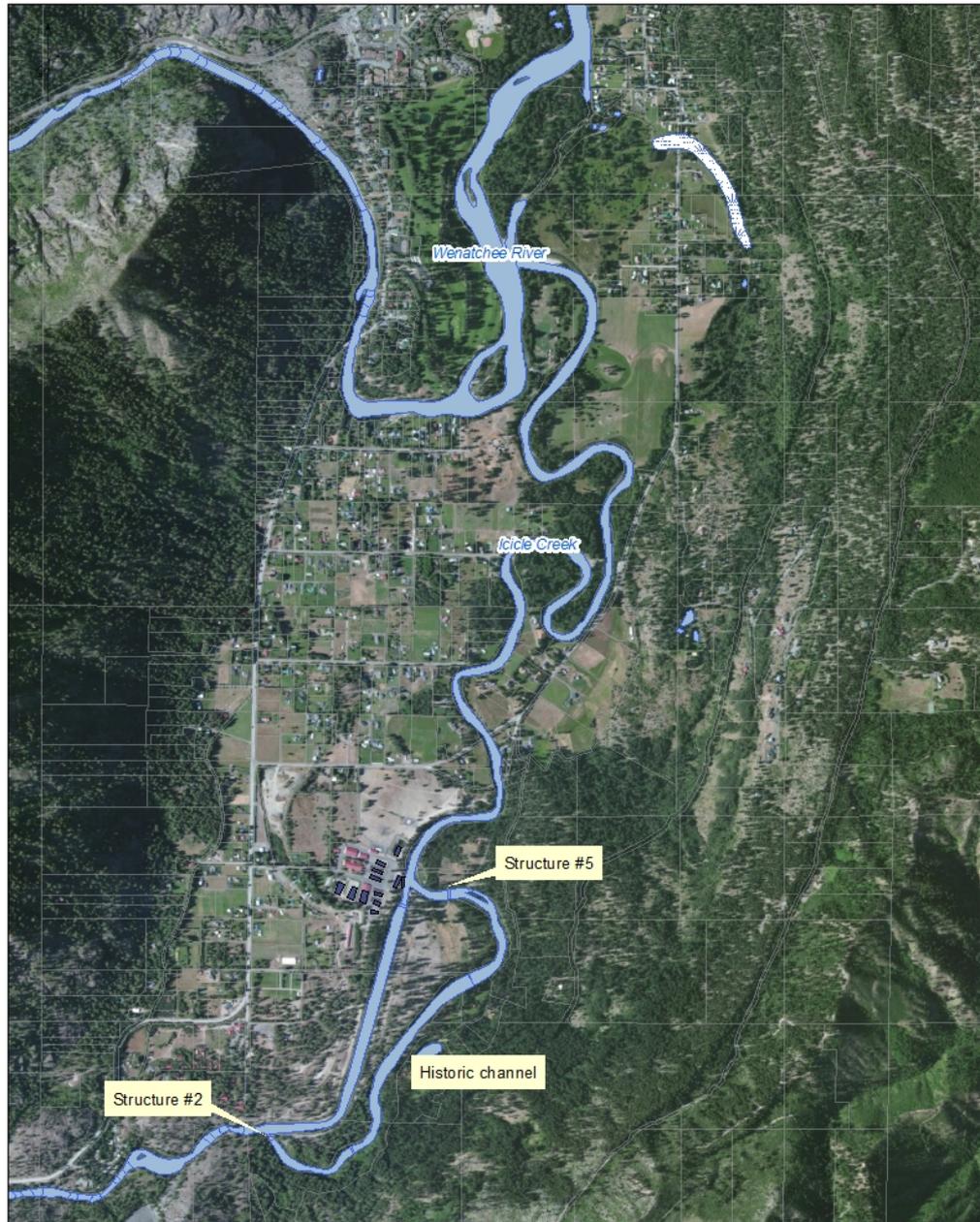
Partners



- ▶ **WDFW**- Provide technical assistance on existing fish use, limiting factors and project prioritization
- ▶ **Chelan-Douglas Land Trust**- Lead efforts on identifying and prioritizing land protection efforts
- ▶ **USFWS**- Provide technical assistance on overall project and leadership on hatchery lands projects
- ▶ **Chelan County NRD**- Coordinate work between partners, private landowners and IWG.

Overview

- ▶ Complete a Geomorphic Assessment of Lower Icicle (RM 0-4.5)
- ▶ Identify habitat restoration and protection opportunities in the reach
- ▶ Collect preliminary information for protection and development opportunities
- ▶ Utilize partner expertise in strategy.

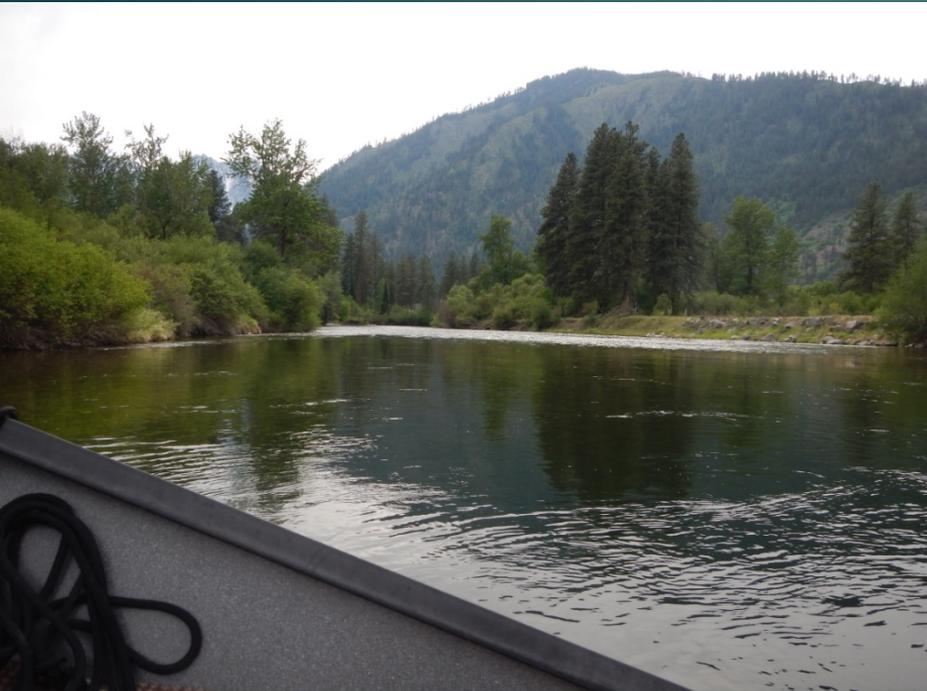


Project Area

Existing Conditions in Lower Icicle

- ▶ RM 0-1.3 large private parcels with high width to depth ratios
- ▶ RM 1.3-2.7 numerous private parcels armored banks
- ▶ RM 2.7-3.15 USFWS and Copper Notch owned armored banks
- ▶ RM 3.15-4.3 historic channel
- ▶ RM 3.2 structure 2
- ▶ RM 4.3 Structure 5, junction with mainstem

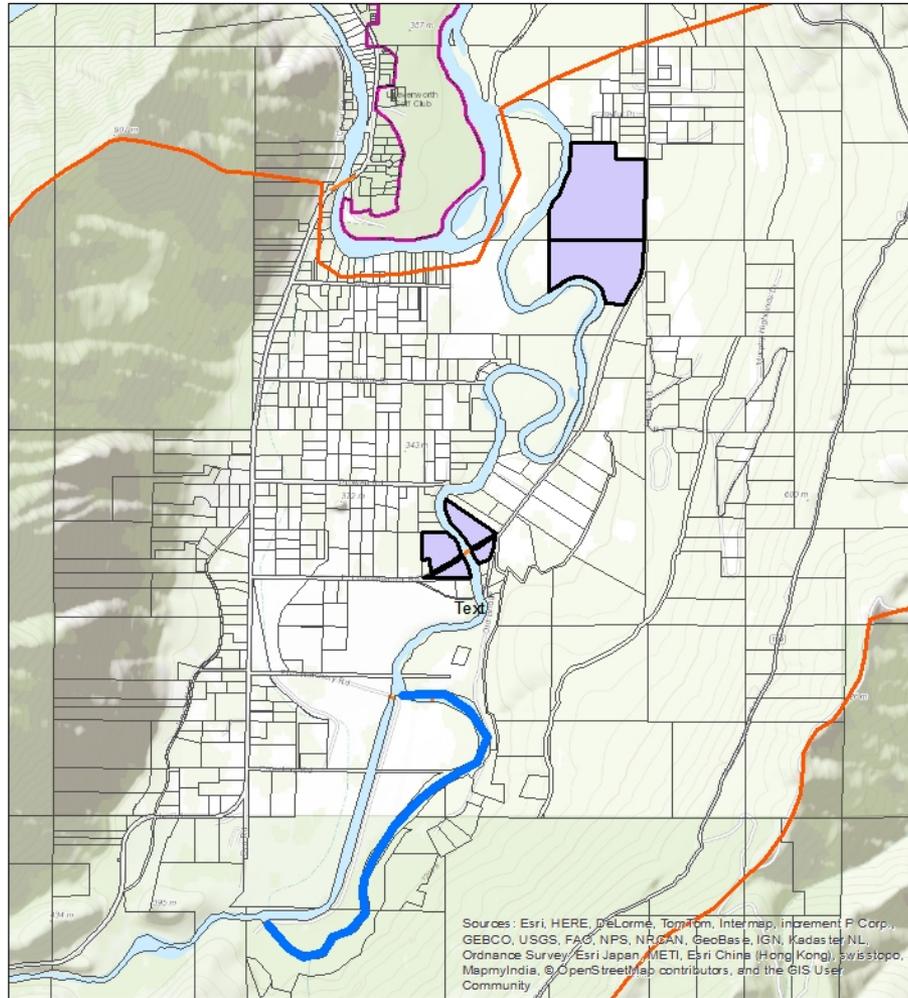
High width to depth and eroding banks



Projects to date in Lower Icicle

- ▶ Planting projects with private landowners
- ▶ Reconnection of historic channel as side channel habitat
- ▶ Acquisitions and conservation easements

Lower Icicle Existing Projects



0.3 0.15 0 0.3 Miles

Legend

-  Existing Project Locations
-  Icicle Watershed
-  Historic Channel Project



Existing Projects

Brush mattress on Fromm installed in 2010



Geomorphic Assessment

Purpose

- ▶ Assess and identify causal mechanisms of channel, habitat and water quality degradation from RM 0-4.3 (channel and floodplain)
- ▶ Recommend actions in specific locations to treat impairments
- ▶ Prioritize habitat protection and actions within reach.

Geomorphic Assessment and Project ID

- ▶ Document existing channel and floodplain processes
- ▶ Document effects associated with human infrastructure within floodplain (e.g. roads, riprap, homes)
- ▶ Document the key limiting factors and life history stages targeted by the project
- ▶ Identify specific goals and objectives for potential restoration elements
- ▶ Identify appropriate actions at specific locations.

Hydrologic and Hydraulic Assessment

- ▶ Develop a 1D HEC-RAS hydraulic model for the project reach
- ▶ The model will be run for the following flows, Low flow, 1yr, 2yr, 10 yr and 100 yr
- ▶ Base topography for existing conditions will be based on existing LiDAR data
- ▶ Hydrology for the model will be developed based on 2012 Icicle Creek modeling by Reclamation

Lower Icicle Fish Use

- ▶ One of best spawning reaches for coho salmon found in historic channel
- ▶ Upstream populations of bull trout move into this reach post-spawn and remain thru winter
- ▶ Major Spawning Area for threatened Upper Columbia River steelhead
- ▶ Minor Spawning Area for endangered Upper Columbia River spring-run chinook salmon
- ▶ Important juvenile rearing area for all salmonids and other fish species.
- ▶ Limited spawning below the hatchery but has huge potential.

**Chelan-Douglas Land Trust
Riparian Protection Plan**



Icicle Protection Chelan-Douglas Land Trust

CDLT Board-approved
strategy, June 2010.

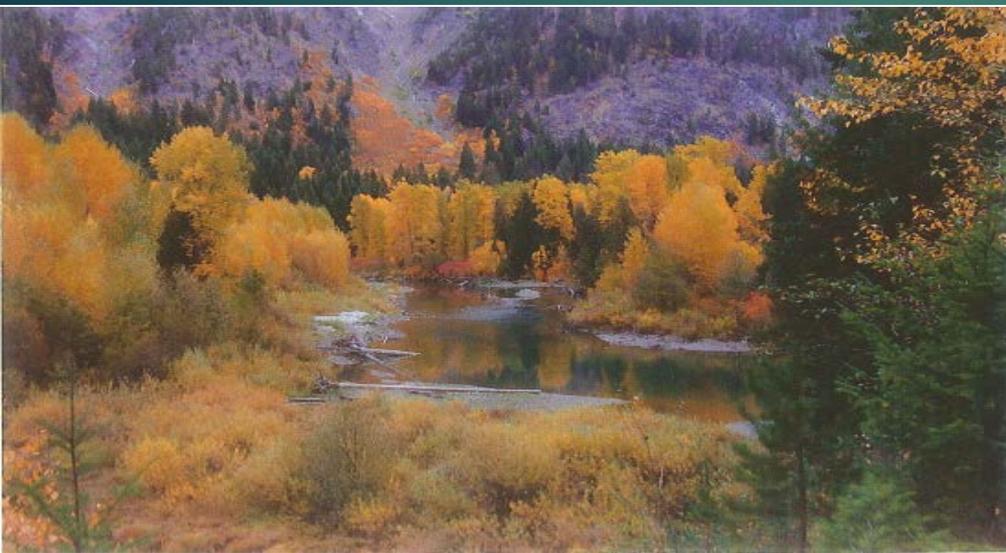
A BRIEF PROFILE OF THE LAND TRUST

- CONSERVATION BASED ON VOLUNTARY AGREEMENTS WITH WILLING LANDOWNERS
- 1,400 MEMBERS, PREDOMINANTLY IN NCW
- \$3.7 MILLION ENDOWMENT, WITH STRONG ANNUAL SUPPORT
- \$2.1 MILLION STEWARDSHIP FUND
- SEVEN-FOLD LEVERAGE OF MEMBER SUPPORT TO GRANTS
- 7,000 ACRES HELD IN FEE OR EASEMENT

Watershed-based Riparian Protection

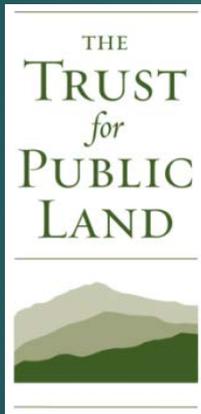
- Priority streams identified by Watershed Management Plans, Upper Columbia Biological Strategy
- 1,560 acres, 15.5 miles river bank White River, Nason Creek, Icicle, Wenatchee, Entiat River
- Specific properties identified using UCRTT priorities, Tributary and Reach Assessments, community outreach







Upper Wenatchee Community Lands Plan





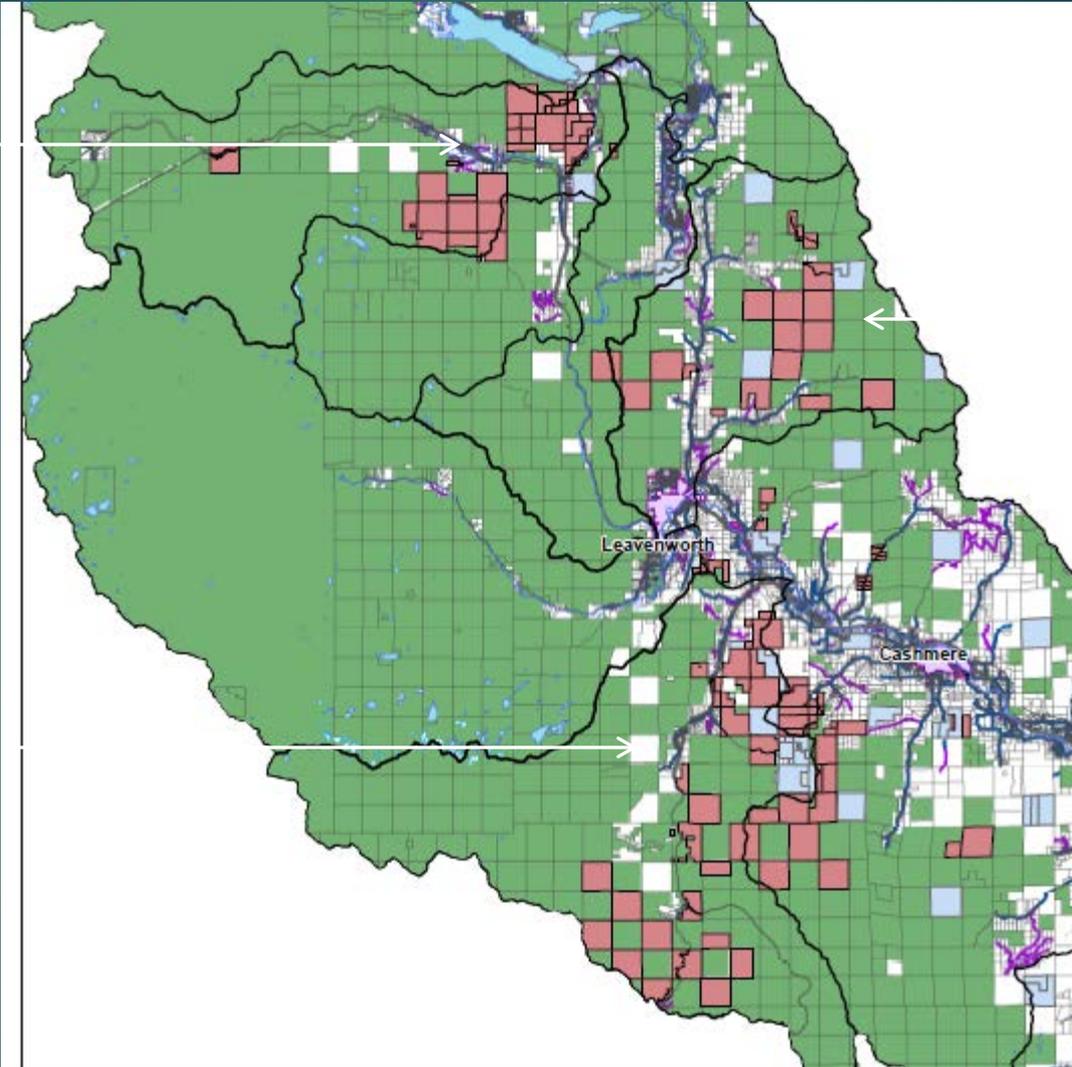
Why a Community Lands Plan?

- Land ownership and management impact communities' economies and quality of life
- Natural resources are at the center of our area's desirability as a place to live, work and recreate
- Area has a complex ownership pattern
- Large tracts of forest may be sold
- Being proactive allows us to shape our future



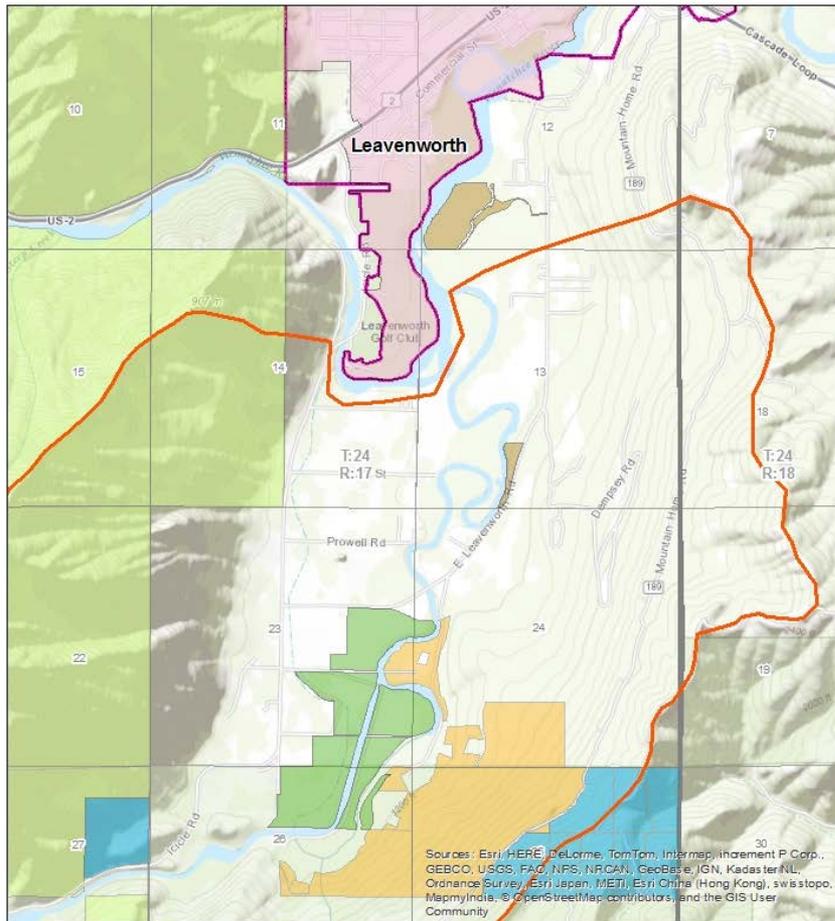
Nason
Sub-
Area

Peshastin/
Blewett Sub-
Area



Chumstick
Sub-Area

Lower Icicle Existing Protection



Legend

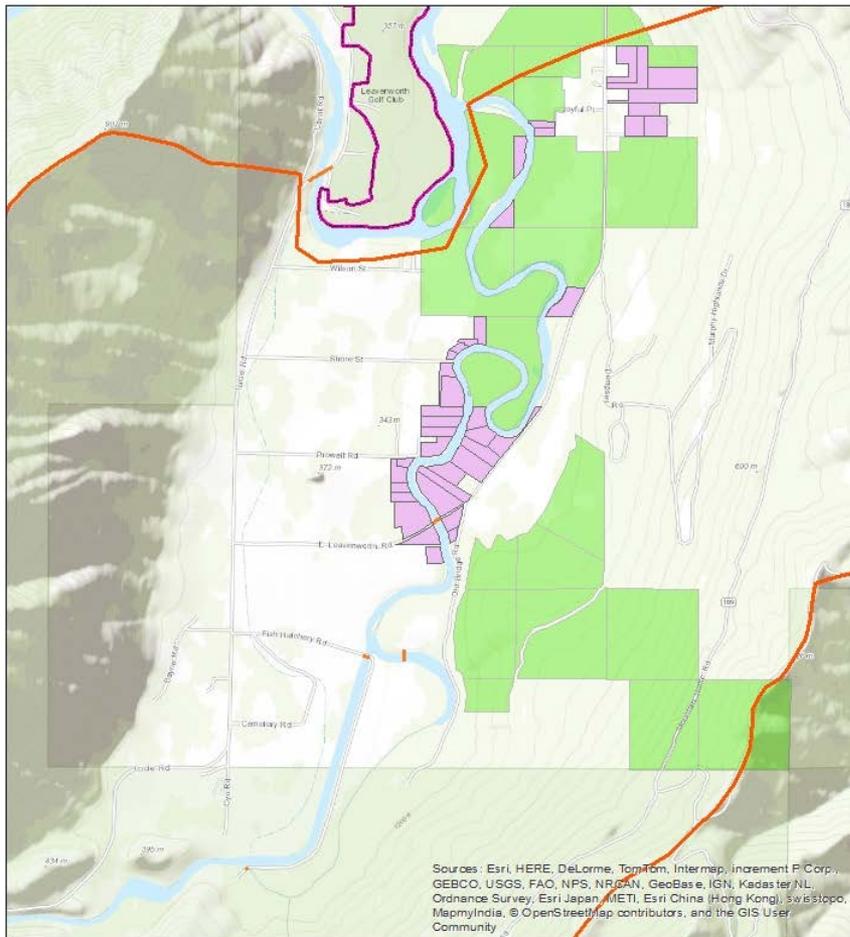
- Icicle Watershed
- Forest Service
- USFW
- CDLT
- WDFW
- Leavenworth City Limits
- CDLT CE

0.5 0.25 0 0.5 Miles



Existing
Protected
Lands

Lower Icicle Potential Protection



Legend

-  Icicle Watershed
-  Small Parcels_Potential Protection
-  Large Parcels Potential Protection

0.3 0.15 0 0.3 Miles



Potential Protection Opportunities

Next Steps



- ▶ Funding approval
- ▶ Collaborate with partners on a consultant selection team
- ▶ Include landowners and other stakeholders on project coordination
- ▶ Start field data collection in Spring 2016 for Geomorphic Assessment