CHEHALIS LEAD ENTITY PRESENTS

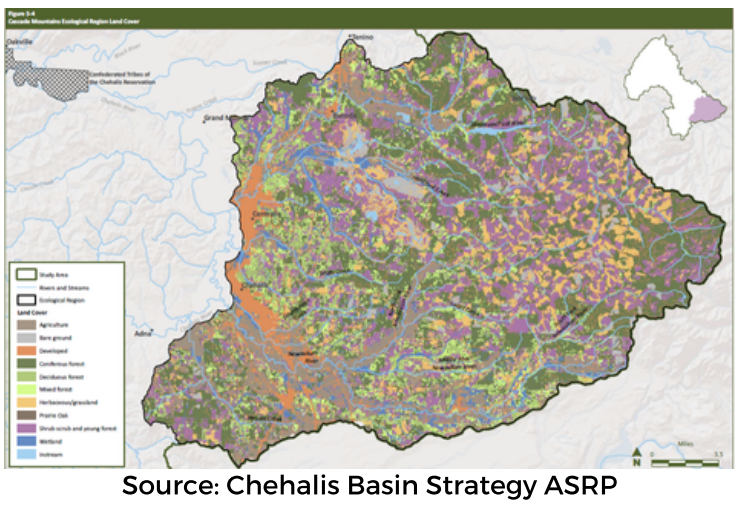
CASCADE MOUNTAINS ECOLOGICAL REGION

AN AQUATIC SPECIES RESTORATION PLAN TRANSLATION

CLICK ON THE PICTURES AND LINKS FOR MORE INFORMATION

STATISTICS FOR THIS REGION

- This ecological region encompasses 424 square miles and represents approximately 16% of the overall Chehalis Watershed
- The maximum elevation in the watershed is 3,800 feet at Huckleberry Mountain
- Average annual precipitation is 45 - 75 inches and can be higher in the upper mountain reaches
- 79% of the Cascade Mountains Ecological Region lies within Lewis County and 21% in Thurston County



Source: Chehalis Basin Strategy ASRP Phase 1, pg 91

CURRENT CONDITIONS

- Land cover is 29% coniferous forest, 8% mixed forest, 6% deciduous forest, 23% shrub, 9% grassland, 9% agriculture, 8% developed, 5% wetland, and small percentages of other cover
- Vast majority of the riparian areas have a lack of large woody debris due to the young age of trees present
- Water quality is impaired primarily for temperature, low dissolved oxygen, and bacteria (Ecology 2018)
- 75% - 90% of historical marsh and beaver pond habitat have been lost in the Skookumchuck and Newaukum sub-basins according to NOAA GLO mapping (Beechie 2018)
- Approximately 200 fish passage barriers were detected along with the Skookumchuck Dam

Cascade Mountains Current Snapshot

Condition of Watershed Processes:
Hydrology – moderately impaired
Floodplain connectivity – impaired
Riparian condition – impaired
Water quality – impaired

Restoration Potential: High

Protection Potential: Moderate

Geographic Spatial Units: Newaukum River, North Fork Newaukum River, South Fork Newaukum River, Middle Fork Newaukum River, Skookumchuck River, Hanaford Creek, Salzer Creek, and Stearns Creek

Source: Chehalis Basin Strategy ASRP Phase 1, pg 90

IMPORTANCE TO WILDLIFE

- This region is currently the stronghold for spring-run Chinook salmon and fall-run Chinook salmon, coho salmon; steelhead are also present
- Bird indicator species present include great blue heron and wood duck
- Other non-salmon indicator species present in this region include coastal tailed frog, Van Dyke's salamander, northern red-legged frog, North American beaver, Olympic mudminnow, largescale sucker, mountain whitefish, Pacific lamprey, riffle and reticulate sculpin, speckled dace, and Western ridged mussel
- Skookumchuck Hatchery releases coho salmon and steelhead

Coastal Tailed Frog, Source: U.S.FWS

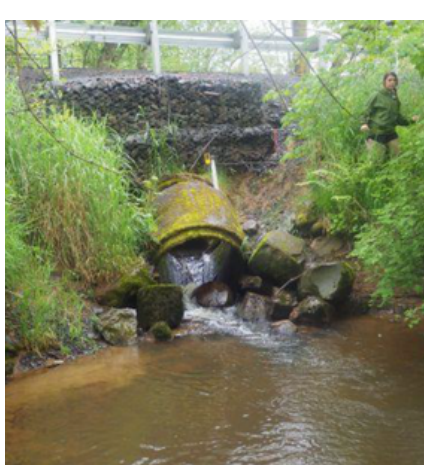
Many freshwater mussels live in the Cascade Mountains Ecological Region including this Western Ridged Mussel, Source: The Xerces Society

LIMITING FACTORS

Salmon and other indicator species struggle with:

- High water temperatures
- Reduced quantity and quality of instream habitats
- Low habitat diversity (lack of side channels, large wood, floodplain habitats, and beaver ponds)
- Flows (both low and high flows)
- Poor riparian conditions
- Fish passage barriers
- Fine sediment

For additional information click HERE



WDFW Fish Passage Viewer, View Report HERE

CREATED BY GRAYS HARBOR STREAM TEAM

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CASCADE MOUNTAINS ECOLOGICAL REGION

ECOSYSTEM PROTECTIONS

- Protect this ecological region because of it is prime spring-run Chinook salmon habitat and its high vulnerability to increasing development
- Protect headwater lakes in the Skookumchuck River sub-basin for unique amphibian assemblages and species diversity
- Protect cold water habitats in all forks of the Newaukum River (and key tributaries)
- Protect overwintering habitats in the lower North Fork and South Fork Newaukum rivers
- Protect cold water inputs from deep pools and springs

RESTORATION REQUIRED

- Install stable functional wood structures and human made beaver dam throughout the Skookumchuck and Newaukum Rivers to trap sediment and smaller wood, creating stable spawning and incubation habitat and cool-water pools
- Strategically select wet prairie habitats, where larger, contiguous areas of the habitat could be restored
- Restore riparian buffers and instream wood for shading, channel complexity, and floodplain connectivity to improve summer rearing and holding habitat for salmonids
- Reconnect floodplains where feasible, this would also promote groundwater aquifer recharge and stabilize river flows
- Remove fish passage barriers where good quality habitat exists upstream
- Evaluate the potential benefits and costs of Skookumchuck Dam removal or operational changes to benefit aquatic species

Beaver Dam Analog, Source: Beaver Institute

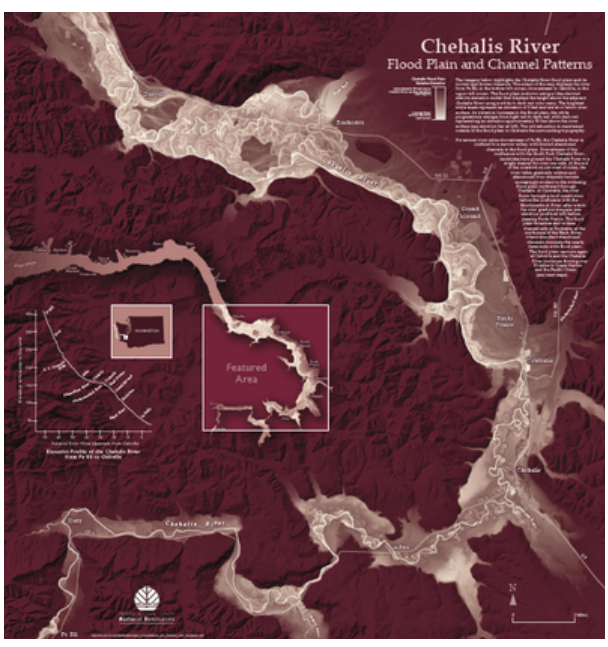
Healthy Riparian Zone, Source: USDA Forest Service

WHAT ARE THE BENEFITS OF HAVING A CONNECTED FLOODPLAIN?

A floodplain is the area of land that streatches from the edge of the river bank to the outer edges of the river valley

- **Slow and store flood water:** During flooding, water can spread out across the floodplain and slow down
- **Improve water quality:** Floodplains act as natural filters, absorbing pollution, harmful chemicals, and protect drinking water sources
- **Safeguard people and property:** When a river is connected to it's floodplain, it can hold floodwaters when they overflow the rivers banks, protecting homes and businesses from flood damage
- **Creates fertile soil for crops:** Rivers deposit nutrient rich sediments in their floodplains, making them very productive for growing crops
- **Nurturing life:** Floodplains are highly productive and provide essential habitat and food for many wildlife species. Fish species use this habitat as a nursery and it is key to the web of life
- **Providing recreation:** The floodplain is perfect for hiking, paddling, biking, swimming, and "connecting with nature"
- **Recharging groundwater:** As the floodplain does it's job by absorbing water and reducing flooding, it is also allowing this water to seep into the ground and recharge groundwater, preventing low summer flows

A connected floodplain, Source: WDFW



Chehalis River Flood Plain and Historical Channel Patterns, Source: WA State DNR. for more information click HERE

CHECK OUT ADDITIONAL RESOURCES

- Chehalis Lead Entity: http://www.chehalisleadentity.org/
- Chehalis Basin Partnership: https://chehalisbasinpartnership.org/
- Chehalis Basin Strategy: https://chehalisbasinstrategy.com/asrp/

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