

Olympic Mountains Ecological Region Overview

What are important/unique features and functions within this Ecological Region?

- This Ecological Region is very productive for multiple salmonid species (steelhead and chum, coho, and fall Chinook salmon) and lamprey. The East Fork Satsop River is particularly productive for chum and coho salmon.
- Glacial outwash gravel deposits with a large network of groundwater-fed streams in the East Fork Satsop River and tributaries is unique among all the Ecological Regions.
- Seasonally dry channels have extensive seasonal spawning use.
- This is one of only two Ecological Regions that has significant old growth forest.
- The West Fork Satsop and Wynoochee systems have higher elevation headwaters with rainfall-dominated hydrology and high sediment supply, characterized by active channel migration, major avulsions, and a lack of stable logjams.
- There are significant hatchery influences on wild fish, competition, genetics, predation, disease, and fish passage.
- There is more habitat for stream- and riparian-associated amphibians than any other Ecological Region.
- There are significant areas of managed forest.

What is working? What is broken?

- The Ecological Region is lacking wood nearly everywhere.
- Substantial channel length lacks stable gravel.
- The East Fork Satsop River is highly productive and includes cold water and better conditions than other areas.
- Big rivers have very active channel migration that creates substantial risk for agriculture and residential land uses.
- There are invasive exotic plant species including reed canarygrass. The lower Satsop River, in particular, has extensive areas of knotweed.
- Wynoochee Dam affects substrate (lack of gravels) and wood loading downstream of the dam and inundated areas that may have been highly productive Chinook salmon spawning habitat. Chinook salmon are not transported above the dam.
- Lower watersheds include poor riparian conditions, excessive channel widths, and a lack of shade.
- Tributary channels are affected by incision.

What are your thoughts about some of the protection and restoration strategies and actions we feel are important for this Ecological Region?

- Protect East Fork Satsop River headwater wetlands and springs, which are likely to be resilient to climate change effects on stream temperature, making this area a refuge.
- Develop a strategy to address knotweed.
- Protect intact riparian areas and restore degraded riparian areas.
- Protect the highly productive spawning reach above 7400 bridge on the Wynoochee River.
- The Satsop River has significant harvest and hatchery activities; any restoration actions will have to consider these activities.
- Install stable large wood on mainstem rivers and tributaries. Promote formation of stable forested islands.
- Explore removal of Wynoochee Dam or changed operations to maximize natural processes.
- Introduce sediment and wood downstream of Wynoochee Dam.
- Protect and restore channel migration areas on lower rivers. Provide incentives to landowners to move structures out of the floodplain.
- Conduct demonstration projects for landowners to show the stability of engineered log jams and the role of wood and riparian forest in limiting wood deposition on farm fields.



These potential Early Action reaches on the Satsop and Wynoochee Rivers have substantial channel migration and bank erosion occurring.



This seasonally dry channel, a tributary to the East Fork Satsop River, provides substantial chum and coho habitat when wetted. Even ephemeral streams can add to the productivity of the system and should be protected.



This structure on Bingham Creek has a fish ladder and smolt trap that have provided approximately 40 years of wild coho life cycle monitoring information.



The Upper East Fork Satsop River includes headwater wetlands and cold water springs that are likely to be resilient to climate change effects on stream temperature, making this area a refuge and an important protection priority.



A key Chinook salmon spawning reach is downstream of Wynoochee Dam, in managed forest. No Chinook salmon are passed upstream of the dam, though areas upstream historically may have provided highly productive spawning habitat. The dam has effects on substrate and wood loading downstream (lack of gravels downstream of dam); this area could be restored and enhanced.