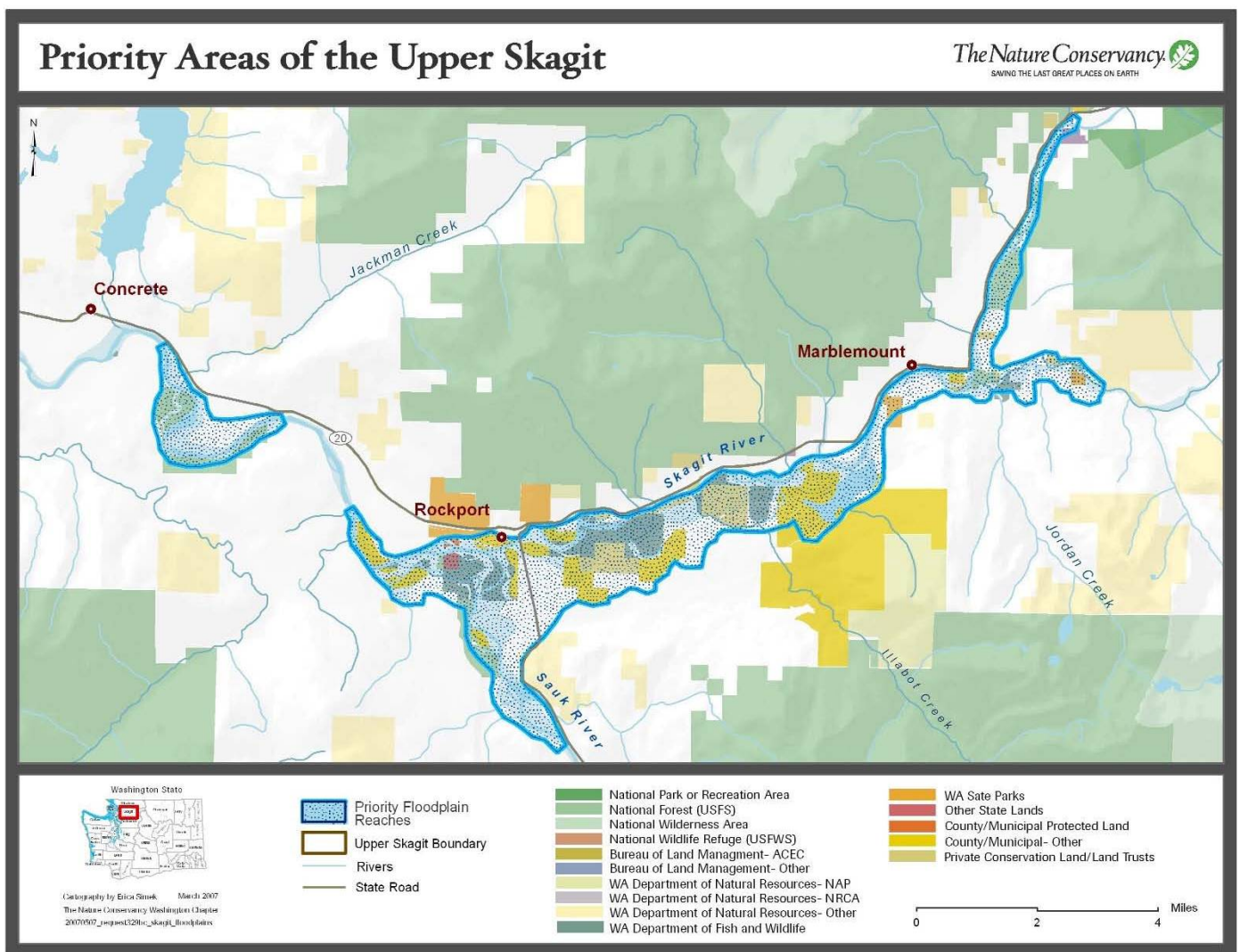


# Floodplain Restoration: a Top Priority for Salmon Recovery

By Neil Vargas

You may have noticed over the last several years that more and more of SFEG's volunteer planting events are being held on properties located in the floodplain of the Skagit River. According to the Skagit Chinook Recovery Plan, the floodplain of the Skagit River and its major tributaries (Sauk, Suiattle and Cascade Rivers) are a high priority area for protection and restoration actions in order to recover critical habitat for threatened Chinook salmon. There is a coordinated effort to protect floodplain habitat in the Skagit Watershed. Many floodplain parcels have been permanently protected through public and private ownership by The Nature Conservancy, US Forest Service, Seattle City Light, Skagit Land Trust and others. Two Inventories and Assessments were completed by the Skagit Land Trust and The Nature Conservancy in 2003 to prioritize floodplain land for permanent protection in the Middle and Upper Skagit. However, many floodplain parcels are in need of restoration actions, not just protection, in order to provide quality habitat to salmonids.



SFEG is working with these land protection partners to conduct restoration efforts on protected lands and assist with the larger effort of protecting and restoring floodplain habitat throughout the Skagit watershed.

The sites we are working on are located in dynamic areas of the Skagit River Floodplain near major tributary junctions (Jackman Creek, Sauk River, Diobsud Creek and Cascade River) which are known to be hotspots for salmon and biological diversity. At the Larsen Memorial property, SFEG restoration technicians removed three 24-inch diameter metal culverts and associated fill from three locations along an abandoned road on the site. These efforts reconnect off-channel habitat in the channel migration zone of the Skagit River. Projects also include removal of invasive species, large woody debris placement, and planting native species. Up to this point in the fall planting season, volunteers and staff have planted over 6,000 native trees and shrubs on seven sites.

According to the Skagit Chinook Recovery Plan, floodplains provide important freshwater habitat for all Chinook salmon fry, but more expressly for those life strategies that depend on freshwater habitat for extended rearing such as parr migrants and yearlings. Adult Chinook spawn in the mainstem of the Skagit, Sauk, Suiattle and Cascade Rivers. The Upper Skagit River contains the highest density of Chinook spawning areas in the entire Skagit watershed. The majority of the Chinook, pink and chum salmon that spawn in the Skagit River system spawn in the Upper Skagit area (from the Sauk River confluence to the dams operated by Seattle City Light). The off-channel sloughs and wetlands located within the floodplains provide critical rearing habitat for Chinook and coho. Unlike our planting events along small streams, you often can't even see the river from some of these floodplain sites. Although the benefit of planting these trees for salmon and the riverine ecology may seem a bit murky, it becomes clearer when you consider the functions that a healthy floodplain performs.

A naturally functioning floodplain:

- \* provides shade and moderates stream temperature, increasing the capacity of the water to carry dissolved oxygen
- \* sequesters carbon in native vegetation and organic material in soils
- \* provides food and habitat for numerous species that utilize riparian areas
- \* improves water quality through sediment and pollutant filtration during rain and flood events
- \* retains water during heavy rain events, slowly releasing moisture and buffering flood levels
- \* provides a source of woody debris, adding to habitat complexity and food/nutrient density in the aquatic environment
- \* slows over-bank water velocity, reducing erosion and shoreline damage during flood events

Simply put, cooler water temperatures allow salmon to breathe more easily, while decreasing sedimentation and pollutants increase survival of salmonids. Woody debris in and along the creeks provides more locations for salmonids to rest or hide from predators, and a source of insects and food from the decay of the vegetation.

The floodplain could also be described as the channel migration zone. The channel migration zone is the dynamic lowland area in which the river moves from year to year with high water events. It is important to have this whole migration zone (or floodplain) functioning as good habitat, as in any given year the channel could occupy any part of this lowland area as the river changes course during high water events. Although floods are often damaging to human infrastructure, floods serve an important role in creating and maintaining floodplain structures such as pools, islands, bars, oxbows, side channels, and off-channel ponds. Flooding events act as a connection between the river and floodplain allowing for the exchange of large woody debris, sediment, and nutrients. We are once again moving into the season where these connections become most clear.