Black Hills Ecological Region Overview

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

- This Ecological Region is composed of relatively short, woodland tributaries flowing south from the Black Hills into the Chehalis River. The lower section (less than half a mile) of these tributaries is often slough-like with low gradient, slow/no flow habitat that contrasts with the riffle/pool or plane bed habitat observed throughout much of the rest of the streams.
- Several of the streams (such as Porter and Cedar creeks) are within the Capitol State Forest managed by WDNR, which offers protection of stream and riparian habitat. Habitat Conservation Plans developed for the managed forests retain riparian buffers that are essential for shading and wood delivery to stream channels.
- Underlying glacial geology can supply spawning gravel, and these creeks are an important cold-water inflow to the Chehalis River.
- Management considerations include the planting of inland trout (exotic to Washington trout genetics) into headwater lakes. In many cases, WDFW removed fish screens that blocked passage into these lakes in the early 1990s, but some fish screens remain. The screens retain inland trout within the lake for fishing, reduce interactions with rainbow trout/steelhead, and block access to habitat for anadromous fishes (i.e., coho salmon) that use headwater streams for spawning and rearing.

What is working? What is broken?

- Widespread loss of stable instream wood has resulted in extensive conversion of pool-riffle channels to plane bed channels. This has resulted in loss of many miles of spawning habitat and hundreds of pools, as well as floodplain disconnection and loss of floodplain habitat-forming processes.
- Several of the streams (such as Vance, Newman, and McDonald creeks) are urbanized and have been heavily impacted by anthropogenic factors. A substantial investment in restoration at McDonald Creek generated a lot of community excitement, but has been impacted by the development of a hospital immediately adjacent to the stream channel.
- The existing riparian canopy provides good shading for smaller tributaries, and riparian forest within WDNR lands is better than most—species composition leans heavily to red alder, but does provide shade.
- The lower portions of Cedar, Mox Chehalis, and Coquallum creeks provide temperature refugia for spring Chinook salmon. The source of this cooler water is not understood.
- Substantial channel length lacks stable gravel.
- There are invasive exotic plant species including reed canarygrass.

Larger streams such as Porter and Cedar creeks—with areas of forested riparian and relatively intact habitat—could be easily enhanced with wood and conifer plantings to increase habitat potential.

Streams within the Capital State Forest could be easily restored by adding wood.

Mox Chehalis Creek arises in the Black Hills and is one of several low-gradient streams with abundant spawning gravel and forested areas. The lower reaches potentially provide temperature refugia for spring Chinook salmon and overwintering habitat for coho salmon that could be protected and enhanced.

Mox Chehalis Creek and other Black Hills streams could be enhanced for off-channel and beaver pond habitat for coho salmon.

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

- Continue to enlarge culverts to increase anadromous fish access to habitat.
- Identify potential lake areas where genetic mixing issues may occur between resident trout releases and wild steelhead, and reduce the risks. Evaluate impacts and management needs.
- Add wood to improve instream habitat with respect to channel diversity, gravel recruitment, and cover. The urbanized landscape in some lowland reaches is a constraining factor that may limit the benefits of instream wood in some areas; this constraint should be considered when investing in restoration projects.
- Place extensive stable instream wood to capture alluvium (finer gravel), increase variations in bed textures, increase the number of pools and cover, raise streambeds, and increase floodplain connectivity. Large-scale loss of gravel in many Black Hills channels is a substantial restoration opportunity.
- Quickly restore Porter, Cedar, and Sherman creeks with large wood augmentation. These actions could be completed through a rapid-action projects category.