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Eye on the Environment

### **Ridges, Benches & Saddles – Fascinating Topography**

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The Swan Valley's rich and magnificent network of lakes, ponds, wetlands and streams gets plenty of attention, and well it should. The water and associated streamside and wetland vegetation are why we have such abundant wildlife in the Swan Valley and so many places to fish, swim, boat and watch birds. Yet the complex of ridges, benches, saddles, banks and connected landforms interweaving the watershed is of equal value.

We're blessed with undulating ground; almost none of the land in the Swan Valley is flat. To appreciate it you have to get off the highway and out of your vehicle. Highway 83 follows the path of least resistance on the flattest land we have. On the slopes, the forest roads are engineered for a gradual gradient by following the contours. From a car it's easy to miss our fascinating topography.

Ridges, humps and banks create "aspect" and "micro-climates," which allow for diversity of plant and animal species on the valley floor, as well as on the slopes of the Mission Mountains and Swan Range. Consider the cool, damp north facing side-hills where Engelmann spruce, subalpine fir and grand fir thrive in dense stands. That's where the Queen's cup bead lily is found in summer.

Hike just a few hundred yards to the south-facing side of the same ridge and you may find ceanothus or elk sedge growing on open slopes beneath Douglas-fir and ponderosa pine, a good place for wildlife to browse and people to warm up in the sun.

If you are bushwhacking through the valley bottom, the ridges can offer easier travel. Ridges provide vantage points, allowing wildlife to dive off either side for a speedy getaway when predators or humans approach. Following the ridgelines on well-worn wildlife trails, I like to count beds of deer and elk.

Ridge tops usually lack tall trees. Wind topples them more frequently than the lowland giants. The soils are thin and likely to be rocky. Fire plays a role. Flames race up steep side-hills, carried by the wind. The rising hot air preheats the fuel above. When fire reaches the top, swirling air can slow the flames, giving them time to consume the ridge-top fuel.

Saddles, canyons and ridges influence how a fire burns. Saddles and narrow canyons create high winds that can run counter to the prevailing wind and funnel the fire, increasing flame speed. Fires will jump narrow canyons when flying embers ignite fuels on the other side. Fires can also back down canyon slopes and race up the opposite side. These topographical features create hazards for firefighters. But they add habitat diversity to a forest landscape.

Saddles and benches are favored by on-the-move elk, bears, lions, wolves and other wide-ranging wildlife. Saddles of course are easier to cross than the tops of peaks and high ridges. Benches, areas of flatter-ground on the sides of slopes, are preferred travel ways. Mid-way up the Swan Range, on the way to lower Rumble

Lake, hikers can relieve their burning calves on a couple of forested benches, before turning east again and entering the Rumble Creek canyon.

I like to ski the ridges that snake the valley bottom. These are the landscape features, made of glacial till—silt, gravel and rocks— left behind after the last glaciers retreated, about 11,000 years ago. I look for open slopes where I can make two or three turns. Then I traverse back up for another try, a little farther down the ridge.

I don't know anyone else who bothers to ski the short side-hills of our valley bottom. But I get a tiny moment of thrill each time I negotiate a turn over a snow covered stump or between saplings in a regenerating stand.

In the higher elevations, the ridges are the safest lines of travel. Avalanches might sheer off precipitous slopes on either side, but are less likely to release on the ridgelines themselves. Wind scours the snow off the tops and deposits it on the downwind side, creating heavy loads that can be triggered by skiers, snowmobiles and mountain goats. The sunny sides tend to release later in winter when melting snow "greases" the under layers of ice.

The avalanche path on west and north facing slopes are favored in spring and summer by bears that forage the lush vegetation growing there. Grizzlies like to den high on north facing slopes.

High banks above the Swan River and our larger creeks can afford the same ease of travel as do the ridgelines.

Wildlife create trails along the bank edges. Last fall I followed well-worn trails above the dry Elk Creek channel and sat at the base of a larch tree to watch for deer below. Wildlife trails braided

behind me and I thought of other high banks where I have found lion tracks. I hunkered a little closer to the base of the tree protecting my back, thinking a lion might be looking for a similar perch.

A doe and fawn in the bottom-land below were spooked by something unseen and scooted across the open flats into dense cover on the other side. Then I heard, wuh, wuh, wuh, wuh, that turned out to be the sound of a coyote traveling on packed snow directly below me, at the base of the bank. Misty light glistened off its dense winter coat.

I got up and started exploring the wedge of high land behind me that separates the dry and wet channels of the creek. I crossed a seasonally wet meadow, now dry, hiked over a couple of humps, found two deep, semi-attached potholes, both circumscribed by cottonwoods, and scrambled up a steep ridge. At the top I found a warren of old dens and wondered whether it was fox, badgers or some other burrowing species that dug this high-dry home.

I moved on and rested for awhile on a bank above the creek's active channel and contemplated all the variations of land forms I had found in one 100-acre parcel, glad the Swan Valley is not flat.