Seeley Swan
PATHFINDER

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Eye on the Environment

Come Hell or High Water
By Sean Donovan with Andrea Stephens

There's no doubt by now that everyone living in the Seeley-Swan Valley (or pretty much anywhere else in Montana) has noticed that this spring has brought with it raging rivers and washed out roads. Flooding has caused damages to property across the state. 50 of Montana's 56 counties had issued flood warnings by July 12th.

On July 28th, there was 103 inches of snow (57 inches of water content) in the Mission Mountains. As of Independence Day, there was still 87 inches of snow (46 inches of snow content). In a week, 16 inches of snow melted (11 inches of water). And to think the winter snowpack topped off at over 15 feet!

These measurements are from a Snotel site on the tribal side of the Missions…snow depth is typically slightly higher here on the Swan Valley side. As frustrating as the high water has been for all human residents of Montana, floods of this magnitude are only detrimental to us; the natural communities in which they occur have gotten used to them. In fact, some species really thrive in flood conditions.

Flooded fields and roads are rivers' natural "storage systems", even if they look catastrophic. These flood plains have been developed over thousands of years as water carved its way from the mountains to the ocean.

Inevitably, high volumes of water enter stream and river channels every spring, and every once in awhile, conditions are just right for massive flooding. Whenever these events would happen, the channel would spill its contents over its banks and onto the surrounding fields, dissipating its energy and bringing nutrients to the forests.

That water moving through the forest right now is moving mighty slowly compared to what's in the channel. The dispersal of water on the floodplain decreases average river velocity as it spreads over the land; that same water then moves slowly back to the river through the ground over the course of the summer, emerging cold and clear just when our fish need it most. Nutrients are brought into the floodplain by way of silts and clays, while organic material is swept back into the river, feeding the river's microscopic communities in turn.

Flooding brings silts and gravels to bars along the river edge. Thus, new cottonwoods can become established: floodwaters wash away any competition and provide nutrients for the water-loving species to take root. Plant community succession is continually reset and biodiversity is heightened.

There is another species that is enjoying the high water. Brook sticklebacks are a fish species native to northeastern Montana and somehow managed to establish themselves this side of the Divide. The species is invasive and have a taste for just about anything smaller than themselves, especially amphibian eggs.

The Ohio Department of Natural Resources calls them a "small fish with a pugnacious attitude". They can live in environments with very little oxygen. Roger Lindahl, a herpetologist on the Flathead Forest, says he stuck one in a capped glass vial in his shirt pocket for the day, then mistakenly left the vial on his desk for a day or so. When he finally opened the vial, the fish was alive and well! They are certainly not something we want to see here in the Seeley-Swan. However, high water has temporarily connected creeks and wetlands that are normally separated by land, allowing the invasive fish to expand its territory.

Floods happen naturally. They always have happened and will happen again, no matter how much we may want to stop them. It is all just part of the cycle set in motion long before we humans came to exist. Though high water damages property and allows invasive species to migrate, it is also necessary for some of our most beloved species to continue existing for us to enjoy.