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### Fish Passage: Adapting our Tools for Living with Beaver in Salmon Country

There's a bumper sticker in the Pacific Northwest that few have ever seen, but is often cited in conversation when beaver dams and salmon come up: "Beaver taught salmon to jump". This simple phrase hints at an old relationship—a coevolution of two keystone species, both bringing richness and diversity of life to the wetted landscape they inhabit. Fish have navigated beaver dams "since time immemorial" and yet, across the Northern Hemisphere, beaver dams have often been treated as barriers to fish movement—blown up, notched or dug out in the name of fish passage. For those of us that are used to thinking about our own concrete dams in the context of fish passage, beaver dams have sometimes become collateral damage in the quest to open back up our waterways to fish movement.

Many state and federal agencies now acknowledge that beaver dams—far from diminishing fish populations through a restriction of habitat—can actually create an exponential cascade of high quality fish habitat. Some beaver dams may restrict movement for some fish, some of the time—it's a nuanced and complicated to simplify into anything like "Yes/No". Suffice it to say, beaver taught salmon to jump.

Which leads us to the tools we are now using to coexist with beaver and their dams. Flow-devices, which have become a critical tool for managing negative impacts to human property and infrastructure, have moved out west—into a landscape of flashy streams and anadromous fish. These devices, which quietly alter the flow at the beaver's dams or exclude their damming from our culverts and spillways to manage for flooding, also introduce a level of human management to this nuanced old story. We must be careful to utilize these tools for more beaver on the landscape without inadvertently altering the natural fish passage at beaver dams, or excluding fish with our culvert fences.



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Toward that end, Beaver State Wildlife Solutions LLC has been collaborating with Oregon Department of Fish and Wildlife and Beaver Solutions LLC to modify the classic flow-device designs, and create best management practices for installation of flow devices in streams with migratory fish. Jakob Shockey will share the new design elements being piloted in Oregon and the thinking behind these modifications.