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Flow Device Project for Atlantic Salmon Passage in Newfoundland

World Wildlife Fund has been gathering information on Atlantic salmon habitat threats in the Canadian province of Newfoundland and Labrador (NL) through consultation with local salmon angling and conservation groups. Throughout this process, concerns about Canadian beaver (*Castor canadensis*) dams as barriers to salmon migration were repeatedly raised. In NL as in other places in North America, lethal methods have been employed when beaver activities become a nuisance (i.e. dam a watercourse, causing flooding and extensive crop or property damage). These solutions were temporary as new beavers or beaver kits often re-colonized old sites. Beaver are a naturally occurring part of NL ecosystems. Despite the valuable services beavers provide, there are documented instances where Atlantic salmon stream migrations are impaired by beaver dams, especially in cases of very large dams, complexes of multiple dams or in low rainfall years. WWF Canada is now working with the Canadian Department of Fisheries and Oceans and the Beaver Institute to develop and test a pilot beaver-baffle to improve fish passage based on the “Snohomish Pond Leveler” (SPL). The SPL contains adaptations that facilitate movement through the dam and provide attractant flow to fish. The concept of the design was developed for Coho salmon and tested with dam blockages in road culverts. Modifications on this design are required to adapt to the Atlantic salmon and to dam blockages outside of culverts. Over 2019-2020 WWF Canada will trial the modified SPL on two rivers (Salmon Cove River and Northeast River). Surveys will be completed at each location (up to four suitable locations—two in each river system). Photos of each location and measurements of beaver activity, dam height, dam length, water elevation head (difference between upstream and downstream water levels), downstream pool/habitat configuration, and dam thickness will be collected to determine if the location is suitable. To determine success of the device, a monitoring program will be implemented in Fall 2019 and Spring and Fall 2020 that includes



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redd counts, juvenile numbers, and adult numbers (using Passive Integrated Transponder (PIT) tags) upstream. At the time of Beaver Con, WWF Canada will share preliminary results.