Using beaver dam analogues as a restoration tool in highly impacted watersheds

Thomas Sweeney[1], Mike Lancaster[2], Amy Weston[1], Reilly King[2]

[1]*Nova Scotia Salmon Association*
[2]*St. Margaret's Bay Stewardship Association*

The Nova Scotia Salmon Association has a long history of applying and refining river restoration techniques, especially low-cost and low-risk habitat improvements that can be implemented at a community level. A few highly degraded systems, however, have made it difficult to apply traditional techniques, because over widening and historic rock armoring have made river channels excessively "flashy", necessitating new approaches. The Ingram River Watershed, about 20 minutes away from the city of Halifax, NS, is one such example. Although a highly beloved system, the Ingram suffers from a legacy of historic logging practices including straightening of channels to facilitate log drives. These impacts have disconnected much of the river from its floodplain and have intensified high water events as well as droughts. In 2025, the Nova Scotia Salmon Association partnered with the St. Margaret's Bay Stewardship Association to trial a series of Beaver Dam Analogues (BDAs) in the Ingram to reduce volatility and improve water retention. Following a successful season and subsequent monitoring, in 2026, the team received funding to further implement more BDA structures in the area. Although not traditionally applied in Nova Scotia, this project highlights that BDAs are an appropriate tool when sited properly and will likely be an important part of river restoration practices moving forward.

Keywords**:** aquatic species recovery, habitat enhancement, nature-based solutions, river restoration