American Ecological Engineering Society

Journal of Ecological Engineering Design
journals.uvm.edu/jeed

Supplementary Material

Decision Support and Guidance for Applying Hydraulic Modeling to Beaver Dam Analog Stream Restoration Projects

Hattie Greydanus[1,2], Sue L. Niezgoda[3], Brian Bledsoe[1]

[1]Institute for Resilient Infrastructure Systems and School of Environmental, Civil, Agricultural & Mechanical Engineering, University of Georgia, Athens, Georgia, United States

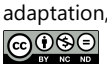
[2]Stillwater Sciences, Portland, Oregon, United States

[3]Department of Civil Engineering, Gonzaga University, Spokane, Washington, United States

Correspondence
Hattie Greydanus
School of Environmental, Civil, Agricultural & Mechanical Engineering
University of Georgia
Athens, GA 30602
USA
Email: hgreydanus@stillwatersci.com

© The Authors 2026. The *Journal of Ecological Engineering Design* is a peer-reviewed open access journal of the *American Ecological Engineering Society*, published in partnership with the University of Vermont Press. This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (CC-BY-NC-ND 4.0), which permits copying and redistribution of the unmodified, unadapted article in any medium for noncommercial purposes, provided the original author and source are credited.

This article template was modified from an original provided by the Centre for Technology and Publishing at Birkbeck, University of London, under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, adaptation, distribution, and reproduction in any medium, provided the original author and source are credited.



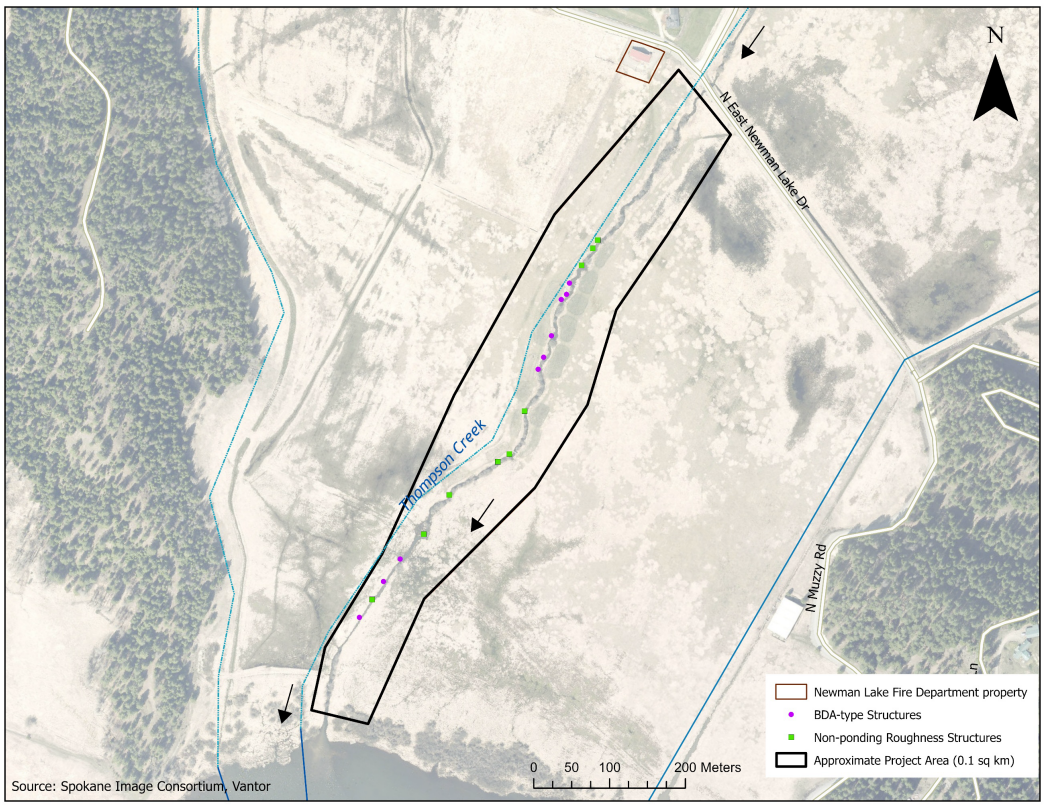


Figure S1 Site map of 2021 Thompson Creek BDA project showing as-built locations of 18 restoration features, including a mixture of BDA-type stuctures and non-ponding roughness structures. Black arrows indicate flow direction from northeast to south-southwest.



Figure S2 Thompson Creek during high flow. Left and Middle: April 2023 high flow, aerial image (upstream and downstream views, respectively). Right: March 2025, typical BDA during spring high flow (most upstream structure in Middle photo). Black arrows indicate flow direction. Photos used with permission from Sue Niezgoda, Ph.D., P.E., Professor of Civil Engineering.

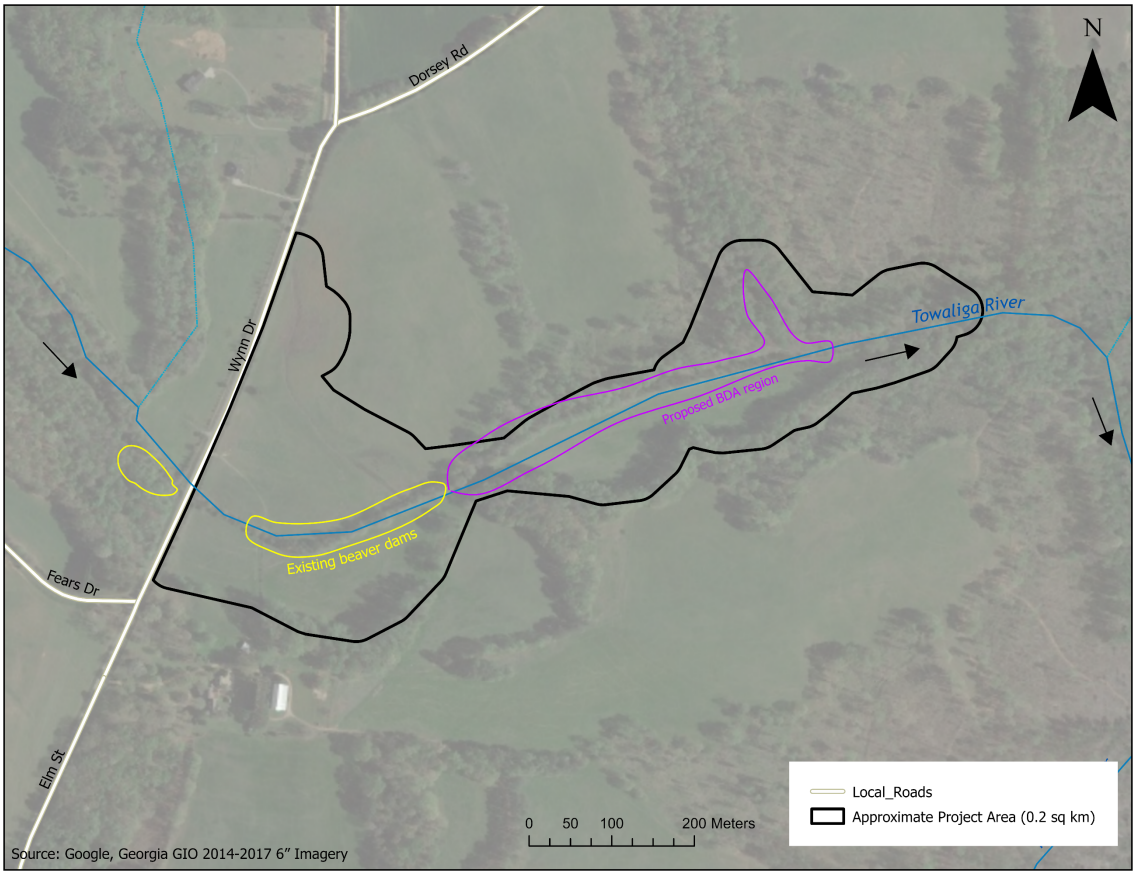


Figure S3 Site map of proposed Towaliga River BDA project showing locations of existing beaver activity and proposed BDA implementation. Black arrows indicate flow direction from west to east.



Figure S4 Representative channel cross sections of Towaliga River at the BDA project site. Photos used with permission from Nutter & Associates, Inc.



Figure S5 Existing beaver dams near Towaliga River mitigation site. Left: looking upstream. Right: looking downstream. Photos used with permission from Nutter & Associates, Inc.

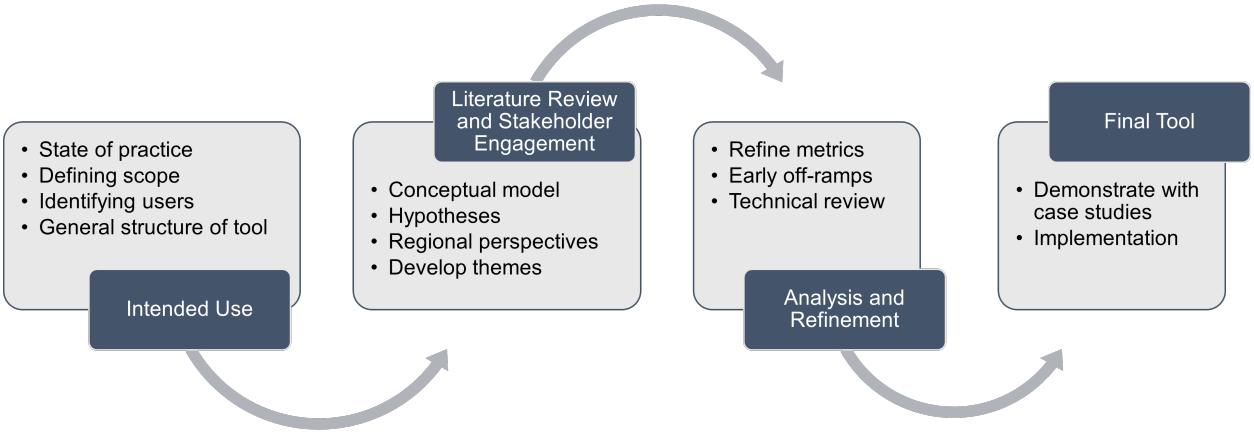


Figure S6 General steps for developing the decision tree tool for assessing when and why to model a BDA project.