

# NATURAL MATERIAL BANK STABILIZATION ALONG THE MAGALLOWAY RIVER AND NH ROUTE 16 USING A BALLASTED TREE REVETMENT ERROL, NEW HAMPSHIRE

American Council of  
Engineering  
Companies  
New Hampshire  
Section  
2022 Engineering  
Excellence Awards  
Entry Category G:  
Water Resources

**PROJECT FOCUS:** This project included relocating a failed portion of NH Route 16 in Errol and stabilizing the bank along the Magalloway River. A key challenge of the project was to use natural materials so that the bank would return to a vegetated state matching surrounding conditions in the Umbagog National Wildlife Refuge. A ballasted log revetment was designed and installed.



**Pre-Construction 6/26/2020**  
Photo illustrates bank erosion and failed roadway prior to the project. The Challenge: Difficult and costly to stabilize the riverbank and accommodate and treat stormwater runoff with the road's current location in the environmentally sensitive Umbagog National Wildlife Refuge.



**Construction 12/18/2020**  
The Engineered Solution: A **Cost-Effective, Self-Sustaining, Resilient Design** in an extremely Environmentally Sensitive Area. Photo shows placing of the initial key logs between piles.



**Construction 12/28/2020**  
Photo shows the Installation of stacked logs over the ballast. The project provided **value to the engineering profession** by providing a successful installation of the Ballasted Tree Revetment approach in New Hampshire, to use as a guide for future applications.



**Post-Construction 11/8/2021**  
The Completed Project: With stable root fans and plants growing. The project was **uniquely** developed and constructed with close coordination between the owner and roadway designer (NHDOT), designer and construction oversight of the bank stabilization project (SLR); member of the bank stabilization team (MJ); and the contractor (J.P. Sicard).

