

NRD Project Final Performance Report

Reporting Organization: Housatonic Valley Association (HVA)
Project Name: Northwest Connecticut Stream Habitat Continuity Assessment
Project Location: Coldwater Housatonic Tributaries in Northwest CT and Eastern NY
Cooperative Agreement #: F14AC00150
Period of Agreement: April 14, 2014 – March 31, 2017
Dates covered by this Report: April 14, 2014 – March 31, 2017

Project Goals:

- To protect and enhance the ecological integrity of coldwater streams in the Housatonic watershed of northwest Connecticut.

Project Objectives:

- Document barriers to stream habitat continuity presented by road/stream crossings.
- Prioritize crossings for replacement to maximize restoration potential of limited funding.
- Build local capacity to replace barriers with structures that effectively pass wildlife, floodwaters, and debris.

Project Tasks:

YEAR 1:

- 1. Facilitate coordination between different agencies and organizations conducting stream continuity assessments in the Housatonic watershed.**

- a. Develop a partner contact list.**

HVA has developed a partner list consisting of individuals representing local municipalities, non-profit organizations, educational institutions, and state agencies involved in the project. Partners have participated in a variety of capacities with different levels of involvement.

Progress Made Towards Project Objective: This task is complete.

- b. Work with partners to rank sub-watersheds based on the presence of high-quality coldwater habitat.**

HVA worked with partners at Trout Unlimited (TU) and the CT Department of Energy and Environment's Inland Fisheries Division (CT-DEEP IFD) to rank and prioritize sub-watersheds based on the presence of high-quality coldwater habitat and other factors. The prioritization of sub-watersheds by the North Atlantic Aquatic Connectivity Collaborative (NAACC) was also taken into account during this process. Nine priority sub-watersheds were identified by project partners: Cobble Brook, Furnace Brook, Guinea Brook, Hollenbeck River, Kent Falls Brook, Macedonia Brook, Mill Brook, Salmon Kill, and Sandy Brook (outside of the Housatonic and funded entirely by other sources, work primarily completed by our partner the Farmington River Watershed Association).

Progress Made Towards Project Objective: This task is complete.

c. Create and print maps of stream crossings.

HVA has created and printed maps for all towns in the project area. These include road and stream names, sub-watersheds, landmarks, and stream crossings with associated codes. Once assessments were completed, HVA developed town maps displaying the barrier status of each stream crossing. These were included in a Road-Stream Crossing Inventory for each town.

Progress Made Towards Project Objective: This task is complete.

d. Organize volunteer training and recruitment.

Two HVA staff (Michael Jastremski, L2 Coordinator, and Ryan Williams, L1 Coordinator) are Coordinators with the North Atlantic Aquatic Connectivity Collaborative (NAACC), the group that has developed the road-stream crossing assessment protocol and houses the database of field surveys. In order for an individual to become a “Lead Observer”, i.e. someone who is qualified to collect data on their own and submit it to the database, they must attend a field training. HVA has held a number of these trainings for our staff, partners, and volunteers. These trainings are also available to anyone in the NAACC network that needs to attend a field training to become certified as a “Lead Observer”.

Progress Made Towards Project Objective: This task is complete.

e. Conduct outreach to municipalities in the study area (attend regional municipal meetings, create and distribute printed outreach materials, meet with 5-7 municipalities).

HVA has met with and maintained contact with representatives from all seven target towns. HVA has developed and distributed town-specific Road-Stream Crossing Inventories and held workshop meetings with the seven municipalities that lead to the identification of priority road-stream crossings. During the grant period HVA held four of these meetings (Canaan, Kent, Salisbury Sharon). Due to scheduling HVA held the remaining three meetings with Colebrook, Cornwall, and Norfolk after March 31, 2017.

Progress Made Towards Project Objective: This task is complete.

2. Conduct field assessment of stream crossings.

a. Document crossings using stream crossing assessment specialists using protocols developed by the North Atlantic Aquatic Connectivity Collaborative (previously River and Stream Continuity Project).

Within the project area over 1,000 crossings have been assessed. The Towns of Canaan, Colebrook, Cornwall, Kent, Norfolk, Salisbury and Sharon have been fully assessed; including accessible private crossings. Other funding was secured to collect additional data at approximately 280 culverts to be used in flood resilience analysis in all nine priority watersheds (Cobble Brook, Furnace Brook, Guinea Brook, Hollenbeck River, Kent Falls Brook, Macedonia Brook, Mill Brook, Salmon Kill, and Sandy Brook). These procedures were developed by the University of Connecticut Department of Civil and Environmental Engineering working closely with HVA. The results from UCONN’s analysis are included in the Road-Stream Crossing Inventories.

Progress Made Towards Project Objective: This task is complete.

b. Conduct QA/QC checks of volunteer assessments in cooperation with the Connecticut Department of Energy & Environmental Protection.

As surveys are completed project coordinators have conducted QA/QC on all data entered into the NAACC database by staff, interns, and volunteers.

Progress Made Towards Project Objective: This task is complete.

c. Enter assessment data into NAACC Stream Continuity Database (previously UMASS New England Stream Continuity Database).

All data collected in surveys by HVA staff have been entered into the NAACC Database. To access the NAACC Database please visit <https://www.streamcontinuity.org/cdb2/>.

Progress Made Towards Project Objective: This task is complete.

YEAR 2:

1. Continue facilitation efforts among agencies, organizations and municipalities, and continue to recruit and train volunteers (as outlined above).

HVA has completed this task as outlined above in Year 1 Task 1d-e.

Progress Made Towards Project Objective: This task is complete.

2. Continue field assessment of stream crossings, QA/QC of volunteer assessments, and data entry into NAACC Database (as outlined above).

HVA has completed this task as outlined above in Year 1 Tasks 2a-2c.

Progress Made Towards Project Objective: This task is complete.

3. Develop a prioritization of assessed crossings for replacement using the Conservation Assessment and Prioritization System (CAPS).

Critical Linkages is a model that builds off of CAPS and prioritizes road-stream crossings based on ecological restoration potential. This model was developed by a partnership including UMASS, The Nature Conservancy, and the State of Massachusetts. Critical Linkages was run for our project area in July 2016. Utilizing the results of this model, fish sampling data, protected open space information, and local knowledge HVA hosted a Conservation Value Prioritization Workshop including a number of technical partners (CT Inland Fisheries, Litchfield Hills Greenprint Collaborative, Berkshire Environmental Action Team, Farmington River Watershed Association) on July 7, 2016. The product of this meeting was a list of priority culverts for each subwatershed based on ecological restoration potential (please see attached workshop notes).

Progress Made Towards Project Objective: This task is complete.

YEAR 3:

1. Continue facilitation efforts, as outlined in years 1 and 2, including organizing and holding a Road-Stream Crossing Resiliency Forum, to present results of assessment/prioritization and bring in experts to discuss strategies for stream crossing replacement.

Through careful thought and conversations with our partners, HVA has decided that rather than holding a multi-town Road-Stream Crossing Resiliency Forum, we would hold workshop meetings with each of the seven target towns (Please see Year 1 Task 1e.). At these meetings HVA presented the results of the field assessments, flood risk modelling, and Critical Linkages (ecological restoration potential modelling). This information coupled with local needs and knowledge resulted in a prioritization of culverts for each town.

Beyond the scope of this grant HVA staff has visited priority crossings in each town (eight sites in total: two sites in Kent and one in every other municipality) and conducted detailed surveys of the existing structure and stream channel. These surveys were used by our Project Engineer at Princeton Hydro to create conceptual plans for replacement structures using Stream Simulation Design, a fish-friendly and flood resilient method for designing road-stream crossings. Currently two of the eight plans are complete and HVA will receive the rest by years end. This work is funded through the National Fish and Wildlife Foundation's New England Forest and Rivers grant program.

Building off of the Inventory documents developed under this grant, town level priorities and conceptual designs will be incorporated into a Road-Stream Crossing Inventory and Management Plan for each municipality. This document will be an important tool for towns while capital planning, applying for grants, and rebuilding infrastructure after the next flood. Using this town-by-town approach will be more effective than a singular event in achieving results on the ground. Working directly with each town will insure that these Management Plans can be as useful as possible for the municipality, leading to improved stream habitat connectivity and flood resilience. These documents will be completed for each town by the end of the year.

Progress Made Towards Project Objective: This task is complete.

2. Collect and analyze additional information to identify other potential barriers to continuity and compile additional information about priority crossings useful to designing replacement projects and securing grant funding.

In the prioritization workshop meeting mentioned in Year 2 Task 3, HVA and partners took note on additional information associated with priority crossings. CT Inland Fisheries has also visited these sites for further fish sampling and provided HVA with this data. The Road-Stream Crossing Inventory and Management Plan documents will include detailed background information (ranging from stream processes to structure design practices) as well as implementation strategies including potential funding opportunities.

Using the road-stream crossing assessment work funded by this grant, HVA and its partners have leveraged an additional \$213,905 in grant funding to work with target towns in the culvert prioritization process and expand the project into four other communities (Oxford, Seymour, and Washington, CT and Dover, NY). As described in Year 3 Task 1 HVA is developing Road-Stream Crossing Inventory and Management Plan documents for the towns. Using elements of these documents HVA has already partnered with the Town of Kent to replace the two priority culverts identified in the workshop meeting conducted as part of this project. We are currently seeking funding from a variety of sources including: CT Institute for Resilience & Climate Adaptation Municipal Resilience program, Patagonia's World Trout Initiative, Eastern Brook Trout Joint Venture, and the 2018 round of the NFWF New England Forest & Rivers program (please see included copy of HVA's 2017 NFWF proposal). If there are remaining resources through the Housatonic NRD Fund HVA would be excited to discuss the possibility of partnering on this important project. This next implementation phase would not be possible without the support from the original grant.

Progress Made Towards Project Objective: This task is complete.

Enclosures:

1. July 7, 2016 Conservation Value Prioritization notes
2. Road-Stream Crossing Inventory documents
3. 2017 NFWF New England Forest & Rivers Application

Project Budget Analysis (to date):

Budget Item	Budget	Actual To-Date	%	Notes
Salaries	\$81,500	\$112,353	138%	
Fringe Benefits	\$17,300	\$6,681	39%	
Equipment	\$8,000	\$16,425	205%	¹
Supplies	\$5,100	\$3,889	76%	
Contractual	\$33,500	\$13,471	40%	²
Travel	\$4,600	\$7,551	164%	
TOTAL	\$150,000	\$160,370	107%	³

¹ HVA purchased a Trimble GeoXT6000 GPS unit with sub-meter accuracy and field mapping capabilities and a Leica Flexline TS02 Plus total station.

² Two Trout Unlimited staff provided training for geomorphic and hydraulic capacity data collection. UCONN Department of Civil and Environmental Engineering provided risk-of-failure analysis at approximately 280 sites.

³ Expenses over the awarded amount were paid for by match funding.

Summary:

Award total: **\$150,000**

Match Funding:

- National Fish & Wildlife Foundation - \$125,000
- Climate Smart Communities – \$40,445
- Connecticut Institute for Resilience & Climate Adaptation - \$33,660
- Patagonia World Trout Initiative - \$6,000
- Farmington River Coordinating Committee - \$5,800
- Northwest Connecticut Community Foundation - \$3,000