

## Eastern Brook Trout Joint Venture Completed Project Report Form

### Project Title:

Great Pond Tributary Culvert Replacement, Little Cards Brook, Franklin, Maine

- **Sponsor:** Hancock County Soil and Water Conservation District
- **Partners involved:** US Fish and Wildlife, The Nature Conservancy, Private Road Association
- **Project costs:**
  1. Total cost: 33,363
  2. Non federal amount: \$5,800 TNC
  3. Federal amount:27,563
- **Funding Sources:** Eastern Brook Trout Joint Venture, The Nature Conservancy, US EPA thru Maine DEP 319 grant.
- **Action strategy implemented in the project (according to EBTJV range wide, regional, or state level habitat strategies).**

The undersized hanging culverts were replaced with a open bottom precast concrete structure. That is over 1.2 times bankfull width and capable of passing a 100 year storm at 80% capacity of the structure.
- **Priority score of the sub-watershed where the project took place.**

Subwatershed #230706 was Classified as Intact with a Priority Score of 1.51
- **Description: project objective(s):**

Brook trout are currently present in the project stream and were found during electrofishing by Scott Craig of the US Fish and Wildlife Service. The habitat is suitable for increased populations above and below the project site. The project removed a passage barrier that limited access to Little Cards Brook. Increasing access to Little Cards Brook by improving passage and habitat at the proposed crossing replacement site will contribute the following EBTJV Regional Objectives:

  1. Maintain the status, or no net less, of subwatersheds classified as Intact.
  2. Strengthen brook trout populations in subwatersheds classified as Intact.

The project met the following state level EBJV conservation priorities:

  1. Increase recreational fishing opportunities for wild brook trout
  2. Protect the “best of the best” habitat that supports existing, healthy wild brook trout populations
  3. Improve and reconnect adjacent habitats that have a high likelihood of supporting stable wild brook trout populations
  4. Focus on critical wild brook trout spawning and early life history habitat in sub-watersheds classified as Intact

5. Preserve genetic diversity of wild brook trout populations

- **Methods used:** Removal of existing culverts and replacement took place at the beginning of the instream construction window. Proper sediment and erosion control practices were in place during construction. An excavator was used to remove culverts, remove soils to sub grade elevations, crushed stone wrapped with geotextile was used as a base establish the structures elevation determined by project engineer. Dirigo Timberlands pre cast concrete: footer, abutments, were set and backfilled. Before the structures deck panels were placed, the select native fill materials were replaced by the excavator to restoring the stream channel to the original elevation and grade.

Water Temperature data was collected and is publically available at

<http://db.ecosheds.org/> Site “Little Cards Brook- Great Pond”.

- **Project outcomes: Describe outcomes and whether or not the objectives were met. If not why? What lessons were learned?**

The project met the habitat objectives of removing an aquatic passage barrier and restoring access to an additional ¼ mile of cold water refugia. It also met watershed management goals of replacing two undersized and chronically failing culverts with, a structure that is properly sized greatly reducing the likely hood of failure and associate erosion washing sediment down stream and increasing nutrient loading in Great Pond. We learned that the project would have benefited from having run storm event calculations to eliminate structural choices before requesting funding. The proposed open arch design was inadequate to address 100 year storm events. The final rectangular structure was able to pass the storm events but was also more costly. In the future, I would recommend more preliminary design before requesting funding, or providing contingency funding process. The Nature Conservancy ability to provide additional funding allowed this project to be completed.

- **What is the Brook trout population response to the project outcome? It is too soon to confirm the population response.**

It is too early to confirm the trout population response, weather conditions for the past two summers produced extreme low water conditions.

- **If applicable, what is the number of stream miles and or acres of brook trout habitat?:**

Thirty feet of stream habitat (road crossing) were restored with the replacement of culverts with and open bottom concrete structure.

- **If applicable what is the number of stream miles and or lake/pond acres of brook trout habitat gained access to as a result of removing a fish barrier. Include the # of fish barriers removed?**

Access to an additional ¼ mile of stream habitat resulted from the removal of the culverts at the project site.

- **If applicable, what is the number of stream miles and or lake or pond acres of brook trout habitat with sediment, phosphorous, or nitrogen inputs that were**

rehabilitated to within 25% of natural or other desired levels such as numeric state water quality criteria?

\*\*\*\*\*Please include before and after photos of the project.\*\*\*\*\*



1: Before: culvert outlet w/ erosion after fall storm



2: Before: culvert inlet





**3. After inlet looking down stream**



**4. After, outlet looking up-stream**



November 2, 2017

← 9.6 ft wide →

4.7 ft

