Chester Creek Restoration Project Final Report

Initiated and Implemented By:

Southcentral Trout Unlimited Chapter, Anchorage Waterways Council, and Alaska Department of Fish & Game

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Authored By:

Shannon Carroll, Vice-President, Southcentral Trout Unlimited Chapter

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Project Summary

The Southcentral Trout Unlimited Chapter ("Chapter"), in consultation with the Anchorage Waterways Council ("AWC") and the Alaska Department of Fish and Game ("ADF&G"), initiated a project to restore a portion of the South Fork of Chester Creek. After developing a site-specific plan, the Chapter applied to the Small Grants Program, administered by the Western Native Trout Initiative ("WNTI"). WNTI approved the Chapter's grant application; the estimated cost at the time of the application was $3000.

Volunteers began work in-stream work in mid-June 2014, and successfully completed the project on July 21, 2014. Chapter volunteers conducted monthly site visits from July – September 2014.

Background

The proposed project site is located on the South Fork of Chester Creek, which is within the Chester Creek drainage. The stream originates in the Chugach Mountains and flows westward into the Knik Arm of Cook Inlet, draining 28 square miles through central Anchorage. Chester Creek is home to native populations Dolly Varden and coho salmon, making it a popular urban fishing destination. It is also one of the most densely populated watersheds in Alaska, with more than 75,000 people living within the drainage. Not surprisingly, then, land use within the watershed is diverse, ranging from highly urbanized residential and commercial zones to low-density parkland. Fish habitat has suffered accordingly.

Problem Statement

Chester Creek has historically supported strong runs of Dolly Varden char throughout its watershed. While currently abundant in the creek's upper reaches, channelization, reductions in riparian habitat, and increases in impervious surfaces have largely extirpated these fish from their historic range within the watershed. Roughly 69% of Chester Creek's channel has been modified, and 68% of the channel has been straightened. Nearly 35% of the creek channel is unstable and eroding due to the removal of vegetation. Consequently, Chester Creek is susceptible to rapid changes in water level, erosion, and sedimentation. Sediment discharge within the lower reaches of the creek is estimated to be 2-to-3 times higher than in the upper reaches.

Anticipated Outcomes

At the outset, the Chapter, in partnership with ADF&G and AWC, identified five anticipated outcomes of the project:

1. *Restore habitats that have been impacted by human activities*
2. *Reverse declines in quality and quantity of aquatic habitats to improve the overall health of fish and other aquatic organisms*
3. *Increase the quality and quantity of fish habitats that support a broad natural diversity of fish and other aquatic species*
4. *Protect and restore western native char populations.*
5. *Promote cooperation among local and state agencies and non-profit organizations by implementing actions at a local level*

Project Description

The project design was a cumulative effort between the Chapter, ADF&G, and AWC. Streamside restoration was completed by a team of TU and AWC volunteers, and by members of ADF&G's Habitat Restoration Workshop.[1]

Upon completion, the project restored 50 feet of streambank (25 linear feet on each side of the creek) on South Fork Chester Creek downstream of the outlet of University Lake.[2] All restoration work was consistent with ADF&G's stream restoration handbook, *Streambank Revegetation and Protection: A Guide for Alaska*.[3] Volunteers stabilized the stream banks using coir logs, brush layers, and native vegetative mats. In order to create a trench for placement of the coir log, volunteers excavated about 1.4 cubic yards of streambed material from the existing banks using hand tools. Additionally, on the north bank of the creak, volunteers installed about 30 live alder transplants.

The project site is currently fenced off to allow the vegetation time to mature. For photographs of the work in progress, see the Appendix B.

Project Results

The project successfully accomplished all anticipated outcomes.

1. *Restore habitats that have been impacted by human activities*
2. *Reverse declines in quality and quantity of aquatic habitats to improve the overall health of fish and other aquatic organisms*
3. *Increase the quality and quantity of fish habitats that support a broad natural diversity of fish and other aquatic species*

Habitat within the project site is significantly improved. As seen in the contrast between the photos in Appendix A and B, the eroded banks along both the north and south side of the creek have been revegetated. The riparian habitat has improved water quality by reducing sedimentation during storm events and also improved fish habitat within the restored reach. Appendix B shows a pair of spawning coho (silver) salmon within the project site. This photo was taken in September 2014. Because coho salmon require streams with stable gravel substrates to spawn, the presence of salmon within the project site suggests improved aquatic habitat for both salmon and native Dolly Varden populations.

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[1] ADF&G coordinated a Habitat Restoration Workshop in conjunction with the restoration project. The workshop included one classroom day of state-approved restoration techniques, and one field day applying what participants learned.

[2] The project proposed in the NFH grant application was to restore 60 feet of stream bank; however, after consulting with ADF&G, and reviewing project costs, the project was modified to cover 50 feet of stream bank.

[3] For an electronic copy of the handbook, see http://www.adfg.alaska.gov/static/home/library/pdfs/habitat/98_03.pdf.

4. *Protect and restore western native char populations.*

Improved habitat and water quality conditions should lead to the protection and restoration on native char populations within the project area (and hopefully outside of the project area, as well). An exact number of char within the project site was not identified during the subsequent site visits; however, local anglers could be seen catching char at the north end of the project site, which indicates that the Dolly Varden were present within the restored project site.

5. *Promote cooperation among local and state agencies and non-profit organizations by implementing actions at a local level.*

As stated above, the project was the culmination of work between the Chapter, ADF&G, and AWC.