Cross Fork Creek Brook Trout Habitat Project

According to recommendations made in the Upper Kettle Creek Fish Habitat Conservation Plan, developed by Larson Design Group for TU and the KCWA through a Growing Greener grant, Cross Fork Creek is listed as high priority for fish habitat protection and improvement. Cross Fork Creek, the largest tributary to Kettle Creek, has problems such as excess sediment inputs and high water temperatures – two conditions that place stress upon and limit the reproductivity of its native brook trout population. Cross Fork Creek does also have a naturally reproducing brown trout population, but the emphasis of this project is to improve habitat conditions for the benefit of brook trout (Salvelinus fontinalis), which is one of the only native salmonid species in much of the eastern United States.

The KCWA and TU initially worked toward a project to restore the natural channel geomorphology that would incorporate habitat benefits for native brook trout. The project's upper reach was located on Cross Fork Creek at the confluence with Yochum Run and its lower reach is at the mouth of Windfall Run. Because Cross Fork Creek is classified as "Exceptional Value," which is the DEP's highest water quality designation, the original project design (completed by Larson Design Group in 2004) utilized "soft engineering" techniques associated with natural stream channel design to minimize the amount and size of equipment necessary for construction for the purpose of causing the least earth disturbance possible.

The objectives of the original design plan targeted restoration of natural channel dimensions on specific stretches of the stream and incorporated vegetation and other natural materials to promote bank stabilization along the lengths of regraded streambank and reconstructed channel. Ultimately, the result would have been a narrower, deeper stream channel with a diversity of habitat features such as pools, plunge-pools, riffles, and runs and thermal refugia (i.e. cold, deep areas for trout safe haven during periods of low flow and warm temperatures) for native brook trout.

However, the KCWA and TU were not able to follow through with their original plans because the permitting agencies would not allow any excavation within the stream channel and were apprehensive about several proposed relocations of the stream channel to former abandoned channels – activities which the consultant, KCWA, and TU felt were necessary in order to restore more natural channel dimensions, and in essence to "speed up" much of what Mother Nature is slowly doing on her own to abate the effects of timber harvest in the late 1800s to early 1900s throughout the Cross Fork Creek drainage.

Another major stumbling block the KCWA and TU encountered in their pursuit of improving habitat conditions to benefit the native brook trout was the PFBC's de-listing of Cross Fork Creek from Class A to Class B followed with adding Cross Fork Creek to the stocked trout program in 2005. <u>It must be made clear that neither the KCWA nor TU is opposed to trout stocking.</u> However, this Cross Fork Creek project was a unique opportunity in which they hoped to demonstrate that a great recreational brook trout

fishery could be improved by addressing habitat degradation, the source of the problem and not resorting to a "quick fix" of trout stocking to improve angling opportunities.

Because Cross Fork Creek is now a stocked trout fishery (albeit the trout are stocked immediately downstream of the lower end of the project reach at Windfall Run), KCWA and TU have lost this unique opportunity to demonstrate that a wild trout fishery can be improved without stocking hatchery fish and solely by way of fixing the habitat problems that are impacting the fishery in the first place.

Nevertheless, KCWA and TU persevered with their plans to improve habitat conditions on Cross For Creek. Just one more major obstacle stood in the way of moving forward -- if the project was to proceed, the original design plan by Larson Design Group had to be changed because of the reluctance of the agencies to approve a permit for the natural stream channel restoration. Because over $35,000 (through a DEP Growing Greener grant) had already been spent on assessment, design, and permitting for the design plan, the only realistic option was to work with the PA Fish and Boat Commission toward a new design plan that would still address major habitat concerns such as eroded streambanks and overwide, straight channels with little riparian cover utilizing methods that would require little to no earth disturbance. Thus, through the in-kind services of the PFBC, Dave Keller of the Habitat Management Section and his staff conducted a visual assessment of the 3.5-mile project reach and produced a design that incorporates the use of log vanes, mud sills, and crib banks to stabilize eroded streambanks and promote channel stability, provide thermal refugia, and add some habitat diversity. A $20,000 grant was awarded to TU (in partnership with the KCWA) from the Eastern Brook Trout Joint Venture (granted through the U.S. Fish & Wildlife Service and FishAmerica Foundation) for implementing the project as designed by the PFBC.

There are six separate project sites within the 3.5-mile stretch on Cross Fork Creek between Yochum Run and Windfall Run. Construction finally began in September 2006 and the project was completed in mid-September 2007. The PFBC provided the project construction oversight, as well as the heavy equipment and equipment operators. Many volunteers assisted with the hands-on labor from the KCWA, TU chapters across Pennsylvania, Potter and Clinton County Conservation Districts, national TU staff, Quehanna Prison Boot Camp, and PA Senior Environment Corps.

The construction of this project marked the last project completed by the unique partnership between the KCWA and TU through TU's nationally renowned Kettle Creek Home Rivers Initiative. TU and the KCWA continue to work together on abandoned mine drainage remediation in the lower Kettle Creek watershed.

-by Amy G. Wolfe 9/2008