



Cascade Creek Stream Restoration Efforts Since 2004

Summary - This primarily urbanized watershed drains into Presque Isle Bay which is bordered on its south by the City of Erie and on its north by Presque Isle State Park, the most visited park in Pennsylvania with over 4 million visitors annually. Cascade Creek is 4.75 miles in length, is 7.01 sq. mi., and is 26.7% of the Presque Isle Bay watershed. For many decades the Cascade Creek stream corridor has been encroached upon by urban developments. Recent years have seen renewed interest in this area and other bayfront areas for their natural beauty and the resources they provide society. Major goals in restoring Cascade Creek's riparian zone include the reduction of erosion and improvement of wildlife habitat. Outreach and education efforts have been used to highlight past mistakes and demonstrate solutions.

Six complementary projects have been funded in this stream corridor in recent years to reduce sediment loading and improve habitat:

Previous efforts since 2004 will, when completed, reduce sediment loading along 3,900 ft. of this urban stream, aiding in the recovery of the Cascade Creek watershed and Presque Isle Bay.

- Phase I – This first phase, led by the Erie County Conservation District (ECCD), successfully restored 500 feet of the West Branch of Cascade Creek within Frontier Park to its natural condition. Funding for design was initiated in 2004. Construction occurred in 2006. Frontier Park is a 35 acre City of Erie-owned park that is also home to the Lake Erie Arboretum at Frontier (LEAF). The use of log vanes/rock weirs, live branch layering, and rock toe protection has eliminated an estimated 80.8 tons of sediment in the stream per year. The project cost for this phase was \$139,000.
- Phase II – This phase restored another 330 linear feet immediately up and downstream from Phase I in Frontier Park in the West Branch of Cascade Creek. Work activities were similar to Phase I project tasks and it is estimated that there is a 74 tons per year reduction in erosion and sedimentation. This phase also included bank stabilization/stream remediation work completed along an additional 120 feet of the main stem of Cascade Creek near Romolo Chocolates. This work has eliminated an estimated 26 tons of sediment in the stream per year. The total cost of Phase II was \$134,000.
- Phase III – PA Sea Grant staff continued to assist ECCD on Phase III of stream corridor restoration efforts. PASG and ECCD have been working with partners such as the S.O.N.S., LEAF and the City of Erie to complete this project which is currently under construction. Project costs total \$528,000 project (\$485,000 from EPA) with

construction on 1,100 linear feet of the stream and streambank. It is expected that this project in Frontier Park will eliminate over 123.75 tons/yr. of sediment from entering Cascade Creek and Presque Isle Bay.

- Phase IV (Currie Landfill) – PASG staff attended a DEP-sponsored public meeting in September 2010 and raised the question as to why the Currie Landfill restoration project in Millcreek Township only included the west side of Cascade Creek, and in October 2010 staff submitted a letter to DEP recommending the addition of a 25-foot buffer for 700 feet on the east side of Cascade Creek. In January 2011, PASG received a letter from DEP stating the buffer had been added to the scope of work. The buffer will provide an opportunity for habitat restoration that is consistent with other on-going efforts to restore this stream. Restoration work is underway at this time at a cost of over \$4 million dollars. Work is expected to continue through the 2013 construction season.
- Phase V - PASG prepared a \$419,164 grant application on behalf of the Erie-Western Port Authority for FY2011 GLRI funds to restore 450-linear feet of Cascade Creek. In June 2011, EPA awarded \$387,664 for the project. The restoration will reduce sediment loading by 98 tons/yr.; improve water quality and fish and wildlife habitat; restore channel width; remove shoreline hardening of the streambank; naturalize streambank gradient; restore the riparian buffer; remove an obstructive building from the floodplain; reduce and green a parking lot; and provide educational signage that describes project benefits. Construction is scheduled to begin in August 2012.
- Phase VI – A grant application for EPA GLRI funding was submitted on 05-23-12. Notification of grant award was received on 08-10-12. This project will improve an additional 700 ft. of this stream, largely completing restoration efforts on Cascade Creek in the City of Erie. It will reduce sediment loading by 61.25 tons/yr.; improve water quality and fish and wildlife habitat; restore channel width; remove shoreline hardening of the streambank; naturalize streambank gradient; plant riparian buffer; remove an obstructive, unnecessary bridge and abutment from the floodplain; reconstruct a popular bike/pedestrian trail further away from the stream corridor using porous pavement to improve filtration; and provide an educational effort that describes project benefits to the general public. The total project cost for this phase is \$313,458. Construction is anticipated for summer 2013.

All six phases of this ten (10) year stream restoration effort total 3,900 linear feet along Cascade Creek and its West Branch. Not including the Phase IV Currie Landfill restoration project being completed by PADEP, the other five phases of the project that have been undertaken by local partners have a total project cost commitment of \$1,533,000, restore 3,200 linear feet of stream, and remove approximately 463.8 tons of sediment from the stream per year.

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PA Sea Grant