## TROUT BROOK: A STREAM ON THE ROAD TO RECOVERY

One recent sunny afternoon in April, Water Resource Protection Department staff met with University of Maine PhD student Thomas Parr to visit the Trout Brook Nature Preserve. Thomas' research focuses on how urban environments affect stream health and he is interested in the work the City has been doing to improve Trout Brook. During his visit, Thomas was astonished to witness a juvenile trout leaping from the brook as it attempted to swim upstream. As luck would have it, he had a dip net on hand and was able to scoop the little fish from a plunge pool below a culvert crossing. This exciting discovery is direct physical evidence that Trout Brook is an apt name and that the stream may well be on the road to recovery.

Historically, as undeveloped forest land was converted to human uses not much thought was given to how this development impacted water quality. Over the past several decades extensive research has clearly shown that increases in development intensity can negatively affect adjacent surface waters. The areas around Trout Brook once consisted mostly of forest land but are now moderately developed with residential and commercial land uses, particularly in the lower portion of the watershed. Where once the forest acted as a sponge to soak up most of the precipitation during a storm, lawns, driveways and streets now funnel large volumes of pollutant-laden rain water and snow melt directly into local surface waters. As a consequence, Trout Brook does not meet state water quality standards. The recently completed Trout Brook Watershed Management Plan identifies a number of strategies for halting or reversing the adverse impacts of development.

**University of Maine PhD student Thomas Parr scoops a juvenile trout from Trout Brook**

For the past 3 years, WRP has been deploying water quality monitoring equipment provided by the Casco Bay Estuary Partnership (CBEP) to continuously measure conductivity, temperature and dissolved oxygen. All of these measurements provide a better understanding of how Trout Brook is being affected by surrounding land uses. The fish and insects that live in the brook prefer lower conductivity, cooler temperature and higher dissolved oxygen. Unfortunately, during certain times of the year these readings have been at levels that may make it more difficult for aquatic organisms to survive or reproduce. To make things a bit easier for the critters that live in Trout Brook, the City partnered with the South Portland Land Trust to complete a small habitat restoration project last fall in the Nature Preserve that was funded by the CBEP. Improvements included removing cobble dams to increase dissolved oxygen, placing woody debris to enhance fish habitat and opening a manmade berm so the brook can access the floodplain during storm events to reduce the likelihood of downstream flooding.

Starting this spring, the City will be partnering with the Maine Department of Environmental Protection and Cumberland County Soil & Water Conservation District to begin implementing recommendations from the watershed management plan over the next 2 years. Any community members interested in helping out with this process can contact Stormwater Program Coordinator Fred Dillon at 347-4138 / fdillon@southportland.org for more information on how to become involved.

*April 16, 2013*