Updated Fall 2013

NRCS Application of the Wetland Reserve Program in the Otter Creek Watershed of Vermont

As one of the larger rivers in the Lake Champlain Valley of Vermont, Otter Creek is a major contributor of sediment and phosphorus to Lake Champlain. As of 1991, Otter Creek was determined to contribute the largest load of phosphorus to the Lake (122mt/yr). Unlike some other tributaries, it contributes it directly to the main Lake. Since 2002 Lake Champlain has been under an EPA mandated TMDL for phosphorus, which is currently in the process of being updated. Nearly 50% of the Otter Creek phosphorus load was estimated to originate from non-point sources, primarily from agricultural lands.

Otter Creek is also associated with many natural areas that are important to wildlife. The Dead Creek Wildlife Management Area is located adjacent to Otter Creek. It is one of the largest WMA's in the State and is located along the Champlain flyway for migratory waterfowl. There are also a variety of federal and state listed species of concern in the Otter Creek watershed. This includes the federally listed Indiana bat and state listed species such as native mussels, salamanders and reptiles. The Dead Creek WMA has been recently used as a site to release young Bald Eagles in an effort to restore nesting eagles to Vermont. Many other natural areas in the watershed have been conserved by the State of Vermont and by non-profits such as The Nature Conservancy.

Restored wetlands along Otter Creek provide flood water storage; help trap, store and filter sediment and nutrients; and provide hunting, fishing and wildlife viewing opportunities for residents and visitors to the State of Vermont. River flow data collected on Otter Creek after Tropical Storm Irene show significant flood mitigation due to the water storage capacity of this landscape. Watersheds such as Otter Creek with a high percentage of functioning wetlands were shown to effectively reduce downstream flood flow peaks in comparison to other Vermont watersheds which contain a smaller portion of functioning wetlands.

These efforts have resulted in:

• **Ensuring permanent protection of 2,861 acres of wetlands and buffer areas:** Out of these protected acres, 1,353 acres have had wetland hydrology and function restored so far.

• **Creation of conserved blocks of land:** Fifteen adjacent parcels, totaling almost 800 acres of wetland, have been conserved and restored along a 1.5 mile stretch of Otter Creek forming one larger block of protected and restored wetland.

• **Wildlife habitat protection:** Monitoring completed by a local Audubon chapter shows that a 356 acre WRP site in Rutland County provides habitat for 107 different species of birds and 19 different species of butterflies. This is an increase from 57 bird species in 2003 and now includes birds such as American bittern, Virginia rail, marsh wren and swamp sparrow.

• **Wildlife habitat protection:** The conserved and restored wetland along Otter Creek provides habitat to the federally listed Indiana bat, other declining bat species, and to a number of state listed species including the blue spotted salamander and black rat snake.

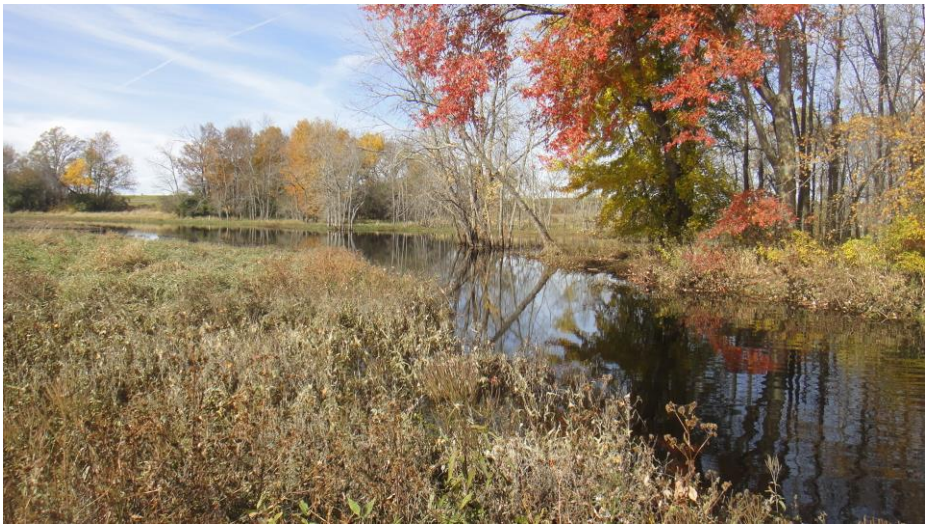
• **Restored backwater wetlands increase fish spawning:** Northern pike and eleven other species of fish, of various age classes, have been documented in the restored wetlands and floodplains indicating prime spawning, refuge, and feeding habitat.

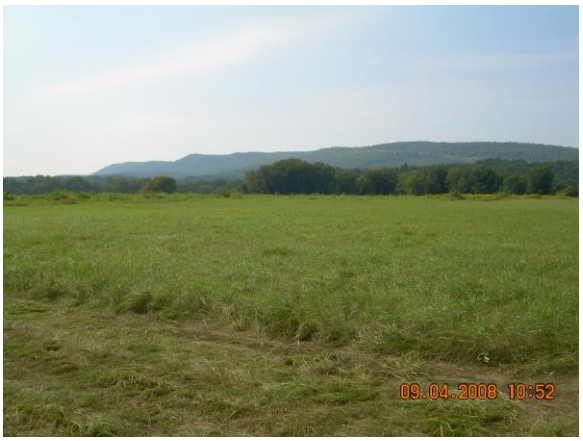
• **Water quality improvement:** Restoring wetlands along Otter Creek has helped to reduce the runoff of sediments and nutrients from marginal agricultural land and increased sediment and nutrient trapping within the floodplain, resulting in a reduction of sediment and nutrients exported to nearby Lake Champlain. Portions of the Lake have been experiencing toxic algae blooms for years.

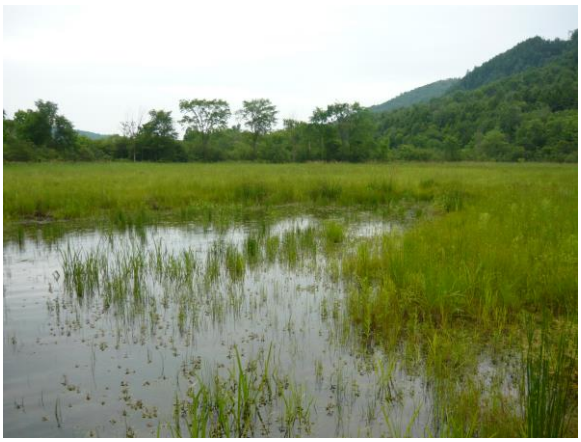
• **Flood Flow Reductions:** During tropical storm Irene many Vermont Rivers experienced devastating flood flows. In most rivers the flood peaks increased as the water moved downstream. In Otter Creek flood flows peaked at approximately 18,000 cfs during the storm while 33 miles downstream peak flow was only 7,000 cfs. Peak flows in the Otter Creek watershed were substantially reduced partially due to a larger portion of functioning wetlands as compared to other Vermont watersheds.

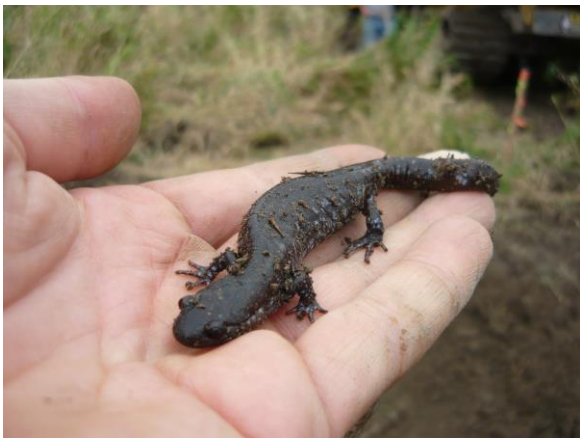
• **Increased recreational opportunities and the creation of a State Wildlife Management Area:** Restored wetlands along Otter Creek provide opportunities for hunting, fishing and wildlife viewing for both residents and visitors to the State of Vermont. In 2008 the State of Vermont purchased a restored 356 acre WRP site in the Otter Creek watershed and identified it as a new State Wildlife Management Area.

• **Economic Gains:** Easements alone have infused $1.4 million into the local economy, in addition to providing employment for local land surveyors and local earthmoving contractors.

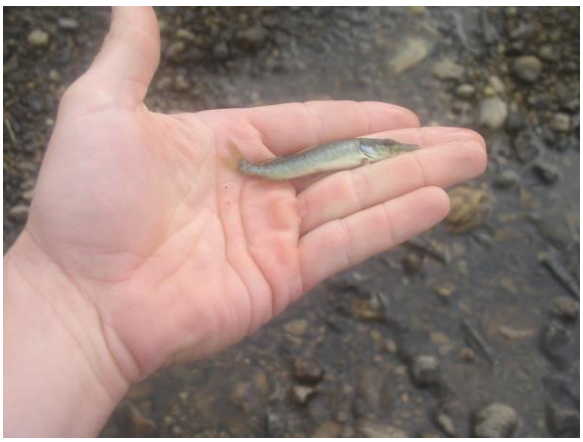








Above: Blue Spotted Salamander



Above: Northern Pike