

How Otter Creek Swamp Complex Helped Protect Middlebury during Tropical Storm Irene

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While flood damage from the rains of **Tropical Storm Irene** was clearly widespread and severe, some areas of the state fared much better than others.

Otter Creek is an interesting example. At the height of Irene, Otter Creek flooded Rutland with almost 19,000 cubic feet per second (CFS) of water on Aug. 28, which is the highest flow ever recorded for this location, and is perhaps comparable to the flood of 1927 (which pre-dates river flow data collection on Otter Creek).

Much was heard in the news of flooding along Otter Creek in Rutland during Irene, but what about downstream of Rutland in Middlebury? Where did all that water go? Remarkably, Otter Creek in Middlebury, over 30 miles *downstream* of Rutland, peaked at only 7,000 CFS on Sept. 3, and we heard very little news of flooding or damage in the Middlebury area.

The answer to what happened to all that water lies between Rutland and Middlebury, in the **Otter Creek swamp complex**. The Otter Creek floodplain between Rutland and Middlebury is broad and flat, and features an extensive complex of wetlands and swamps. Irene's floodwaters in Otter Creek spilled over into the Otter Creek swamp complex, where it filled the broad, low-lying Otter Creek floodplain with water. Only gradually did this water flow back out of the swamp past Middlebury, resulting in a diminished peak flow compared to Rutland.

The **value and function of these swamps** in attenuating floodwater downstream and minimizing damage to homes and property in and downstream of Middlebury was clearly illustrated after Irene. While most watersheds in Vermont exist in narrower valleys that limit the ability of floodwaters to spread into wetlands and floodplains, protecting both wetlands in floodplains and the ability of water to spread into floodplains regardless of setting nevertheless always diminishes the power of floodwaters that rush downstream channels. The Nature Conservancy has developed a way to **model and map active floodplain areas**, and has been working with partners to incorporate this information into river corridor conservation work in pilot projects in Lewis Creek and the Poultney River watersheds, to help protect the habitat and related flood attenuation values that river floodplains provide.