



The Vermont Water Resources and Lake Studies Center

A Brief History...and a Look Ahead

The Vermont Water Resources and Lake Studies Center at the University of Vermont is one of 54 institutes established by Congress through the Water Resources Research Act of 1964. Throughout its history, the Vermont Water Center has served the citizens of Vermont by supporting research on major issues of concern to the state, by distributing information on water resources throughout Vermont, and by helping to educate students about water resources.

Early Water Center research programs included USDA-SCS funded projects of more than 10 years duration on issues related to agricultural water quality and best management practices. Recent efforts have focused on Lake Champlain and non-point source pollution, particularly storm water runoff.

Serving Vermont



Through USGS-supported research on relevant state-wide water issues

Lake Champlain

....a team of UVM scientists is developing procedures and algorithms for using remote sensing to detect, quantify and describe the spatial and temporal patterns of blue-green algae blooms in Vermont lakes. Protocols for sampling during satellite flyovers have been developed and tested in three lakes. The program was initially focused on LandSat imagery but was severely impacted by the malfunction of LandSat 7 in early June. However, groundtruthing was successfully carried out during SPOT and Envisat (MERIS) imaging of Lake Champlain. Two scenes from each satellite will be processed this winter.

Water Resources in Ski Areas

....UVM and USGS researchers have initiated a paired-watershed study to improve our understanding of the effects of ski area development on the alpine environment. The watersheds are situated on the eastern slopes of Mt. Mansfield, and include an unmanaged control and a watershed encompassing an alpine ski resort that is currently undergoing expansion.

Using both analysis of empirical data and simulation modeling, researchers have detected differences in runoff dynamics and water quality in two watersheds. Trail clearing and snowmaking appear to delay snowmelt and lead to lower peak flows in the managed watershed during snowmelt events. Concentrations of suspended sediments, chloride, and other solutes are elevated in the managed watershed, although sediment and chemical responses to runoff events are complex and vary by season and storm type (e.g. rain, snowmelt).



Through Privately Funded Initiatives

Now in its final year, the Burlington Bay Project, supported by funds from the Green Mountain Power Corporation, continues to track issues of concern to Vermonters in the near-shore waters of Lake Champlain. Highlights during the past year included a new program using citizen volunteers to help collect storm water samples from drains discharging into Lake Champlain. Samples collected contained levels of phosphorus and bacteria that exceeded guidelines.



Through Outreach

The Vermont Water Center continues its efforts to assist the campus and local communities with the issue of storm water runoff. Working with UVM campus planners, Water Center scientists are monitoring the water quality of streams impacted by runoff from university property. By measuring such pollutants as suspended sediments, nutrients, and *E. coli* and monitoring the biological communities in the affected streams, we are helping the university develop the most effective ways to reduce storm water impacts.

In addition, we have begun to meet with neighboring communities to assist them as they struggle to meet their obligations as Phase II regulated storm water municipalities. Since many communities may affect the same stream, it makes sense to have local towns develop coordinated approaches to address this complex issue. This October, we sponsored a half-day workshop on storm water, with a focus on educating the public about storm water and a case study of Potash Brook in South Burlington.



For more information about the Water Center and to view a video on educating the public about storm water, visit our web site at www.uvm.edu/snr/vtwater.