

Lake Champlain Sea Grant-supported research informs land and water management and policy decisions to benefit ecosystems and sustainable economies in the Lake Champlain basin.

Researchers collaborate with a wide variety of partners in the basin and throughout the Great Lakes-St. Lawrence ecosystem. We welcome diverse research and stakeholder perspectives, and we share scientific results and management implications with business, state, and local leaders and the communities they serve.

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Featured Impacts



Meteorological data from research buoys in Lake Champlain inform local boaters, anglers, and the National Weather Service. Boaters and anglers reduce weather-related risks and save on fuel costs (and carbon dioxide emissions). The National Weather Service uses the data to improve forecasts.



Testing of nutrient bioretention in soil media resulted in more precise government-mandated specifications in the *Vermont Stormwater Management Manual*. Green Infrastructure, a stormwater management system, helps to reduce phosphorus runoff and protect water quality.



Research on how winter road maintenance practices affect water quality resulted in a northern New York State road salt reduction pilot program. Outreach to winter maintenance professionals around the basin is mitigating chloride pollution in roadside and other local water bodies.



Research in the Lake George region showed that a woodchip bioreactor can effectively reduce nitrates from effluent wastewater. As research on removal rates and water quality benefits continues, the Town of Bolton has received approval from the New York State DEC to install two additional bioreactor cells.

2019-2021 Research Projects

[Application of Drinking Water Treatment Residuals in Green Stormwater Infrastructure for Enhanced Phosphorus Removal](#)

Stephanie Hurley, Eric Roy, Michael Ament
University of Vermont

Test the use of water treatment residuals to reduce phosphorus in stormwater runoff

[A Food Web Modeling Approach to Evaluate and Predict Impacts of Lake Champlain Fish Population Changes](#)

Jason Stockwell, Ellen Marsden, Rosalie Bruel
University of Vermont

Develop food web models that integrate environmental change to aid fisheries managers

[Improving Our Understanding of Interactions Between Best Management Practices, Tile Drainage, and Phosphorus Losses in Subsurface and Surface Runoff](#)

Joshua Faulkner, Don Ross, Kirsten Workman
University of Vermont

Assess methods to reduce phosphorus and sediment runoff from tile drains on farms

[A Project to Evaluate the Efficacy of a Woodchip Bioreactor for Denitrification of Tertiary Effluent from the Bolton Wastewater Treatment Plant \(Lake George, Warren County, New York\)](#)

Jim Sutherland
The FUND for Lake George

Evaluate the effectiveness of a woodchip bioreactor at improving wastewater quality

[Upwelling in South Main Lake - Identifying Events and Assessing Impacts](#)

Eric Leibensperger, Tom Manley
SUNY Plattsburgh, Middlebury College

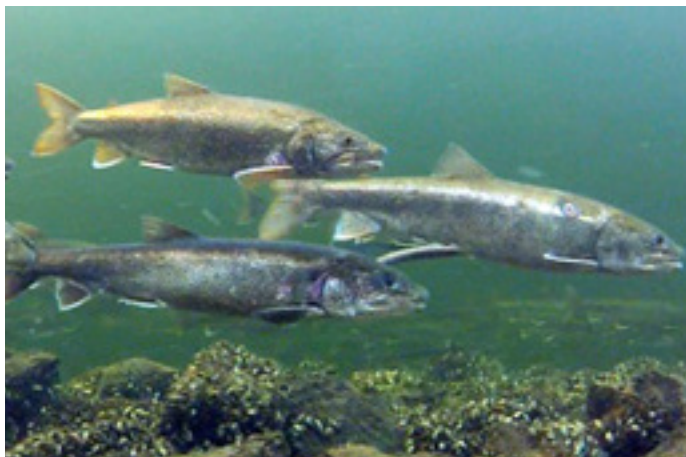
Model nutrient movement caused by upwelling to inform lake nutrient management under a changing climate

[Visualization Tools to Communicate Riverine Erosion Hazards and Improve Flood Resiliency in Headwater Communities of the Lake Champlain Basin](#)

Kristen Underwood, Mike Kline, Beverley Wemple, Donna Rizzo
University of Vermont

Identify management strategies for communities to reduce river erosion in headwater streams

2020-2022 Research Projects



[Assessing Winter Mercury Patterns in Lake Champlain Basins](#)

Roxanne Karimi, Andrew Schroth
Stony Brook University, University of Vermont

Determine bioavailability and bioaccumulation of mercury in fish during winter months to inform fish monitoring plans and consumption advisories

[An Environmental Monitoring Program to Evaluate the New York State Department of Transportation Road Salt Reduction Pilot Program in the Lake George Drainage Basin](#)

Jim Sutherland, Chris Navitsky
The FUND for Lake George, The Lake George Waterkeeper

Evaluate a multi-year road salt reduction program for its effectiveness in reducing chloride and sodium loading to Lake George

[Stormwater Subsurface Gravel Wetlands in Vermont](#)

Andres Torizzo, Eric Roy, Donna Rizzo
Watershed Consulting Associates, University of Vermont

Assess performance of permitted subsurface gravel wetlands for flow reduction and phosphorus capture and test potential improvements

[Three-Dimensional Habitat Occupancy of Wild Juvenile and Stocked Adult Lake Trout in Lake Champlain](#)

Ellen Marsden, Matthew Futia
University of Vermont

Identify and describe spawning locations and habitats of wild and stocked lake trout to inform lake trout conservation efforts in Lake Champlain