

Focus on phosphorus

HOW CAN WE REDUCE ALGAE OUTBREAKS IN THE LAKE ERIE WATERSHED?

Research biologist Bryan Page was in southern Ontario this autumn to wrap up a year of field research. DUC has been working with the St. Clair Region Conservation Authority to monitor eight restored wetlands to learn more about their role in removing phosphorus from farm field runoff.

“We’ve been collecting data from the water flowing into and out of recently restored wetlands adjacent to agricultural fields to analyze the amount and type of phosphorus retained,” Page explains. “Many factors influence a wetland basin’s ability to retain phosphorus, including the age and size of the wetland and any upstream drainage that moves water into the wetland.”

Page works out of DUC’s Institute for Wetland and Waterfowl Research, where he puts numbers to the ecosystem services provided by wetlands. Back in his Manitoba office, he’s crunching data that tell the story of how and when surface water moved in and out of the eight wetlands—and what was left behind in the sediments.

The stories told by these numbers will increase our understanding of wetlands and their contributions to clean water. Wetlands provide many benefits to the landscape that are well understood—including waterfowl habitat—but this study is intended to uncover some of the benefits that extend beyond habitat, as we look to wetlands to help improve surface water quality in southern Ontario.

“We increase our impact when we increase our understanding of the role of wetlands,” says Page. “Research is expensive because it requires careful planning and implementation with continual monitoring and adaptation. But the answers we discover make our conservation decisions more effective.”

Warming seasonal temperatures have aggravated the problem of excess nutrients in waterways and lakes. Wetlands store nutrients like phosphorus in sediments or use them to



DUC research biologist Bryan Page is overseeing DUC’s phosphorus research in southwestern Ontario.

grow aquatic vegetation that feeds many wild species. More wetlands on the landscape are clearly part of the answer to a big question: How can we protect lakes from blue-green algae overload?

DUC’s phosphorus research was funded in part by the Ontario Ministry of Natural Resources and Forestry and the U.S. Fish & Wildlife Service as part of continent-wide conservation action. This work supports an ambitious goal to sharply reduce phosphorus in Lake Erie, part of the Great Lakes Water Quality Agreement signed by Canada and the United States and delivered through the Canada-Ontario Lake Erie Action Plan. DUC is seeking funding to continue and expand this research.

“We are grateful to the landowners who generously agreed to be part of the study. DUC and its partners have constructed or restored more than 100 small wetlands in the Lake Erie watershed, and there is now a wetland project waiting list thanks to extraordinary interest from private landowners.”

We’re in this thing together

DUC is a member of the Thames River Phosphorus Reduction Collaborative, which is identifying and testing new technologies to intercept and remove phosphorus from agricultural runoff to protect Lake Erie. The steering committee includes agricultural organizations, municipalities, conservation authorities, First Nations, 4R Nutrient Stewardship, the drainage sector and environmental organizations—including DUC. Research sites have been established in the target region and testing will run for the next three years. The program is funded through Environment and Climate Change Canada’s Great Lakes Protection Initiative and the Canadian Agricultural Partnership. Learn more at www.thamesriverprc.com

