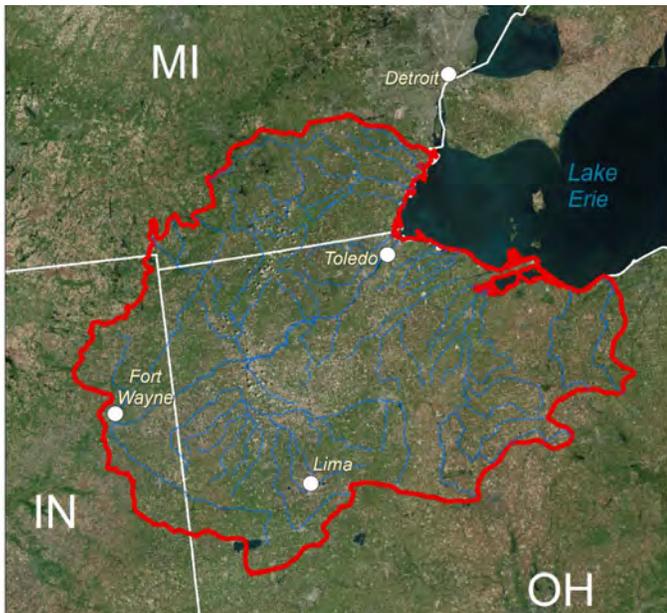




WESTERN LAKE ERIE BASIN INITIATIVE



Spread across three states and spanning nearly seven million acres, the Western Lake Erie Basin (WLEB) gathers water from farms, fields, towns and cities and delivers it to Lake Erie. Although the smallest of the Great Lakes by water volume, Lake Erie provides drinking water for 14 million people, boasts the most productive fisheries, and is an economic engine for the region.

Since 1995, dissolved phosphorus loading to the Western Lake Erie Basin from monitored tributaries has steadily increased, despite decreasing trends in total phosphorus and sediment loading. However, even with widespread adoption of conservation practices, approximately 800,000 cubic yards of sediment are deposited in the shipping channel for the Port of Toledo, the Great Lakes' second busiest port. Continued reductions in sediment, total phosphorus, and nitrogen are urgently needed.

While agriculture has a role to play in addressing water quality in the basin, the problem is bigger than agricultural production. The cause of algal blooms in the WLEB is complex; water temperature, lack of agitation, rainfall and runoff from farms and lawns, and legacy phosphorus in the system all contribute to the problem. Even as all sectors of society work to develop a comprehensive solution to this shared problem, it is likely there will still be a lag-time before the benefits of these efforts are measurable at a regional scale.

Effects of Conservation in the Basin

USDA's Natural Resources Conservation Service (NRCS) recently released a new report through its Conservation Effects Assessment Project (CEAP) that evaluates the impacts of voluntary conservation in the WLEB and conservation treatment needs. This report found that farmers are already contributing significant benefits through voluntary conservation activities they have undertaken on their operations and estimates that farmers have implemented at least one conservation practice on 99 percent of cropland acres.

These conservation investments are making headway toward reducing losses of sediment and nutrients from farm fields. As compared with a hypothetical scenario that simulates no conservation practices, the assessment estimates that conservation practices in use in 2012 reduced:

- annual sediment losses by 81 percent (or 9.1 million tons per year),
- annual total nitrogen losses by 36 percent (or 40.6 million pounds per year), and
- annual total phosphorous losses by 75 percent (or 11.4 million pounds per year).

Additional Conservation Needs

The CEAP report recognizes that WLEB croplands are diverse in terms of soils, farm fields, farming operations, and management, which creates differences in conservation needs and potential solutions. No single conservation solution will meet the needs of each field and farm. Comprehensive field-scale conservation planning and conservation systems are needed to accommodate different treatment needs within and across farm fields, while maintaining productivity.

Nutrient and erosion control needs vary across cropped fields, requiring management of unique zones or soils within field boundaries. Precision agriculture techniques that involve potential yield effects, zoned or gridded soil testing, and variable fertilizer rates can help achieve additional nitrogen and phosphorus loss reduction. Producers can use these technologies to identify low yielding or highly vulnerable portions of fields that may benefit from more intensive management or alternative uses.

Western Lake Erie Basin Initiative

To help address water quality concerns in WLEB, NRCS is starting a three-year initiative—for FYs 2016 through 2018—to invest additional NRCS financial and technical resources in the Basin. Because WLEB spans three states and includes millions of acres of cultivated cropland, NRCS will be using a science-driven approach to focus the Agency's limited resources to generate the most cost-effective results for agriculture and water quality.

Over the 3-year period, NRCS will be investing \$41 million in Environmental Quality Incentives Program (EQIP) assistance to expand and accelerate conservation opportunities through the WLEB Initiative. This is in addition to the \$36 million in NRCS state EQIP resources available in the WLEB. Combined, NRCS estimates that a total of almost \$77 million will be invested in the Basin over the course of FYs 2016-2018.

Importantly, the WLEB Initiative will complement—not supplant or replace—other conservation investments in the Basin. For example, the Conservation Stewardship Program and the Agricultural Conservation Easement Program contributions to phosphorus reduction are in addition to the phosphorus reductions to be achieved using EQIP funding. Farmers will have numerous opportunities to participate in other conservation programs; assistance provided through these other programs will also help address the health of the Basin's soils, and protect and improve the quality of the water.

Strategies to Address Water Quality Opportunities.

NRCS will work closely with its conservation partners to implement a comprehensive approach to protect and enhance water quality. The four elements of the initiative are:

- Avoid Excess Nutrient Application
- Control Nutrient and Sediment Movement
- Trap Nutrient and Sediment Losses
- Manage Hydrological Pathways to Reduce Nutrient and Sediment Losses

Targeting Conservation Solutions at Multiple Scales.

One of the key attributes to a landscape-scale approach is for the Agency and conservation partners to use science and technology to target conservation actions where the greatest opportunities exist to address natural resource concerns. This can include targeting actions in geographic regions of a large landscape to the locales in greatest need of conservation or focusing on the most effective system of conservation practices to address water quality concerns.

At the Basin scale, NRCS and partners will be working with farmers to promote systems of conservation practices to address the appropriate risks for sediment and nutrient losses. On the farm and field scale planning and conservation systems will be used to prevent and capture surface losses on at risk soils and farmlands. NRCS will help producers install conservation systems that avoid and manage losses through subsurface pathways.

NRCS will give priority consideration for financial assistance to these highly vulnerable soils, particularly in areas draining directly Lake Erie tributaries. Precision conservation planning and agriculture management, including GIS gridded soil testing, variable rate nutrient application, drainage water management and new technologies that micro-target areas within a field can be used to accelerate conservation in these areas.

Performance Goals

By the end of 2018, NRCS estimates that it will be able to assist farmers to apply conservation systems on about 870,000 acres of cultivated cropland across the WLEB – nearly 18 percent of the cultivated cropland in the basin. The WLEB Initiative will fund approximately 460,000 of these acres, while 410,000 will be funded through anticipated State allocations of technical and financial assistance. As a result of these conservation investments, the Agency will more than double the level of conservation applied in the WLEB; reducing edge-of-field losses by more than 640,000 pounds of total phosphorus (annually), 174,000 pounds of which is in the form of dissolved reactive phosphorus. These edge-of-field phosphorus reductions will ultimately reduce the phosphorus load reaching tributaries that empty into Lake Erie.

