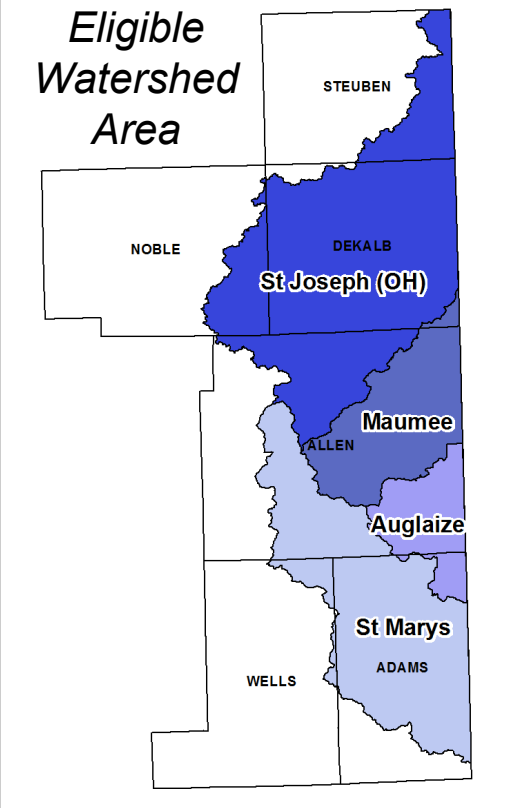
Description of the Program

The Environmental Protection Agency (EPA) is partnering with the Indiana State Department of Agriculture (ISDA), Division of Soil Conservation (DSC) in a three year grant by providing funds to address water quality issues related to phosphorus within the Western Lake Erie Basin (WLEB). This is due to the ongoing issues with excessive phosphorus levels found in Lake Erie that lead to harmful algae blooms.

One part of this program calls for conducting soil sampling on farm fields for three years to determine available phosphorus (P) levels in the soil. Through this program DSC employees will work with farmers to collect soil samples that will be analyzed for P levels by A&L Laboratories in Fort Wayne, IN. This data can be used by the participating farmers to help them determine proper P fertilizer management on their farms. Below is a map showing the Indiana counties and eligible area for this program in the WLEB Area.



INDIANA
STATE DEPARTMENT OF AGRICULTURE

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Great Lakes RESTORATION

Indiana State Department of Agriculture received financial support from the Environmental Proctection Agency for this project.

FREE Phosphorus Soil Sampling Program

for the

Western Lake Erie Basin

Indiana

Indiana State Department of Agriculture (ISDA) / Environmental Protection Agency (EPA) Grant

General Information

Phosphorus recommendations for farmers are based on the next crop and the quantity of nutrients available in the soil. Phosphorus is added as a fertilizer or as manure and can be lost through erosion, runoff or leaching. Reducing ag phosphorus loss by proper application and timing will improve farm economics and help minimize ecological issues. By conducting the soil sampling and providing farmers with nutrient data in their soils, it will allow them to apply only the amount of phosphorus needed by the crop for proper growth and development.

Soil sampling through this program calls for laboratory analysis conducted by A&L Great Lakes Laboratories in Fort Wayne, IN. The soil test will be the S1 Soil Test which includes Organic Matter, Available Phosphorus, Exchangeable Potassium, Magnesium, Calcium, Soil pH, Buffer pH, Cation Exchange Capacity, and Percent Base Saturation of Cation Elements.

Soil sampling for this program will **only** be done on Ag fields, which **does** include pastures. Sampling locations will be done based on soil type. The number of soil samples taken in a field depends on the soil types found in that field, but will be no more than 4 samples.

This program will be available to all participants of the INfield Advantage Program as well as any other farmer within the Indiana portion of the WLEB that is interested.

Soil Sampling Scenarios

1.) Sampling for New Fields Without Existing Soil Data:

If a farmer is not doing soil sampling and there is no existing data, then 0-8” samples will be taken and analyzed. This is regardless of the crop rotation and type of tillage management that is used. This will give baseline information for where the nutrients levels are and will provide information for future recommendations. Sampling schedule for the 2nd and 3rd year of the program will be conducted depending on the test results from the 1st years test, Soil Cation Exchange Capacity (CEC), and the cropping and tillage management system.

2.) Sampling In Fields With Existing Soil Data:

If the farmer is already doing soil sampling, and he/she is currently using a no-till system, then split samples will be taken at 0-3” and 3-6”. The stratification provided by the split samples will provide the farmer and his CCA data that shows there may be excess P in the top 3” of soil where it is most available to surface runoff through Dissolved Reactive Phosphorus. If surface tests results are medium-high and subsurface results are at a sufficient rate, phosphorus applications should be injected or banded into the soil profile where the plan most needs it. By banding the fertilizer into the soil profile, it prevents any disturbance of the soil through tillage or incorporation. Another recommendation could be to add a soil amendment, such as gypsum, to better bind the phosphorus to the field soil and not allow it to leave as easily in surface runoff and make more phosphorus available for the plant. Sampling schedule for the 2nd and 3rd year will be as a follow up to an S1 soil test and recommendation done from the 1st year.

If a farmer is already doing soil sampling and is currently using a tillage management system, there is nothing the new soil tests can provide on Phosphorus that he/she isn’t already getting.

3.) Sampling In Pastures

If the soil sample is being taken in a pasture, then the samples are taken from 0-5” in depth. Manure is often associated with pasture fields and can add an additional source of phosphorus that can contribute to high phosphorus levels in the soil surface, especially if the pasture field is used as part of the manure utilization plan. Conservation practices should be used to minimize runoff and erosion in the pasture because of the possible contamination source of the manure. Sampling schedule for the 2nd and 3rd year will be as a follow-up to an S1 soil test and recommendation done from the 1st year.