The U.S. and Canada set phosphorus reduction goals (40 percent of 2008 loads) for eight priority tributary watersheds for both total and soluble reactive phosphorus (SRP) during March-July. SRP refers to phosphorus that is in a dissolved state and is of particular interest because it is the easiest form of phosphorus for algae to use to fuel growth.

The targets for these tributaries are expressed in terms of the flow weighted mean concentration (FWMC) – which is a way to normalize the load for flow. This is important because much of the load is delivered during storm events. It means that efforts to reduce the load must also include efforts to reduce the amount of flow (runoff). FWMC also provides an important backstop and relative measure of whether phosphorus control efforts are actually having an impact. For example, in a dry year the load may be low due to less runoff, but the FWMC will still be high if the proportion of phosphorus in that runoff is high.

The calculation of spring load requires high frequency flow and water quality monitoring, which is now in place for all nearshore priority tributaries. Not all tributaries had monitoring in place going back to 2008.

Click on the watershed of interest to see available data.
The Maumee River watershed is located primarily in northwestern Ohio, with the western and northern boundaries extending into portions of Indiana and Michigan. The Maumee River watershed drains a total of 6,568 square miles (17,011 km$^2$), 5,024 (13,012) of which are in Ohio. Major municipalities in the watershed include Toledo, Fort Wayne, Defiance, Findlay, Lima, Van Wert, Napoleon and Perrysburg. The watershed is predominantly comprised of cultivated crops with some urban development, hay and pasture lands, and forest.

ANNUAL PHOSPHORUS TARGETS

The U.S. and Canada agreed to limit the total phosphorus (TP) load to Lake Erie’s central basin, which includes inputs from the St. Clair-Detroit River corridor, to 6,000 metric tons per year (MTA). This was based on modeling of the hypoxic (low oxygen) zone in the lake. The modeling indicated that 6,000 MTA is the maximum load that would result in an acceptable dissolved oxygen concentration of at least 2 milligrams per liter in the bottom waters during the summer stratified period. This means that during the warmest months of the year, oxygen in Lake Erie’s water would be high enough to reduce the “dead zone” that has been cause for concern in recent years.

Ten priority watersheds were identified and assigned a target to reduce annual total phosphorus loads to 40 percent of the 2008 load, by water year (October-September). With the exception of the Detroit River connecting channel, these loads are estimated at the mouth of the tributary, using three pieces of information: 1) water quality monitoring data collected at the most downstream stream gage for the river; 2) reported data for point source dischargers beyond this point; an 3) an estimate for the unmonitored area beyond the gage, using a simple ratio for unit-area load. The Detroit River is not monitored directly; instead the load is computed as a sum of upstream tributary loadings and point source dischargers.

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Annual TP Loading