

# NUTRIENTS BY THE NUMBERS

Lake Erie contains 2% of Great Lakes water—and 50% of the fish! It is the most productive Great Lake because it is the shallowest and warmest, and has the most NUTRIENTS.

Lake Erie receives more sediment, more nutrients, and more pesticides than any of the other Great Lakes, due to the surrounding and uses.

Lake Erie gets 80% of its water from the upper Great Lakes, 10% from direct precipitation, and 10% from Lake Erie Tributaries.

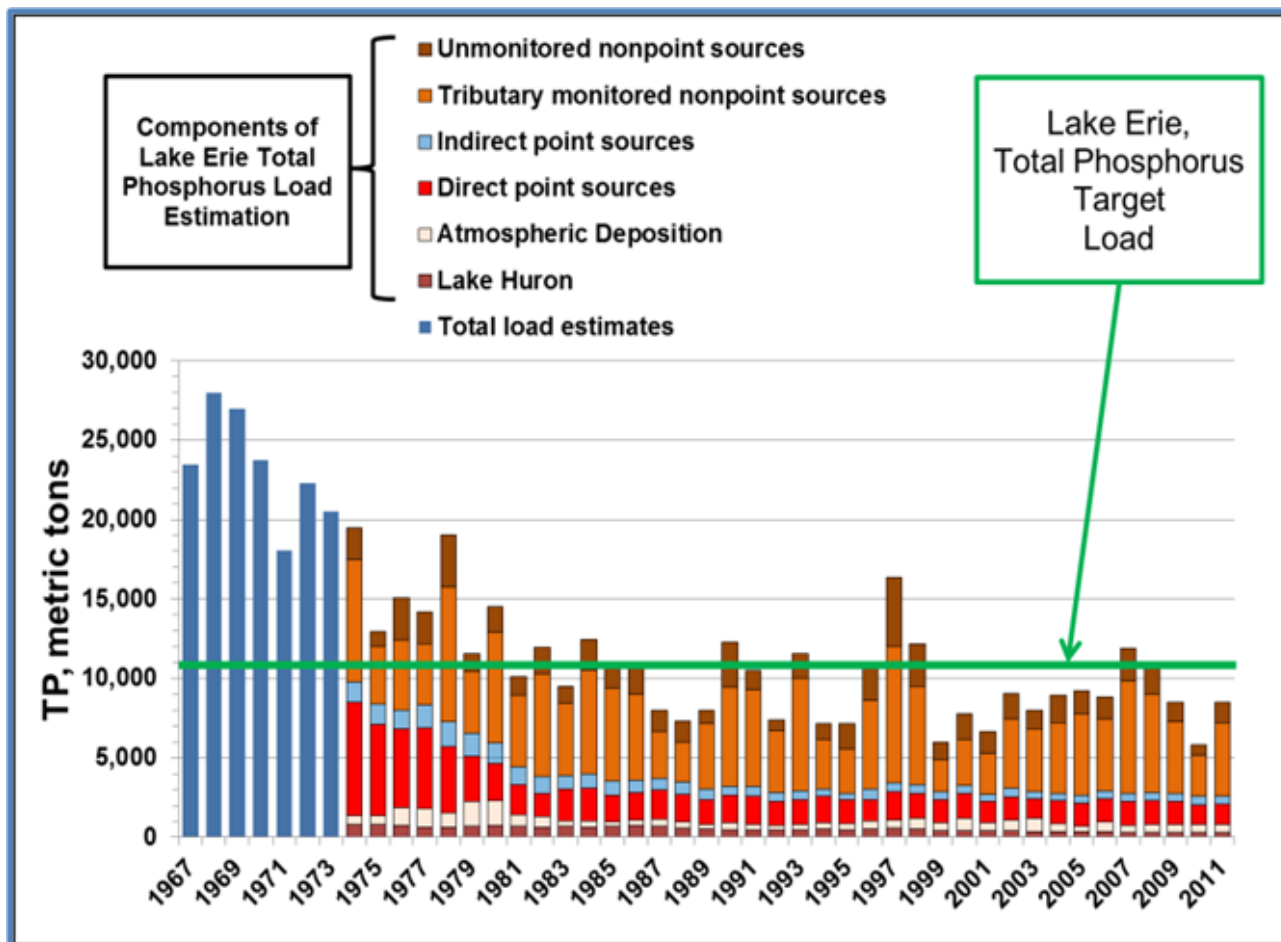
The Maumee River is the largest tributary to the Great Lakes and it drains 4.5 million acres of agricultural land and contributes 3% of the flow into Lake Erie.

The annual phosphorus load to Lake Erie has been reduced from 29,000 metric tons to less than 11,000; largely due to reductions from point sources (see chart below).

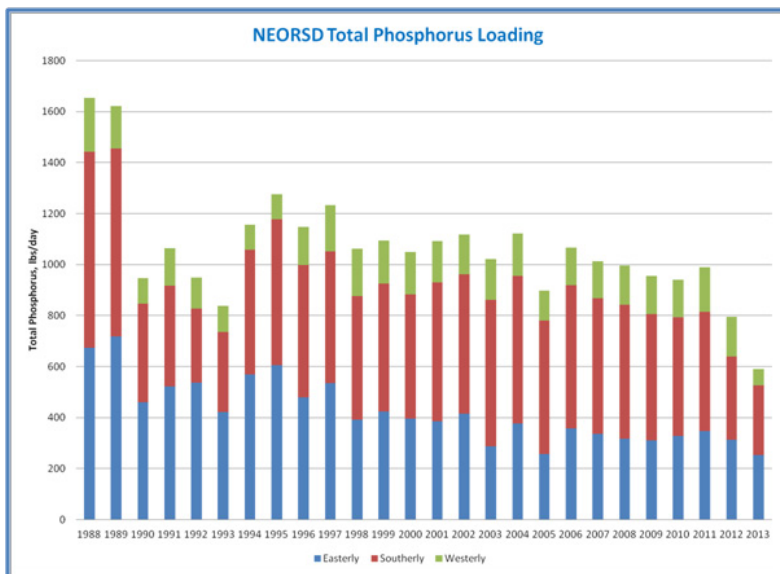
The amount of phosphorus that enters Lake Erie between March and June of each year is what is most important for algal growth.

MORE DATA ON REVERSE

## LAKE ERIE TOTAL PHOSPHORUS LOADING BY MAJOR SOURCE



## NEORSD TOTAL PHOSPHORUS LOADING



In 2013, the Northeast Ohio Regional Sewer District's three wastewater treatment plants removed 745 TONS of phosphorus. That's 86% of the phosphorus coming into the plants.

Since 1988, the District has reduced its phosphorus discharges by over 63%.

NEORSD 2013 Total Phosphorus		
	2013 Average Concentration (mg/L)	2013 Average Loading (pounds/day)
<b>Easterly</b>	0.35	252.71
<b>Southerly</b>	0.28	273.58
<b>Westerly</b>	0.53	63.51

Total WWTP Phosphorus Loading to Lake Erie		
	Tons per year	Portion of total TP
<b>External Load to Lake Erie</b>	9885	
<b>Ohio Lake Erie WWTPs</b>	707	7%
<b>NEORSD WWTPs</b>	193	2%
<b>External load data from 1998-2002, WWTP load from 2005-2006</b>		

NEORSD Current NPDES Total Phosphorus Permit Limits				
	Concentration (mg/L)		Loading (kg/day)	
	Weekly	Monthly	Weekly	Monthly
<b>Easterly</b>	1.5	1.0	880	587
<b>Southerly</b>	1.1	0.7	729	464
<b>Westerly</b>	1.5	1.0	199	132

Phosphorus Loading from NEORSD CSOs (from CSO Phase II)			
	2000	2007	LTCP
<b>Number of Overflows/Yr (typical year)</b>	3854	2957	194
<b>Volume (million gal/yr)</b>	5482.6	4949.1	775.1
<b>Total P Load (lbs/yr)</b>	100137.1	90393.4	14157.3
<b>Total P Load (tons/yr)</b>	50	45	7.1
<b>External TP load to Lake Erie (tons/yr):</b>	9885*	9885*	9885*
<b>% of total external TP load to Lake Erie from NEORSD CSOs</b>	0.5	0.5	0.1
<b>DRP Load (lbs/yr)</b>	19593.0	17686.6	2770.0
<b>DRP Load (tons/yr)</b>	9.8	8.8	1.4
<b>Total point and nonpoint DRP load to Lake Erie (tons/yr):</b>	2640.8*	2640.8*	2640.8*
<b>% of total DRP load to Lake Erie from NEORSD CSOs:</b>	0.4	0.3	0.1

\*Calculated based on 1998-2002 data. (No more-recent data available.)