

Phosphorus Targets in Ohio's Lake Erie Tributary TMDLs

Lake Erie Phosphorus Task Force
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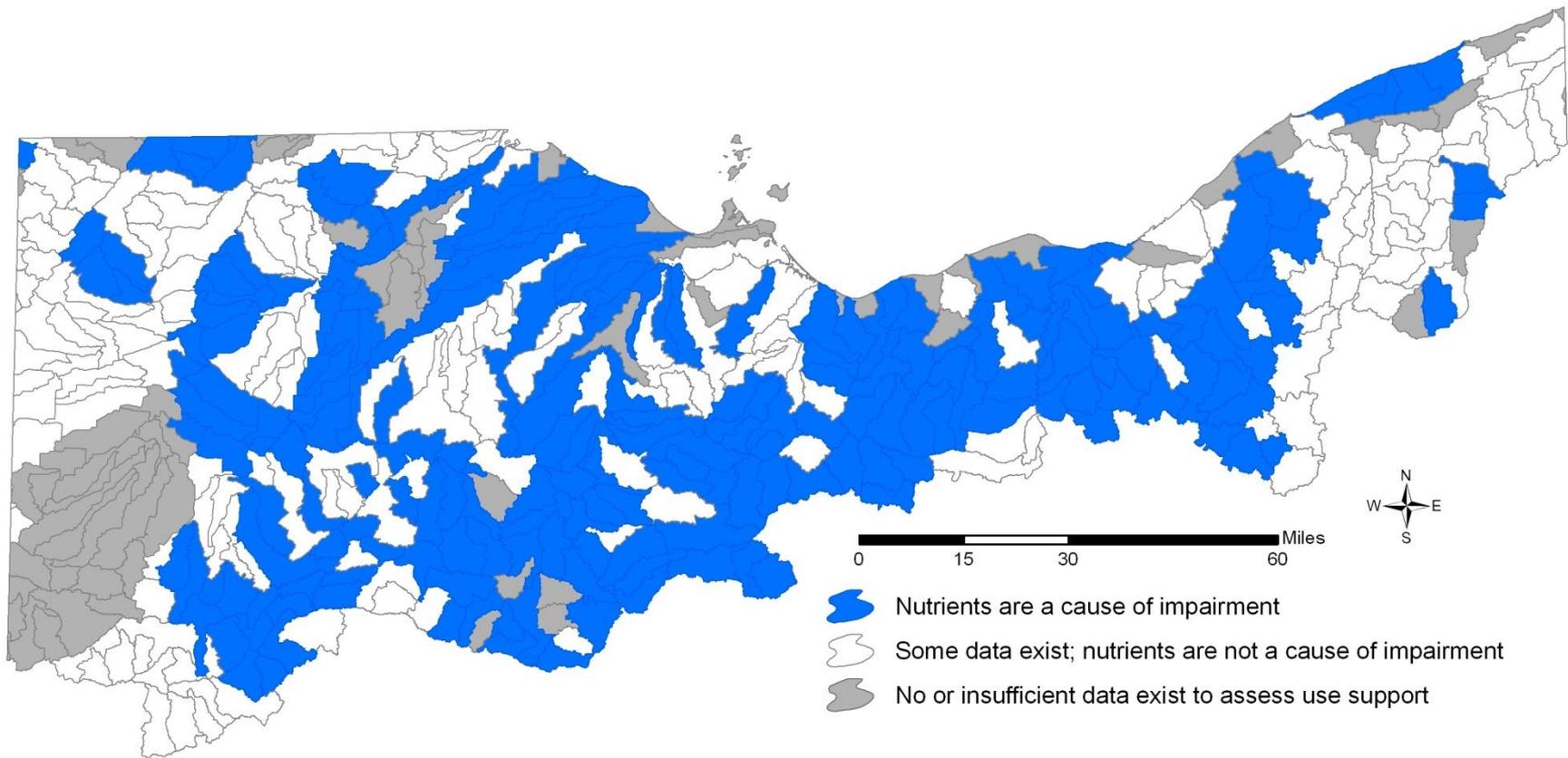
Clean Water Act Reporting: Sections 305(b) and 303(d)

- 305(b): report status of waters statewide
- 303(d) requires States to
 - List and prioritize impaired waters
 - For each impaired water, evaluate what action is needed to fix problems
- 303(d) is safety net for when the technological controls don't work

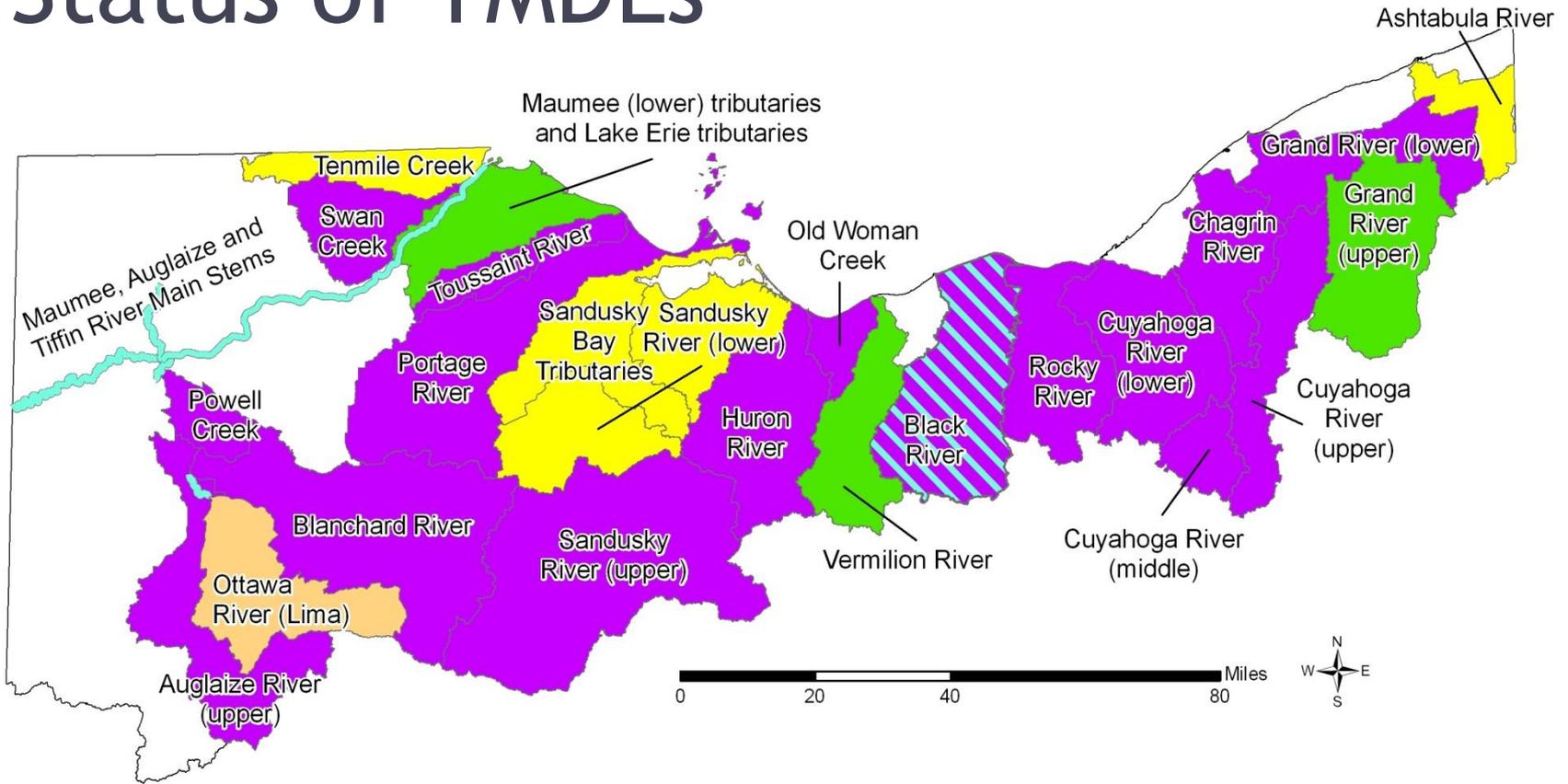
What Does “Impaired” Mean?

- Identified during our integrated watershed surveys (chemistry, biology, habitat, tissue)
- Depends primarily on meeting biological criteria; chemistry mostly used to indicate causes and sources of impairment
- Chemistry sampling is for total phosphorus

Impaired by Nutrients



Status of TMDLs



Legend: U.S. EPA approved Draft report Load analysis Assessment

Targets in Tributary TMDLs

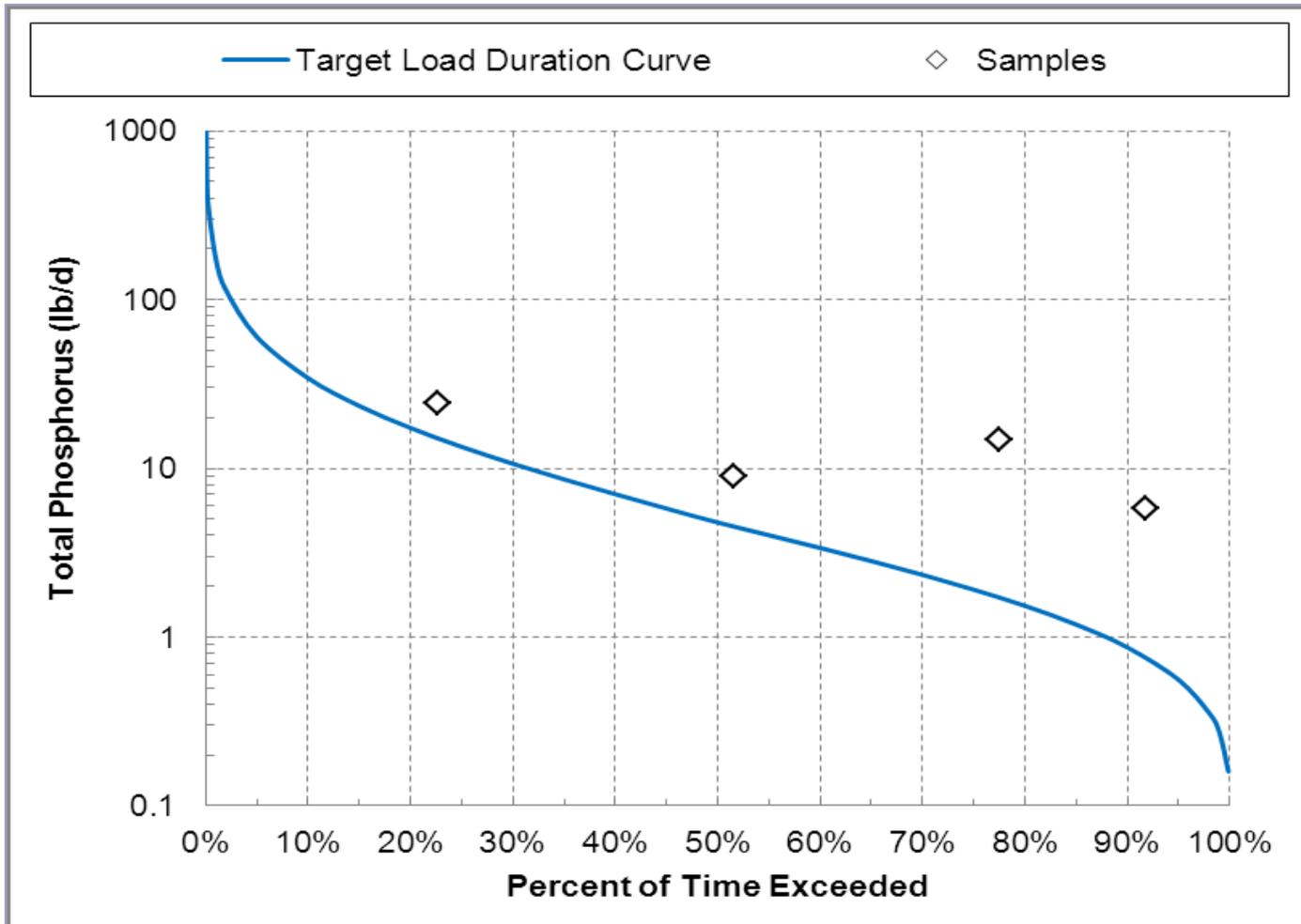
- No numerical phosphorus criterion in Ohio WQS
- Narrative criterion: Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae (OAC 3745-1-04, E)
- TMDL targets based on Ohio EPA data that associates phosphorus levels with healthy aquatic communities at ecoregion reference sites

Targets in Tributary TMDLs

- Best communities are where phosphorus lowest
- Scaled by drainage area size and ecoregion
- Typical targets (ug/l):

Headwaters	Wadable	Small River	Large River
< 20 sq mi	20 – 200 sq mi	200 – 1000 sq mi	>1000 sq mi
80	100	170	300

Concentration x Flow = Load, so you can use the target concentration to determine allowable load.



TMDL Results for Phosphorus

Project	Year	Phosphorus Load Reduction* (%)
upper Auglaize	2004	15 - 96
Blanchard	2009	0 - 90
Powell	2009	3 - 90
Swan	2010	19 - 96
Toussaint	2006	18 - 32
Portage	2011	3 - 100
upper Sandusky	2004	25 - 65
Huron	2005	5 - 43
Black	2008	54 - 59
Rocky (Plum)	2001	14
Cuyahoga	2000-03	28 - 76
Euclid	2005	41
Chagrin	2007	22

* Range of reductions needed at various points in watershed.