

Brief Overview of the National Aquatic Resource Surveys (NARS)

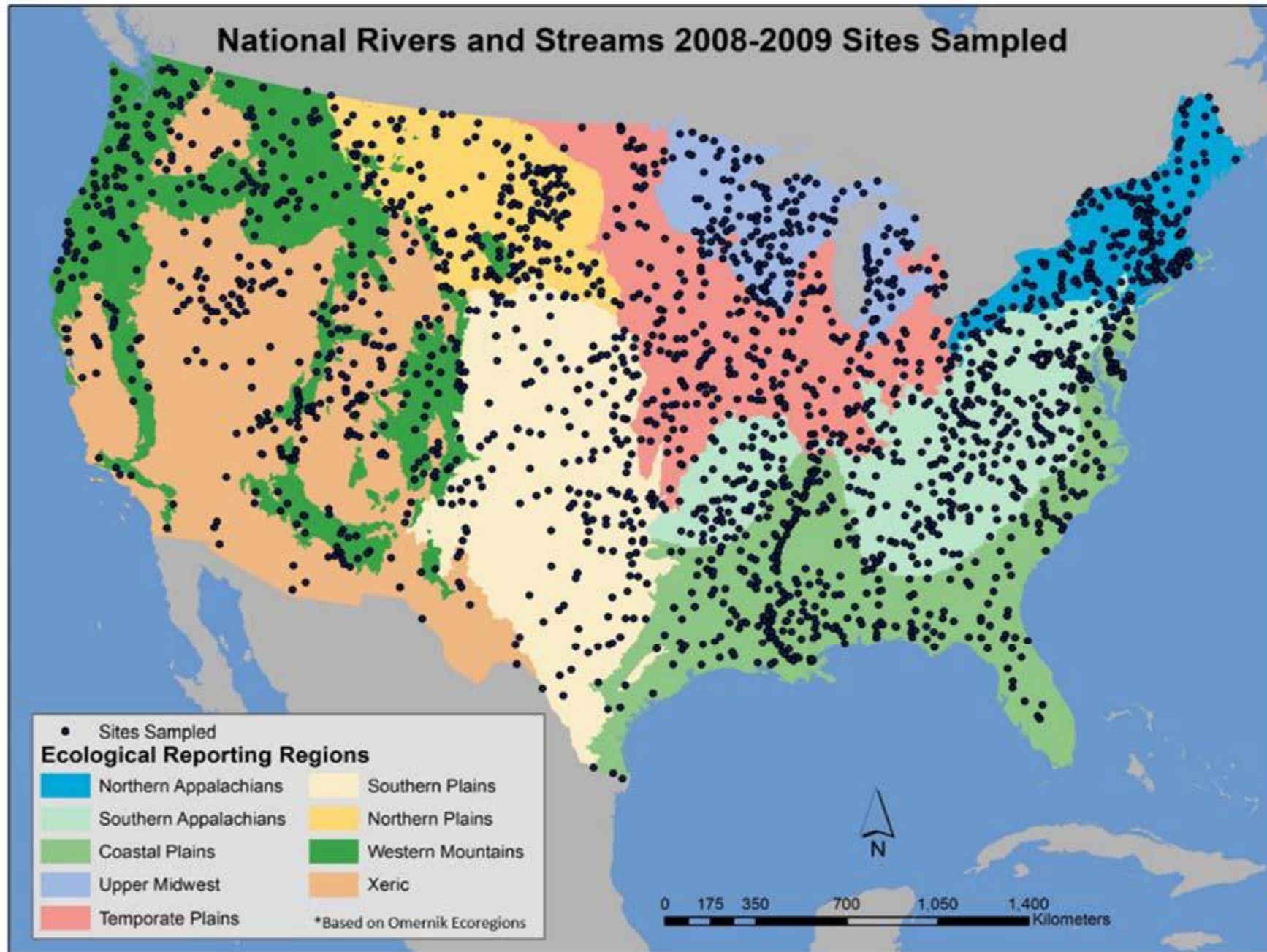
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National Aquatic Resource Surveys (NARS)

- Nationwide surveys of (Five year rotating schedule)
 - Streams and Rivers (combined and sampled over a 2 year period)
 - Lakes
 - Wetlands
 - Near-Coastal areas
- ~1000 sites per survey - Randomly selected
- Physical, chemical and biological indicators collected in each survey
- Approximately 50% of sites from previous surveys repeated
- 10% of sites within year revisited for QA purposes
- ~100 targeted reference sites for each survey
- Percentages of waterbodies in good, fair and poor condition are based on comparison to least-disturbed regional reference sites.

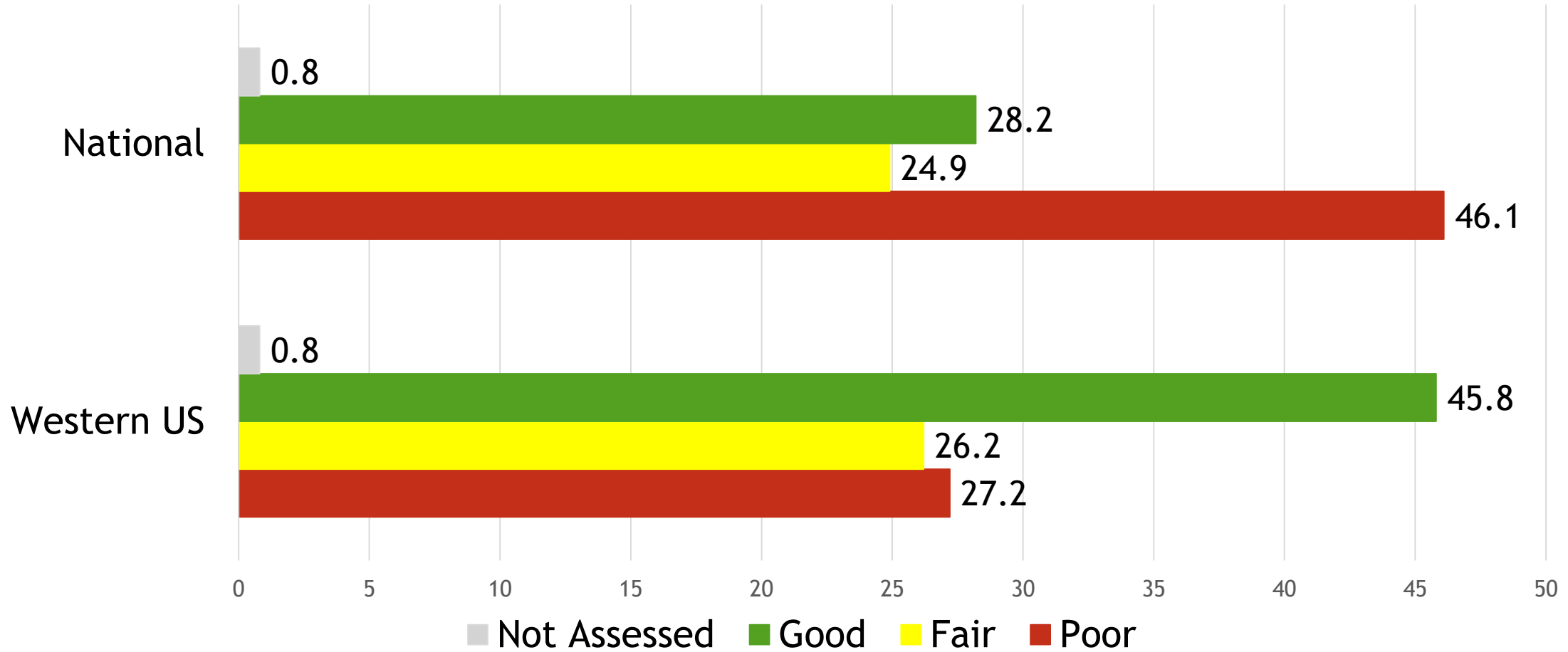
National Rivers and Streams 2008-2009 Sites Sampled



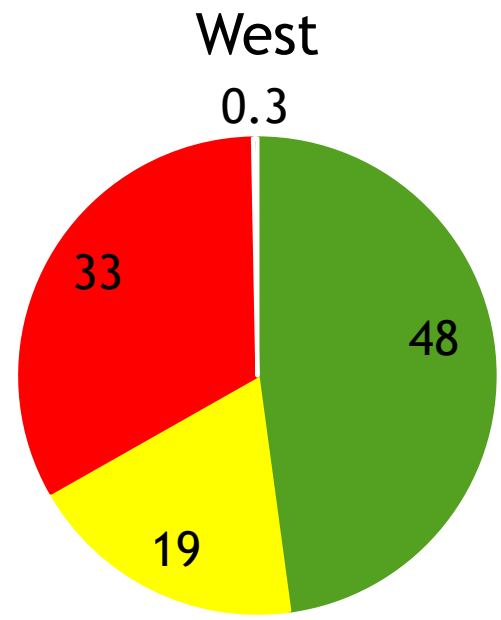
RESULTS

Biological condition of the nation's rivers and streams

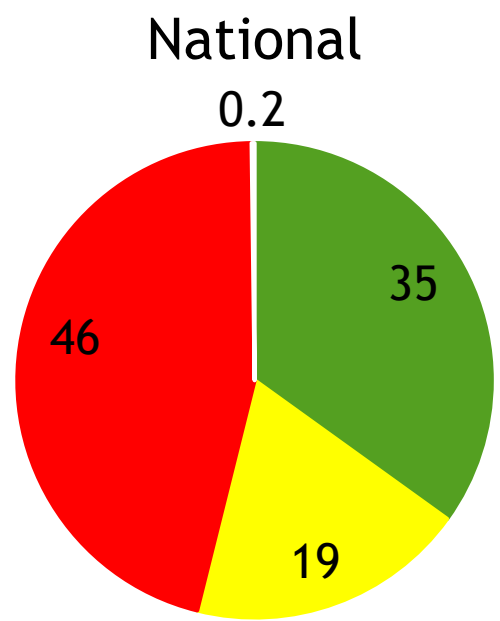
Based on the Macroinvertebrate Multi-metric Index (2008-2009 EPA/NRSA).



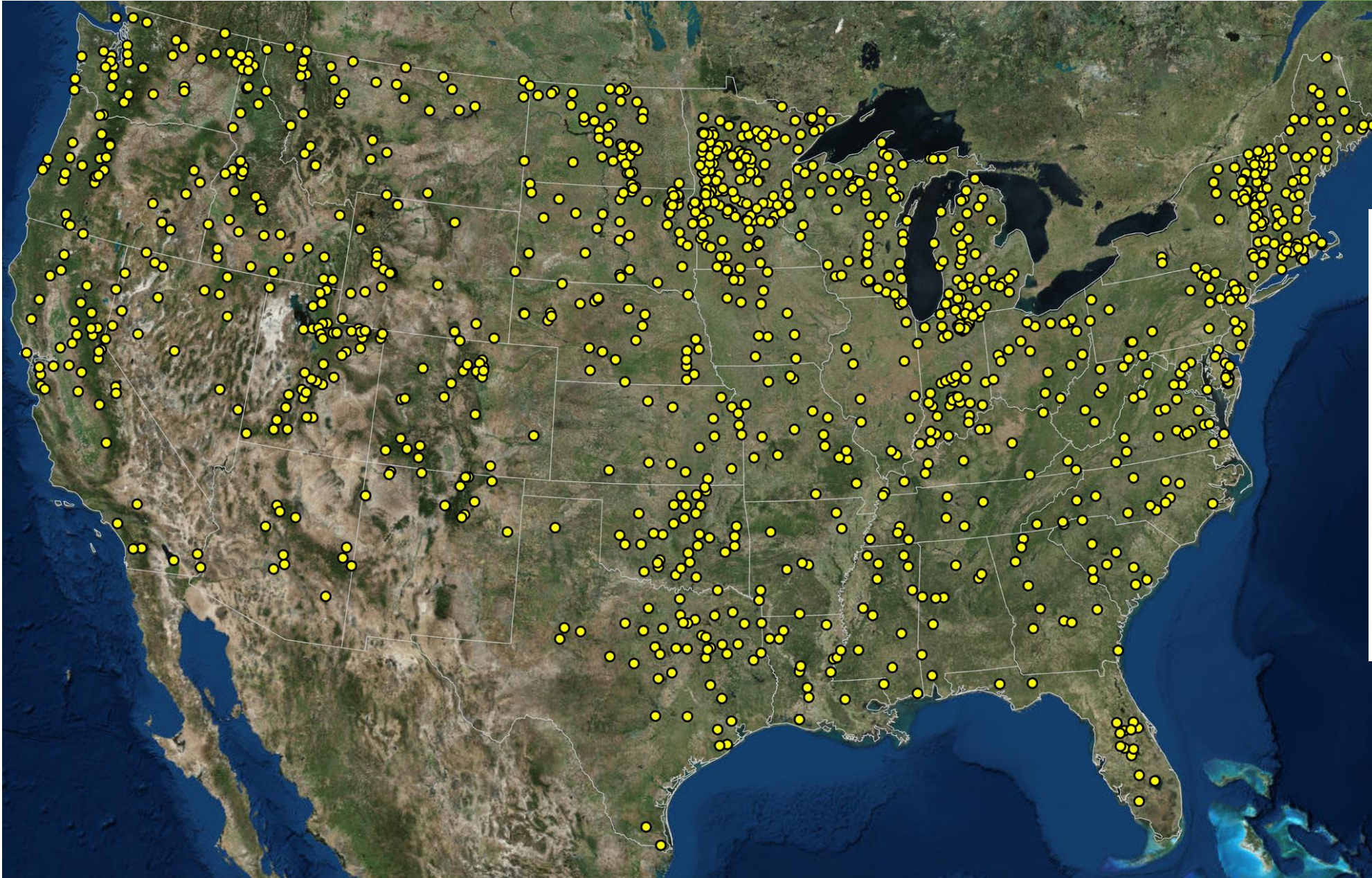
Total phosphorus concentrations in the nation's rivers and streams 2008-2009 EPA/NRSA).



■ Good ■ Fair ■ Poor ■ Not Assessed



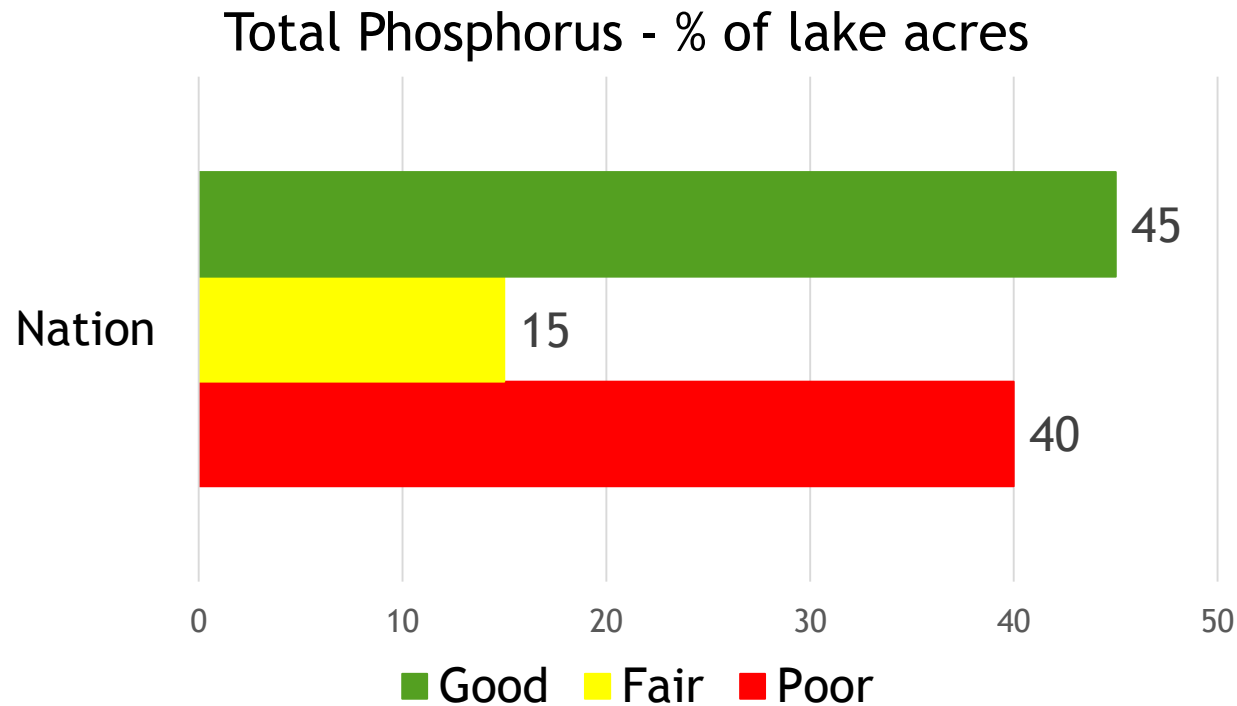
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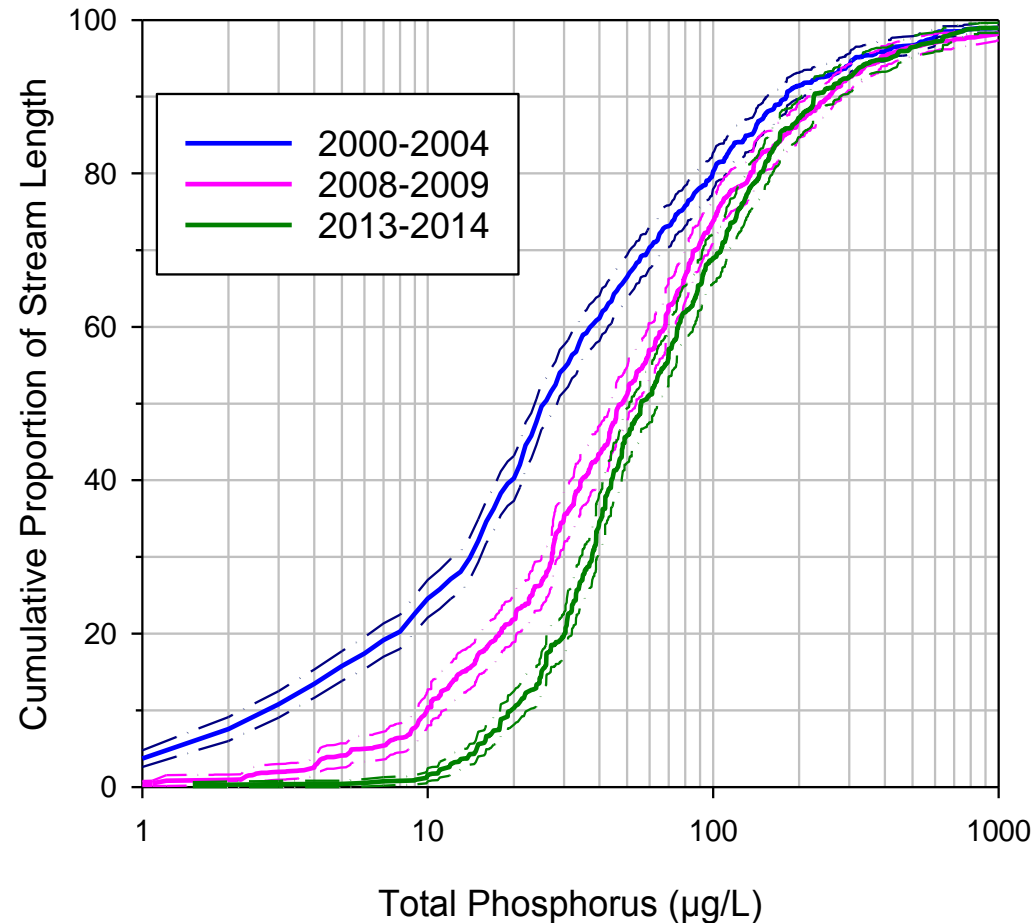
National
Lakes
Assessment
(NLA)
2012
Sampled
Sites

RESULTS

- The NLA used the World Health Organization recreational exposure risk guidelines for microcystin.
- Nationally, the algal toxin microcystin was detected in 39% of lakes, but very rarely at levels that represent moderate or high levels of exposure risk to the recreating public.



Change in Total Phosphorus in stream surveys

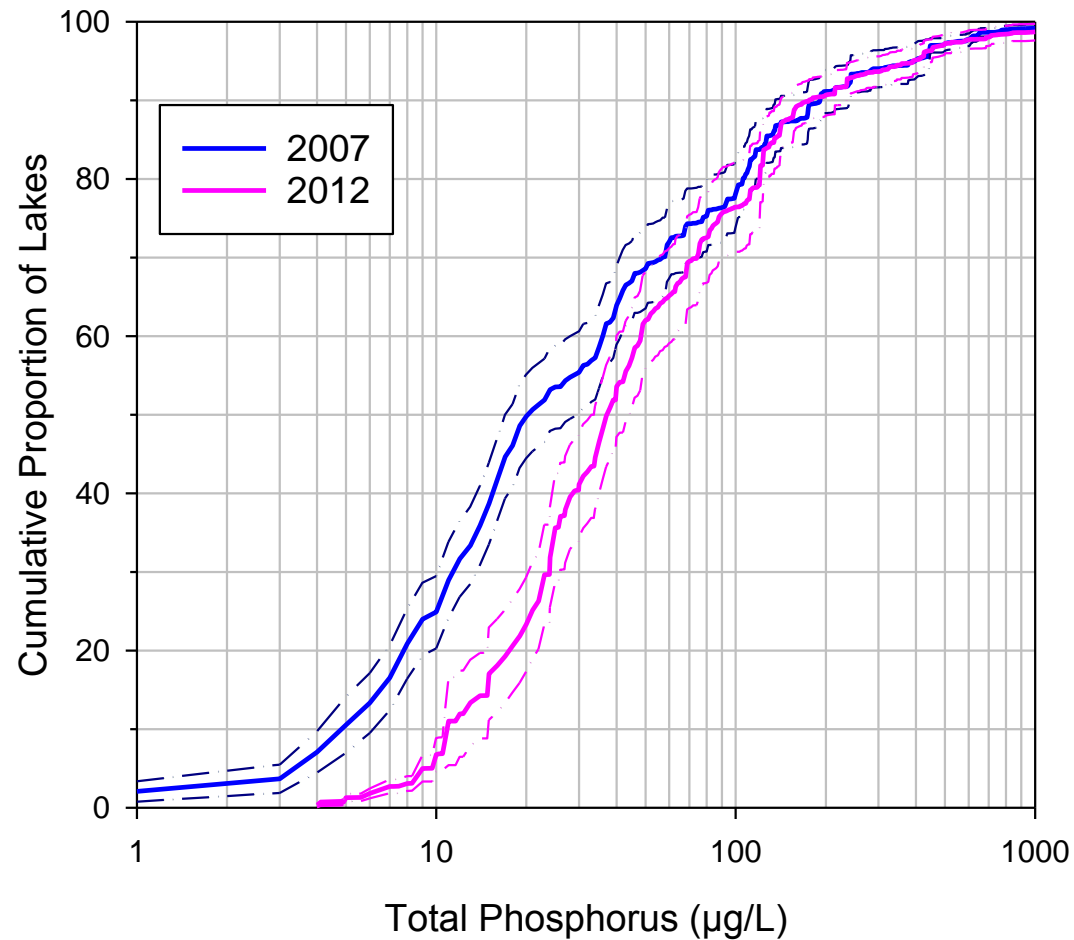


2004 median = 26 µg/L

2009 median = 48 µg/L

2014 median = 56 µg/L

Change in Total Phosphorus in Lake surveys



2007 median = 20 µg/L

2012 median = 37 µg/L

Reference Site Comparisons - Total Phosphorus

Streams - From 2000/2004 to 2008/2009

➤ Median change = $+2.2 \mu\text{g L}^{-1} \text{ yr}^{-1}$

- From 2008/2009 to 2013/2014

➤ Median change = $+2.9 \mu\text{g L}^{-1} \text{ yr}^{-1}$

Lakes - From 2007 to 2012

➤ Median change = $+1.6 \mu\text{g L}^{-1} \text{ yr}^{-1}$

[Stoddard, J.L., J. Van Sickle, A.T. Herlihy, J. Brahney, S. Paulsen, D.V. Peck, R. Mitchell, and A.I. Pollard. 2016. Continental-scale increase in lake and stream phosphorus: are oligotrophic systems disappearing in the United States? *Environmental Science and Technology* 50\(7\):3409-3415. doi:10.1021/acs.est.5b05950](#)

General information on NARS:

<https://www.epa.gov/national-aquatic-resource-surveys>

Data from NARS:

<https://www.epa.gov/national-aquatic-resource-surveys/data-national-aquatic-resource-surveys>