

Binational Cooperation on Reducing Harmful Algal Blooms

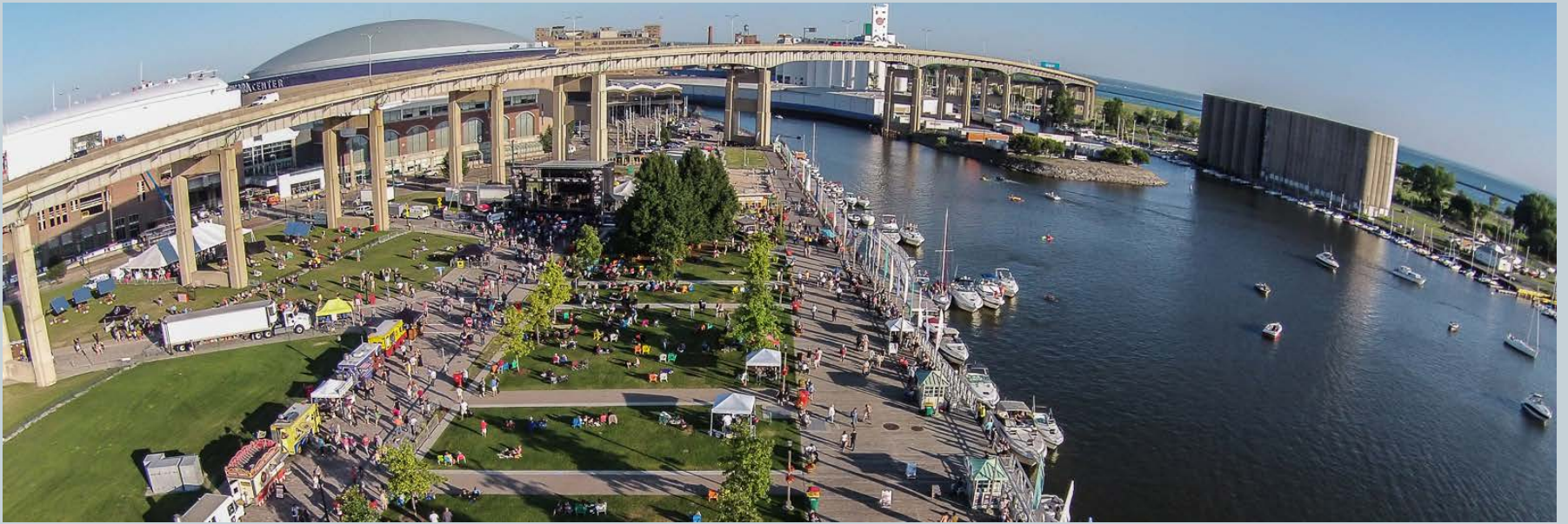
Dereth Glance
September 26, 2015



Saving Lake Erie, Again



Buffalo Canalside



Map Tour of the International Joint Commission of Canada and the US

Plus d'un siècle de coopération pour la protection des eaux communes.



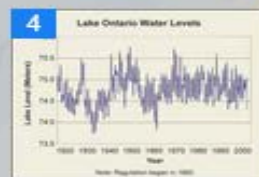
1 International St. Croix Watershed Board



2 International Lake Champlain-Richelieu



3 International St. Lawrence Board of



4 International Great Lakes -St. Lawrence



5 International Niagara Board of Control



6 Great Lakes Quality Agency



Microcystins are toxins produced by cyanobacteria.

Cyanobacteria are also known as blue-green algae and are ubiquitous in surface water when conditions are favorable for growth and formation of algal blooms.

Cyanobacteria release toxins upon cell death or lysis.



EPA Toxic Algae & Health Advisory 2015

California - Lake Chabot, Quarry Lakes, Temescal Lake, Klamath River
Connecticut - Sagg Pond (or Sagaponack Pond), Lake Pocotopaug (in East Hampton)
Florida- Crescent Lake & Dead Lake/ Haw Creek, Doctors Lake
Idaho – Fernan Lake and Avondale Lake (Panhandle Health District); Hayden Lake

Illinois - Monee Reservoir, Southern Illinois University Campus Lake

Iowa - Green Valley Beach
Kansas – Warnings: Brown County State Fishing Lake, Brown County; Chisholm Creek Park Lake, Sedgwick County; Mcpherson County State Fishing Lake, Mcpherson County; Melvern River Pond (Not Melvern Lake), Osage County; Memorial Park Lake, Barton County; Milford Reservoir (Zones A, B And C), Clay, Dickinson And Geary Counties; Nemaha State Fishing Lake, Nemaha County; Plainville Township Lake, Rooks County; Watches: Harvey County East Lake, Harvey County, Sabetha City Lake, Nemaha County
Kentucky - Barren River Lake, Campbellsville City Reservoir (Taylor County) Carpenters Lake (Daviss County) General Butler State Park Lake (Carroll County) Green River Lake Nolin Reservoir Rough River Lake Taylorsville Lake Willisburg Lake (Washington County Massachusetts- Jamaica Pond, Lake Siog, West Monponsett Pond, White Pond, Willis Pond
Missouri - Smithville
New Hampshire: Silver Lake, Robinson Pond, Norway Pond, Sondogardy Pond
Nebraska: Willow Creek Lake

New York - Evens Lake, Indian Pond, Maratooka Lake, Mill Pond-Watermill, Prospect Park Lake, Roaring Brook Lake, Rockland Lake, Warners Lake, Lake Agawam, Quaker Lake, Owasco Lake, Orange Lake, Old Town Pond, Lawsons Lake, Lake Placid, Lake Neatahwanta, Lake Innisfree, Lake Carmel, Kirk Lake, Kiamesha Lake, Deans Pond, Central Park Lake, Cazenovia Lake, Beaver Lake, Allegheny Reservoir, Wainscott Pond, Smith Pond, Saratoga Lake, Seneca Lake

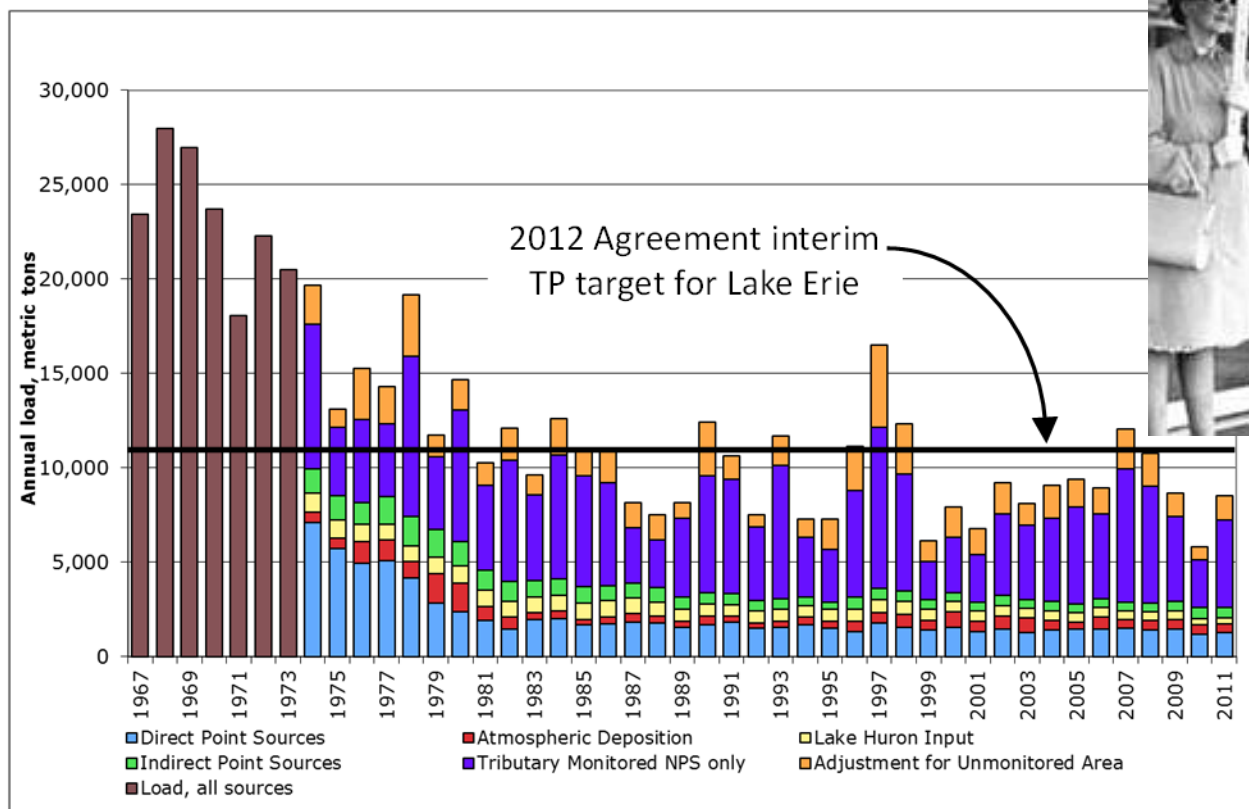
North Carolina - Waterville Lake, Albemarle Sound
North Dakota – Homme Dam, Park River

Ohio - Buckeye Lake State Park Crystal, Brooks Park, and Farifield Beach - Buckeye Lake, Windy Point and Grand Lake St. Marys State Park Campground Beach and Main Beach West and East - Grand Lake St. Marys, Kiser Lake, Pine Reservoir, Toledo Drinking Water Quality Test Reports Oregon –Lake Billy Chinook Reservoir (Jefferson County), Upper Klamath Lake, Agency Lake, Detroit Reservoir, Willamette River

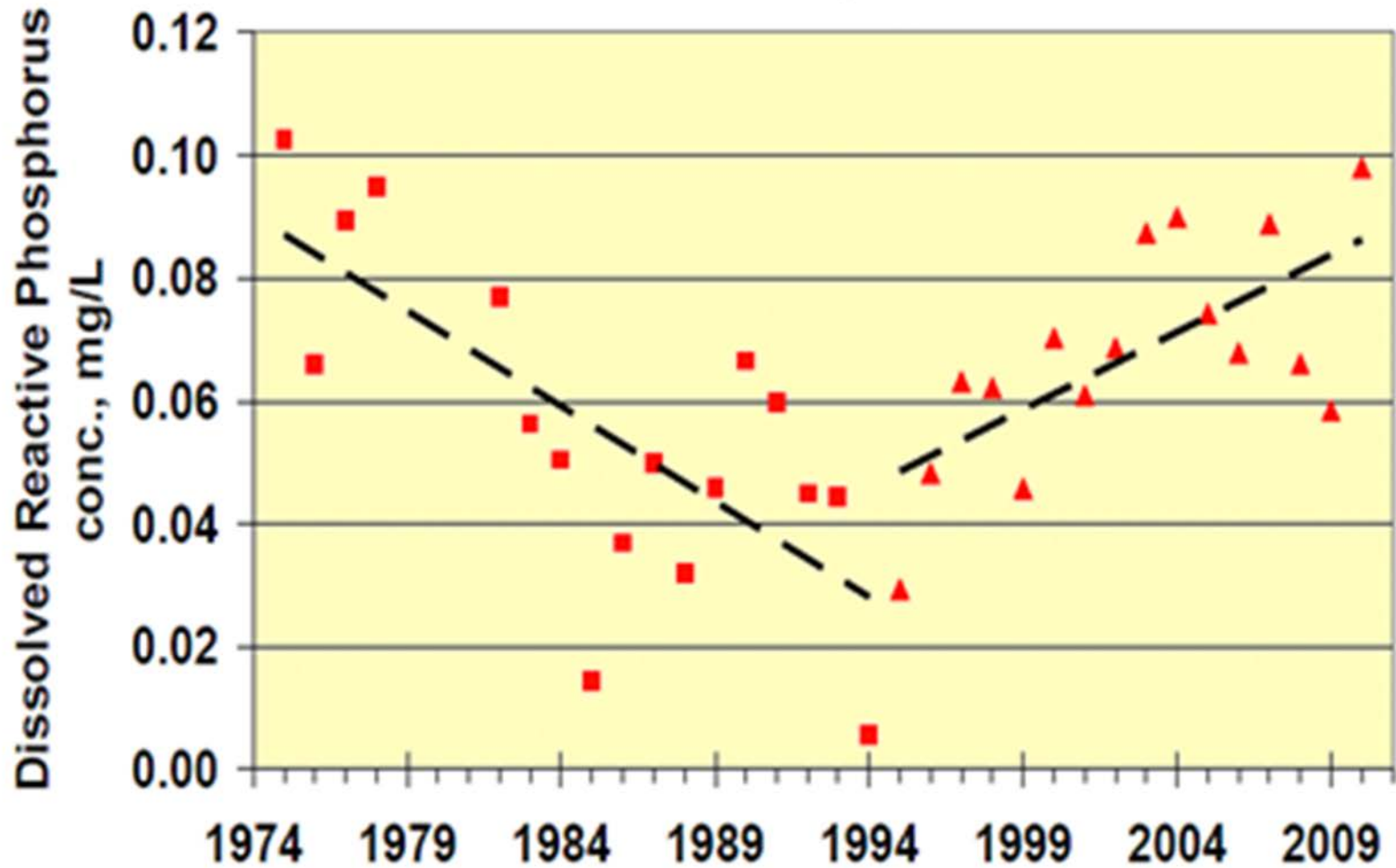
Pennsylvania - Shenango Lake

Rhode Island - Blackamore Pond
Utah – Blackridge Reservoir
Vermont - Lake Champlain
Washington – Bay Lake, Lake Washington
West Coast Toxic Algal Bloom - Central California Coast north to Washington and possibly Alaska

Did it before, Can do it again

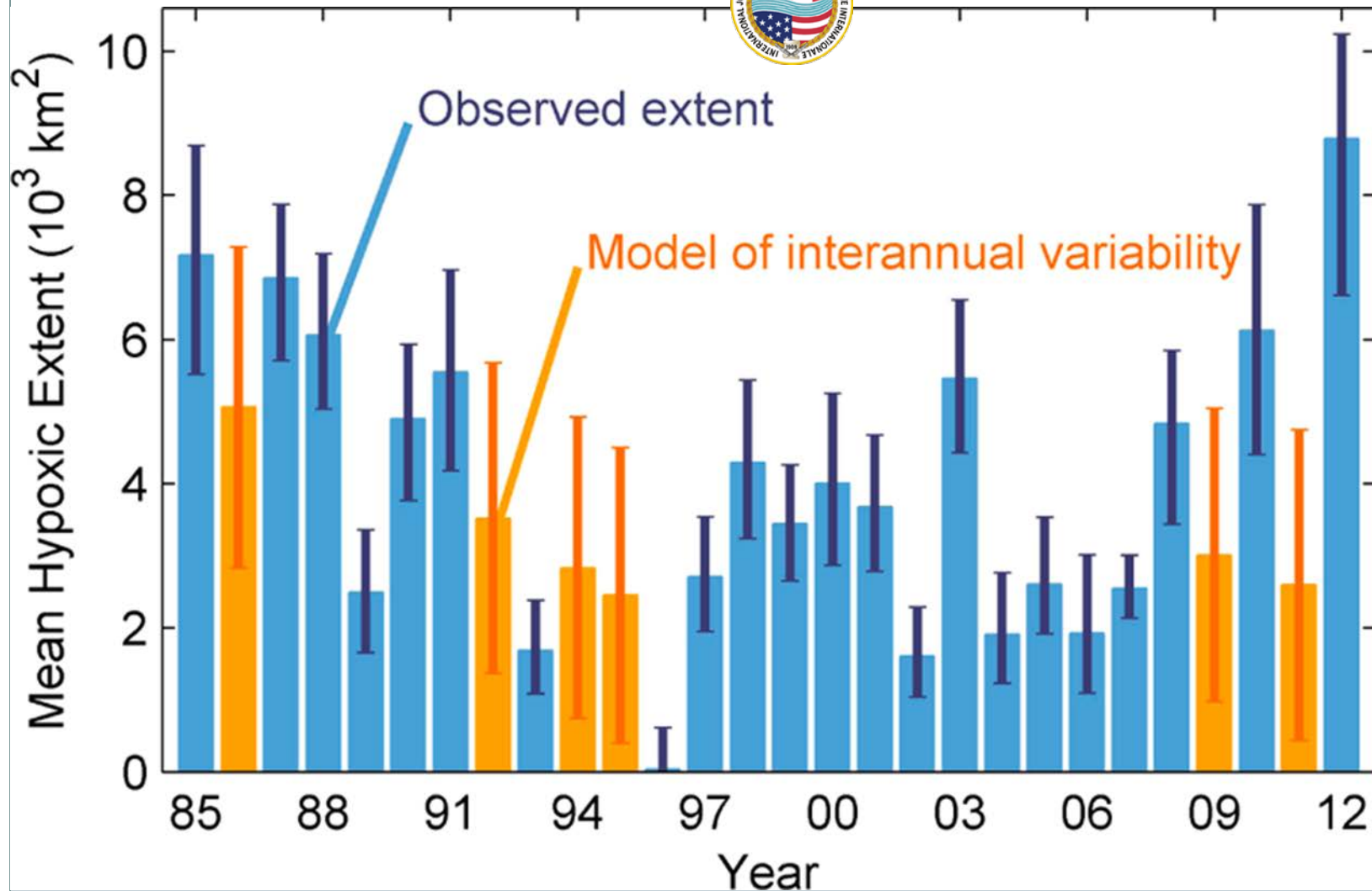


Dissolved Reactive Phosphorus Concentration



Source: Heidelberg University, unpublished data

Dead Zone



Record-Breaking Lake Erie Hypoxia during 2012 Drought
 Yuntao Zhou,† Anna M. Michalak,*,† Dmitry Beletsky,‡ Yerubandi R. Rao,§ and R. Peter Richards//
 Environment & Technology, accepted Dec 2014

Great Lakes Water Quality Agreement



Analyze and disseminate data & information

Tender advice and recommendations

Liaison and coordinate among binational institutions

Engage Public to increase the awareness of the inherent value of the Waters of the Great Lakes

Assess the Parties' progress to achieve objectives of GLWQA

Establish binational GLRO, GLWQB and GLSAB

A Balanced Diet for Lake Erie

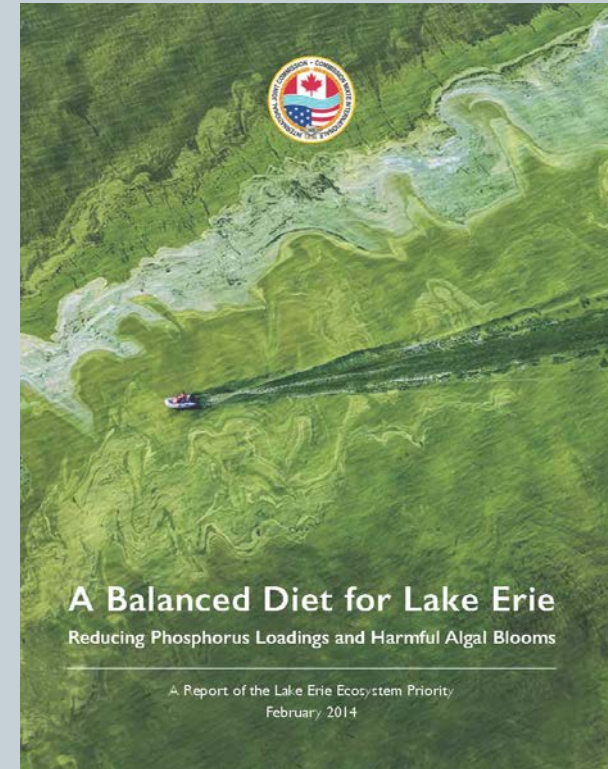


Harmful Algal Blooms and Hypoxia

1) Reducing severity and frequency of algal blooms require W. LE reductions of
DRP 41% reduction (150 MT)

Total annual P reduction: 39% (1600 MT)

2). Cutting Hypoxic area by 50% (2000 km) and Limiting 10 days a year by requires:
78% reduction in C. LE (550 MT)



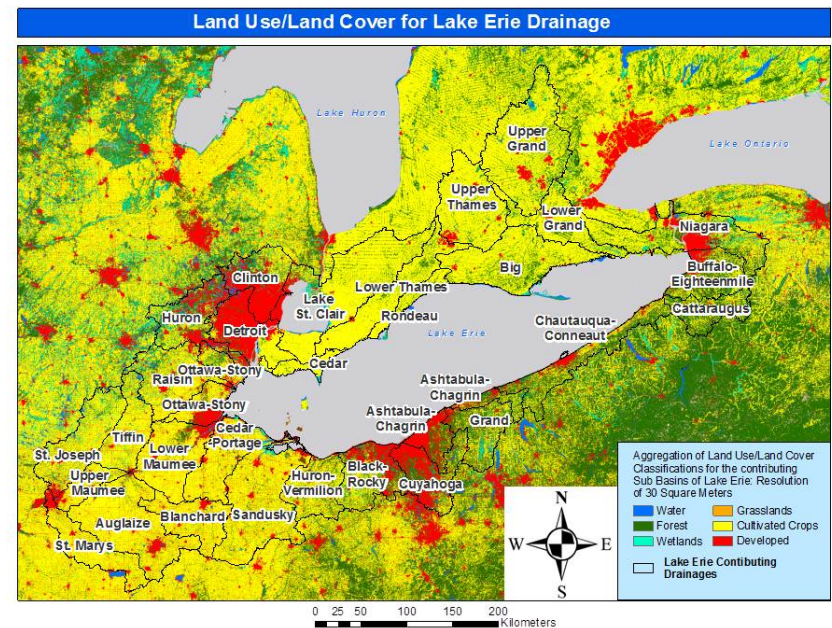
A Balanced Diet for Lake Erie



Achieving the Targets

- 1) Use Regulatory & Non regulatory measures ie TMDL in MI & OH
- 2). Expand BMPs:
 - *Avoid Autumn Application of Fertilizer,
 - *Restore 10% coastal wetlands (increase 2600 acres)
 - *Link crop insurance to farm conservation of nutrient programs
 - *Ban application of manure & biosolids on frozen or snow covered land.

3. Reduce urban runoff with GI, ban phosphorus in lawn fertilizers
- 4). Strengthen Monitoring, Research & Coordination



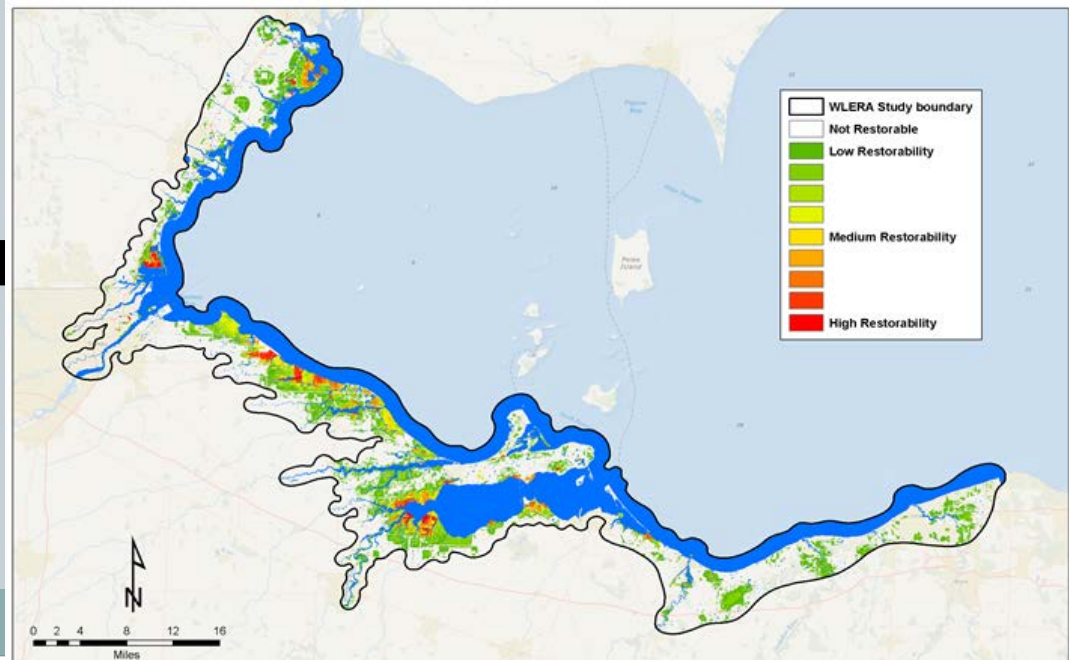
LEEP Forward



1. New Targets: Draft 40% reductions expected to be finalized in Feb 2016.

2. Promote BMPs to reduce DRP from Farm Fields: RFPs issued under GLRI, Farm Bill, and Canada-Ontario Agreement, etc. 4R in OH Ontario

3. Coastal wetland restoration: Biodiversity Conservation Strategies under development by Annex 7 Habitat and Annex 2 LAMPs.



LEEP Forward



5. Increase regulatory mechanisms to promote nutrient management and economic viability of agriculture sector: Ohio bill 150 requires NMPs for Commercial fertilizer application and exempts livestock. OH Senate Bill 1 banned winter application of manure

6. Implement Green Infrastructure: EPA \$4.5 million GL Shoreline Cities Grants announced in July 2014.



Health & Economy





Must Catch this Ball





Dereth Glance
Commissioner
International Joint Commission
202-716-7864
glanced@washington.ijc.org



Follow us
@ERIEIJC
@IJCSHAREDWATERS



Like us on Facebook
InternationalJointCommission.com

