



Lake Erie Millennium Network

Binational Research for the Millennium

STATUS OF LAKE ERIE: UNDERSTANDING THE NEARSHORE & ITS CONNECTIONS

The 8th Binational Meeting of the Lake Erie Millennium Network

February 21 - 23, 2017
University of Windsor
Windsor, Ontario, Canada

Convened by:

University of Windsor
Environment and Climate Change Canada
Ohio Sea Grant - F.T. Stone Laboratory, Ohio State University
Great Lakes Research Station, U.S. Environmental Protection Agency at Grosse Ile

PROGRAM

Status of Lake Erie: Understanding the Nearshore & Its Connections

The 8th Binational Meeting of the Lake Erie Millennium Network

Ambassador Auditorium, CAW Student Centre
University of Windsor
February 21 - 23, 2017

Tuesday, February 21st

12:45 p.m. Welcoming Remarks and Introductions
Dr. K. W. Michael Siu, Vice-President Research
Dr. Chris Houser, Dean of Science
Dr. Daniel Heath, Executive Director, Great Lakes Institute for Environmental Research

Theme 1: Nutrients & Responses - Assessment of Nutrient/Eutrophication Dynamics in Lake Erie

Moderator: Jeff Reutter, Ohio State University

- 1:10 p.m. **ALICE DOVE, Sean Backus, Matt Maccoux, Debbie Burniston and Vi Richardson**, Environment and Climate Change Canada
Water quality and nutrient load monitoring in the Great Lakes – with a focus on Lake Erie
- 1:30 p.m. **ERIC OSANTOWSKI, G. Warren**, U.S. Environmental Protection Agency
Long-term monitoring and assessment of water quality for Lake Erie 1983-2015
- 1:45 p.m. **CRAIG STOW**, Great Lakes Environmental Research Laboratory, NOAA
Target loads, strategies to meet them, lessons from the past
- 2:00 p.m. **LAURA JOHNSON, David Baker, Rem Confesor, Jack Kramer, Ellen Ewing, Barb Merryfield, Aaron Roerdink, and Jake Boehler**, National Center for Water Quality Research, Heidelberg University
Sources, transformation, and measurement of dissolved reactive phosphorus in Lake Erie tributaries
- 2:15 p.m. **MICHAEL BROOKER, M. Evert**, Ohio State University, **K. Longnecker, E. Kujawinski**, Woods Hole Oceanographic Institute, **and P. Mouser**, Ohio State University
Discerning organic phosphorus signatures in pollutant sources from Lake Erie tributaries

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- 2:30 p.m. **MARK R. WILLIAMS and Kevin. W. King**, U.S. Department of Agriculture
Decreasing phosphorus losses with drainage water management practices
- 2:45 p.m. **REMEGIO B. CONFESOR JR.**, National Center for Water Quality Research, Heidelberg University
Modeling the influence of agricultural practices on watershed export of phosphorus
- 3:00 p.m. **SHALIN KHOSLA**, Ontario Ministry of Agriculture, Food and Rural Affairs
Ontario greenhouse strategies to address phosphorus in the Great Lakes
- 3:15-3:45 p.m. BREAK**
- 3:45 p.m. **THOMAS BRIDGEMAN**, University of Toledo, **Gerald Matisoff**, Case Western Reserve University, **Richard Becker**, **Kenneth Gibbons**, University of Toledo, **John Bratton**, **Edward Verhamme**, Limnotech, **Sandra Kosek-Sills**, Ohio Lake Erie Commission
Assessment of nutrient/eutrophication dynamics in western Lake Erie
- 4:00 p.m. **JOHN F. BRATTON**, **Edward M. Verhamme**, **Todd M. Redder**, **Derek A. Schlea**, **Jeremy Grush**, and **Joseph DePinto**, LimnoTech
Connecting phosphorus loads to cyanobacteria biomass using the Western Lake Erie Ecosystem Model
- 4:15 p.m. **JUSTIN D. CHAFFIN**, Ohio State University, **Douglas D. Kane**, Defiance College
Accuracy of data buoys for tracking cyanobacterial blooms in Lake Erie
- 4:30 p.m. **GREGORY L. BOYER**, State University of New York, **Wayne W. Carmichael**, Wright State University, **Steven W. Wilhelm**, University of Tennessee, and **Susan B. Watson**, University of Waterloo
Microcystins and toxicity of HABS
- 4:45 p.m. **PARIS D. COLLINGSWORTH**, Purdue University, **R.T. Kraus**, U.S. Geological Survey, **J.C. May** and **G.J. Warren**, U.S. Environmental Protection Agency
What is the spatial extent of hypoxia in Lake Erie?
- 5:00 p.m. **CHRISTOPHER VANDERGOOT**, **C. Holbrook**, Great Lakes Science Center, US Geological Survey, **N. Nate**, and **C. Krueger**, Michigan State University
Using the GLATOS Network to understand fish behavior and

movement at unprecedented spatial scales

5:15 p.m. **Discussion**

6:00 -8:00 p.m. **Reception and poster viewing**

Wednesday, February 22nd

Theme 2: Delineating and understanding the nearshore of Lake Erie & the Connecting Channels

Moderator: Chris Winslow, Ohio State University

8:45 a.m. **Welcome, recap & announcements**

9:00 a.m. **PETER J. ZUZEK**, Zuzek, Inc., **J. Anderson, J. McKenna, J. Hatcher**,
Environment and Climate Change Canada

*GLWQA pilot application of the Nearshore Framework and
Baseline Habitat Survey, Long Point to Fort Erie study area*

9:15 a.m. **TIMOTHY W. DAVIS**, NOAA OAR Great Lakes Environmental Research
Laboratory, **T. Johengen, K. Meyer**, Cooperative Institute for Limnology
and Ecosystem Research, **D. Smith, G. Dick**, University of Michigan,
S. Ruberg, D. Gossiaux, NOAA OAR Great Lakes

Environmental Research Laboratory, **A. Burtner, D. Palladino**,
Cooperative Institute for Limnology and Ecosystem Research, **V. Deneff**,
M. Berry, University of Michigan, **S. Watson**, Environment and Climate
Change Canada, **J. Ciborowski**, University of Windsor, **G. Bullerjahn**,
R.M. McKay, Bowling Green State University, **G. Doucette, T. Mikulski**,
NOAA NOS National Centers for Coastal Oceans Science, **J. Birch**,
C. Scholin, Monterey Bay Aquarium Research Institute, **J. Mickett**,
University of Washington Applied Physics Laboratory

*Combining monitoring, advanced molecular techniques
and near real-time instrumentation to investigate the
response of cyanoHABs in Lake Erie and Lake St. Clair to different
environmental conditions*

9:30 a.m. **DAVID DEPEW, Sean Backus, Alice Dove, Luis Leon, Reza Valipour,**
Ram Yerubandi, Veronique Hiriart-Baer, Environment and Climate
Change Canada

*Cladophora in eastern Lake Erie: A synthesis of findings from the
Great Lakes Nutrient Initiative*

9:45 a.m. **SCUDDER MACKEY, D. Beck, L. Garrity, and J. Park**, Office of Coastal
Management, Ohio Department of Natural Resources

*Nature-based shoreline management – a new coastal
management paradigm*

STATUS OF LAKE ERIE: UNDERSTANDING THE NEARSHORE & ITS CONNECTIONS

10:00 a.m. **CHRIS HOUSER**, University of Windsor
*Natural and socio-economic pressures affecting longshore
redistribution of sediment and shoreline maintenance in Lake Erie*

10:15 - 10:45 a.m. **BREAK**

10:45 a.m. **MARY ANNE EVANS, N. King, and J. Scheffer**, Great Lakes Science
Center, US Geological Survey
*Benthic algae and submerged aquatic vegetation (SAV) in
Western Lake Erie*

Theme 3: Connecting Channels - St. Clair Detroit River System & Niagara River

Moderator: Michelle Selzer, Michigan Department of Environmental Quality, Office of the
Great Lakes

11:00 a.m. **DEBBIE BURNISTON, S. Backus and A. Dove**, Environment and
Climate Change Canada
*Water quality monitoring in the St. Clair River-Detroit River
corridor*

11:15 a.m. **SANDRA EBERTS, Alex Totten, Joe Duris and Chris Hoard**, U.S.
Geological Survey
Trenton Channel of the Detroit River monitoring

11:30 a.m. **MOLLY WICK, Matt Pawlowski, David Bolgrien, Ted Angradi, Jill
Scharold, Mark Pearson, Mari Nord, Beth Hinchey-Malloy, Rose
Ellison, Todd Nettesheim**, US Environmental Protection Agency
*EPA's National Coastal Condition Assessment: pilot research in
Great Lakes connecting channels*

11:45 a.m. **BRAD HILL**, Environment and Climate Change Canada
Upstream/downstream monitoring in the Niagara River (Tentative)

12:00 - 1:00 p.m. **LUNCH**

1:00 p.m. **SUSAN DOKA, E. Gertzen, A. Lewin, J. Midwood, K. Leisti, D.
Reddick, S. Larocque and R. Tang**, Great Lakes Laboratory for
Fisheries and Aquatic Sciences (GLLFAS), Fisheries and Oceans Canada
*Assessing fish habitat quality and supply in the nearshore of
Lakes and connecting channels*

1:15 p.m. **NGAN DIEP**, Ontario Ministry of Environment and Climate Change,
Alice Dove, T. Howell and S. Backus, Environment and Climate Change
Canada
*Lake St. Clair – Thames River water quality and harmful algal
bloom (HABs) assessmen*

- 1:30 p.m. **LISA RICHMAN**, Ontario Ministry of Environment and Climate Change, **Danielle Milani, Debbie Burniston and Chris Marvin**, Environment and Climate Change Canada
Trends in suspended sediment quality in the St. Clair – Detroit River corridor: assessment of management of contaminated sediments in dynamic riverine environments using sediment traps
- 1:45 p.m. **EDWARD ROSEMAN, Robin DeBruyne**, Great Lakes Scienc Center, US Geological Survey, **Justin Chiotti, James Boase**, US Fish and Wildlife Service, **Richard Drouin, Ontario**, Ministry of Natural Resources and Forestry, **Roger Knight**, Great Lakes Fishery Commission, **and Michelle Selzer**, Michigan Department of Environmental Quality
The St. Clair – Detroit River System initiative science and monitoring strategy
- 2:00 p.m. **APRIL WHITE**, Environment and Climate Change Canada **and Melanie Foose**, Michigan Department of Environmental Quality, Office of the Great Lakes
Connecting Channels – St. Clair Detroit Rivers systems and Niagara River
- 2:15 p.m. **MELANIE FOOSE**, Environment and Climate Change Canada **and Claire Sanders**, Detroit River Canadian Cleanup
Research and monitoring efforts in the Detroit River Area of Concern

2:30 - 3:15 p.m. BREAK

Theme 4: Status of the Lake Erie Food Web

Moderator: Elizabeth Hinchey-Malloy, U.S. Environmental Protection Agency

- 3:15 p.m. **ROBERT MICHAEL MCKAY**, Bowling Green State University
Life (and death) under ice: Lake Erie’s “other” algal bloom
- 3:30 p.m. **JAMES WATKINS**, Cornell Biological Field Station, **R.P. Barbiero**, CSC, **G.J. Warren, E.K. Hinchey Malloy**, U.S. Environmental Protection Agency, **J.K. Connolly, L.G. Rudstam**, Cornell Biological Field Station
Crustacean zooplankton in Lake Erie, 1997-2014
- 3:45 p.m. **ALEXANDER KARATAYEV, L. Burlakova, K. Mehler**, Great Lakes Center, Buffalo State College, **S. Bocaniov, P. Collingsworth, G. Warren, R. Kraus, and E. Hinchey**, U.S. Environmental Protection Agency
Biomonitoring using invasive species in a large lake: Dreissena distribution maps hypoxia zones

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- 4:00 p.m. **RICH DROUIN, Andy Cook, Megan Belore, Stephen Marklevitz, Tom MacDougall, Paulette Penton, Karen Soper**, Ontario Ministry of Natural Resources and Forestry
Status of major stocks – Lake Erie and Lake St Clair

Theme 5: Threats

Moderator: Luca Cargnelli, Environment and Climate Change Canada

- 4:15 p.m. **SHAHRAM TABE**, Ministry of the Environment and Climate Change, **Joanne Parrott**, Environment Canada, **Vince Pileggi, Monica Nowierski, Sonya Kleywegt, and Paul Yang**, Ministry of the Environment and Climate Change
Emerging contaminants in the Detroit River: occurrence, removal, and environmental Impacts

- 4:30 p.m. **KEN G. DROUILLARD, J. Lafontaine, A. Grgicak-Mannion, J. Demers, K. McPhedran, G.D. Haffner**: University of Windsor
Spatial and temporal patterns of priority contaminants in sediments of the Huron-Erie Corridor

- 4:45 p.m. **BERNARD CRIMMINS, Hao Zhou, Sadjad Baygi**, Clarkson University, **James Pagano**, State University of New York at Oswego, **Michael Milligan**, State University of New York at Fredonia, **Philip Hopke**, Clarkson University, **Thomas Holsen, Elizabeth Murphy** US EPA, Great Lakes National Program Office
Contemporary bioaccumulation in the Lake Erie: results from the Great Lakes Fish Monitoring and Surveillance Program

- 5:00 p.m. **Discussion**

- 5:30 p.m. **Public Keynote Address**
Dr. JEFF M. REUTTER, Ohio Sea Grant & F.T. Stone Laboratory, Ohio State University:
Lake Erie in a Nutshell: What we need to know and why we should care

- 6:00 p.m. **Evening Social & Poster Viewing**

Thursday, February 23rd

Theme 6: Identifying & Proposing Solutions

Moderator: Russell Kreis, Large Lakes Research Laboratory, US EPA, Grosse Ile

- 8:30 a.m. **KEVIN CZAJKOWSKI, J. Gottgens**, University of Toledo
Study of the near-shore environment on the south shore of Lake Erie

- 8:45 a.m. **MARY THORBURN**, Ontario Ministry of the Environment and Climate Change, **Natalie Feisthauer and Pamela Joesse**, Agriculture and Agri-Food Canada
Characterization of Canadian watersheds in the Lake Erie basin
- 9:00 a.m. **STEVE RUBERG**, NOAA / Great Lakes Environmental Research Laboratory, **Tom Johengen**, Cooperative Institute for Limnology and Ecosystem Research, **Andrea Vander Woude**, Global Science and Technologies, Inc., **Tim Moore**, University of New Hampshire, **Tim Davis**, NOAA / Great Lakes Environmental Research Laboratory, **Danna Palladino**, **Russ Miller**, Cooperative Institute for Limnology and Ecosystem Research, **Ron Muzzi**, **Steve Constant**, **Kyle Beadle**, NOAA / Great Lakes Environmental Research Laboratory
Emerging solutions supporting ecosystem research, monitoring, and forecasting
- 9:15 a.m. **REBECCA LOGSDON MUENICH**, **Donald Scavia**, **Jen Read**, **Branko Kerkez**, **Awoke Teshager**, **Sergei Bocaniov**, **Yao Hu**, University of Michigan, **Margaret Kalcic**, Ohio State University, **Yu-Chen Wang**, **Colleen Long**, **Lynn Vacarro**, University of Michigan
Assessing the sources and management options for Detroit River nutrient loads to Lake Erie

Theme 7: Hypotheses, Research needs and Planning

- 9:30 a.m. **Jan Ciborowski**, University of Windsor
Charge to the conference: Coordinating Research
- 9:45 a.m. **Research needs and Planning in Breakout groups (Tentative Topics)**
SCDRS research questions & needs
Nearshore-offshore Interactions and exchanges - research questions & needs
Understanding toxicity of Harmful Algal Blooms
Delivery of materials to the land-lake interface - assessment & implications
Aquatic invasive species research needs
- 12:00 p.m. **Chris Marvin**, Environment and Climate Change Canada
Reporting out (Lunch Provided)
- 12:45 p.m. **Jan Ciborowski**, University of Windsor
Final comments & next steps
- 1:00 p.m. **Adjourn**

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Special workshops:

1:15 - 3:00 p.m. **New Investigators Workshop** (Please Preregister online)

3:00 - 6:00 p.m. **Brainstorming Workshop** (Please preregister online)