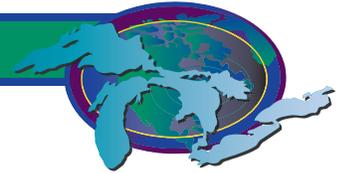


US EPA ARCHIVE DOCUMENT



## 6.0 Acronyms and Abbreviations

### Agencies and Organizations

ATSDR	Agency for Toxic Substances and Disease Registry
CAMNet	Canadian Atmospheric Mercury Network
CCME	Canadian Council of Ministers of the Environment
CDC	Center for Disease Control (U.S.)
CIS	Canada Ice Service
CORA	Chippewa Ottawa Resource Authority
CWS	Canadian Wildlife Service
DFO	Department of Fisheries and Oceans Canada
EC	Environment Canada
ECO	Environmental Careers Organization
EERE	Office of Energy Efficiency and Renewable Energy (U.S. Department of Energy)
EIA	Energy Information Administration (U.S.)
EMAN	Ecological Monitoring and Assessment Network
FSC	Forest Stewardship Council
GERA	Gaia Economic Research Associates
GLBET	Great Lakes Basin Ecosystem Team (USFWS)
GLC	Great Lakes Commission
GLCWC	Great Lakes Coastal Wetlands Consortium
GLFC	Great Lakes Fishery Commission
GLNPO	Great Lakes National Program Office (U.S. EPA)
HPMS	Highway Performance Monitoring System (U.S.)
IJC	International Joint Commission
IUCN	International Union for the Conservation of Nature
MDEQ	Michigan Department of Environmental Quality
MDNR	Michigan Department of Natural Resources
NAPS	National Air Pollution Surveillance (EC)
NHEERL	National Health & Environmental Effects Research Laboratory (U.S. EPA)
NISC	National Invasive Species Council
NOAA	National Oceanic and Atmospheric Administration
NRCan	Natural Resources Canada
NRCS	Natural Resources Conservation Service (USDA)
NRRI	Natural Resources Research Institute (University of Minnesota – Duluth)
NYSDEC	New York State Department of Environmental Conservation
ODNR	Ohio Department of Natural Resources
ODW	Ohio Division of Wildlife
OFEC	Ontario Farm Environmental Coalition
OGS	Ontario Geological Survey
OIPIS	Ontario Invasive Plant Information System
OMAF	Ontario Ministry of Agriculture and Food (now OMAFRA, see below)
OMAFRA	Ontario Ministry of Agriculture, Food and Rural Affairs
OMOE	Ontario Ministry of Environment
OMNR	Ontario Ministry of Natural Resources
OSCIA	Ontario Soil and Crop Improvement Association
ORISE	Oak Ridge Institute for Science and Education
PDEP	Pennsylvania Department of Environmental Protection
REMAP	Regional Environmental Monitoring and Assessment Program (U.S.)
TNC	The Nature Conservancy
UKIH	United Kingdom Institute of Hydrology
USDA	U.S. Department of Agriculture
U.S. EPA	U.S. Environmental Protection Agency
USFDA	U.S. Food and Drug Administration

USFWS	U.S. Fish and Wildlife Service
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
WBCSD	World Business Council for Sustainable Development
WDNR	Wisconsin Department of Natural Resources
WDO	Waste Diversion Organization (Ontario)
WiDPH	Wisconsin Department of Public Health
WWF	World Wildlife Fund (Canada)

## Units of Measure

C	Celsius
cm	centimeter, 10 <sup>-2</sup> meters
F	Fahrenheit
fg	femptogram, 10 <sup>-15</sup> gram
ft	feet (English system)
ha	hectare, 10,000 square meters, 2.47 acres
lbs	pounds (English system)
kg	kilogram, 1000 grams, 2.2 pounds
km	kilometer, 0.62 miles
kt	English kiloton: 2*10 <sup>6</sup> pounds; metric kilotonne: 10 <sup>6</sup> kg, 2.2*10 <sup>6</sup> pounds
kWh	kilowatt-hour
m	meter
mg	milligram, 10 <sup>-3</sup> gram
mg/kg	milligram per kilogram, part per million
mg/l	milligram per liter
ml	milliliter, 10 <sup>-3</sup> liter
mm	millimeter, 10 <sup>-3</sup> meter
MWh	megawatt-hour
ng	nanogram, 10 <sup>-9</sup> gram
ng/g	nanogram per gram, part per billion
ng/l	nanogram per liter
pg	picogram, 10 <sup>-12</sup> gram
pg/m <sup>3</sup>	picogram per cubic meter
pH	per Hydrogen (a unit of acidity)
ppb	part per billion
ppm	part per million
ton	English ton, 2000 lb
tonne	metric tonne, 1000 kg, 2200 lb
g	microgram, 10 <sup>-6</sup> gram
g/g	microgram per gram, part per million
g/l	microgram per liter
µg/m <sup>3</sup>	microgram per cubic meter
m	micrometer, micron, 10 <sup>-6</sup> meter

## Chemicals

2,4-D	2,4-dichlorophenoxyacetic acid
2,4,5-T	2,4,5-trichlorophenoxyacetic acid
BaP	Benzo[ <i>a</i> ]pyrene
BDE	Brominated diphenyl ethers
BFR	Brominated flame retardants
CO	Carbon monoxide
DDT	1,1,1-trichloro-2,2-bis(p-chlorophenyl) ethane or dichlorodiphenyl-trichloroethane
DDD	1,1-dichloro-2,2-bis(p-chlorophenyl) ethane
DDE	1,1-dichloro-2,2-bis(chlorophenyl) ethylene or dichlorodiphenyl-dichloroethene

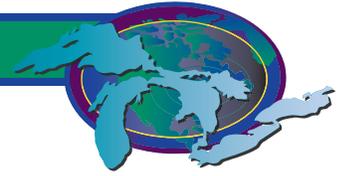
DOC	Dissolved organic carbon
HBCD	Hexabromocyclododecane
HCB	Hexachlorobenzene
-HCH	Hexachlorocyclohexane
-HCH	Lindane
HE	Heptachlor epoxide
Hg	Mercury
MeHg	Methylmercury
NAPH	Naphthalene
NO <sub>2</sub>	Nitrogen dioxide
NO <sub>x</sub>	Nitrogen oxides
O <sub>3</sub>	Ozone
OC	Organochlorine
OCS	Octachlorostyrene
PAH	Polynuclear aromatic hydrocarbons
PBDE	Polybrominated diphenyl ether
PCA	Polychlorinated alkanes
PCB	Polychlorinated biphenyls
PCDD	Polychlorinated dibenzo- <i>p</i> -dioxin
PCDF	Polychlorinated dibenzo furan
PCN	Polychlorinated naphthalenes
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanyl sulfonate
PM <sub>10</sub>	Atmospheric particulate matter of diameter 10 microns or smaller
PM <sub>2.5</sub>	Atmospheric particulate matter of diameter 2.5 microns or smaller
SO <sub>2</sub>	Sulfur dioxide
SPCB	Suite of PCB congeners that include most of PCB mass in the environment
TCDD	Tetrachlorodibenzo- <i>p</i> -dioxin
TCE	Trichloroethylene
TDS	Total dissolved solids
TGM	Total gaseous mercury
TOC	Total organic carbon
TRS	Total reduced sulfur
VOC	Volatile organic compound

Other

AAQC	Ambient Air Quality Criterion (Ontario)
AFO	Animal Feeding Operation
AOC	Area of Concern
AOU	Area of the Undertaking
APF	Agricultural Policy Framework (Canada)
AQI	Air Quality Index
ARET	Accelerated Reduction/Elimination of Toxics program (Canada)
ATFS	American Tree Farm System
BA	Abnormal Barbels
BEACH	Beaches Environmental Assessment and Coastal Health (U.S. Act of 2000)
BKD	Bacterial Kidney Disease
BMP	Best Management Practices
BOB	Ballast On Board
BOD	Biochemical Oxygen Demand
BUI	Beneficial Use Impairments
CAFO	Concentrated Animal Feeding Operations
CAIR	Clean Air Interstate Rule
CBT	Caffeine Breath Test

C-CAP	Coastal Change and Analysis Program
CC/WQR	Consumer Confidence/Water Quality Report
CEPA	Canadian Environmental Protection Act
CFU	Colony Forming Units
CHT	Contaminants in Human Tissue program (part of EAGLE)
CMA	Census Metropolitan Area (Canada)
CNMP	Comprehensive Nutrient Management Plan (U.S.)
CSO	Combined Sewer Overflow
CUE	Catch per Unit of Effort
CUrLUS	Canadian Urban Land Use Survey
CWS	Canada-wide Standard (air quality)
DWS	Drinking Water System (Canada)
EAGLE	Effects on Aboriginals of the Great Lakes program (Canada)
DWSP	Drinking Water Surveillance Program (Canada)
EAPI	External Anomaly Prevalence Index
EFP	Environmental Farm Plan (Ontario)
EMS	Early Mortality Syndrome
EO	Element Occurrence
EPR	Extended Producer Responsibility
ESV	Early Successional Vegetation
FCGO	Fish Community Goals and Objectives
FCO	Fish Community Objectives
FD	Focal Discoloration
FIA	Forest Inventory and Analysis (USDA Forest Service)
FQI	Floristic Quality Index
GAP	Gap Analysis Program (land cover assessment)
GHG	Greenhouse Gases
GIS	Geographic Information System
GLEI	Great Lakes Environmental Indicators
GLI	Great Lakes Initiative (U.S. EPA)
GLWQA	Great Lakes Water Quality Agreement
GMO	Genetically Modified Organisms
HGEMP	Herring Gull Egg Monitoring Program
HUC	Hydrologic Unit Code
IACI	International Alvar Conservation Initiative
IADN	Integrated Atmospheric Deposition Network
IBI	Index of Biotic Integrity
IGLD	International Great Lakes Datum (water level)
IMAC	Interim Maximum Acceptable Concentration
IPM	Integrated Pest Management
ISA	Impervious Surface Area
LaMP	Lakewide Management Plan
LE	Lesion
LEL	Lowest Effect Level
LU/LC	Land use/Land cover
MAC	Maximum Acceptable Concentration
MACT	Maximum Available Control Technology
MCL	Maximum Contaminant Level
MEI	Modified Environmental Index
MGD	Million Gallons per Day (3785.4 m <sup>3</sup> per day)
MLD	Million Liters per Day (1000 m <sup>3</sup> per day)
MMP	Marsh Monitoring Program
MSA	Metropolitan Statistical Area (U.S.)
MSWG	Municipal Solid Waste Generation

NAFTA	North America Free Trade Agreement
NATTS	National Air Toxics Trend Site (U.S. network)
NATA	National Air Toxics Assessment (U.S.)
NEEAR	National Epidemiological and Environmental Assessment of Recreational [Water Study]
NEI	National Emissions Inventory (U.S.)
NHANES	National Health and Nutrition Examination Survey (CDC)
NM Act	Nutrient Management Act
NMAN	Nutrient Management Planning software (Ontario)
NIS	Nonindigenous species
NISA	National Invasive Species Act
NLCD	National Land Cover Data
NMP	Nutrient Management Plan (Ontario)
NOAEC	No Observable Adverse Effect Concentrations
NOAEL	No Observable Adverse Effect Level
NOBOB	No Ballast On Board
NPDES	National Pollution Discharge Elimination System (U.S.)
NPRI	National Pollutant Release Inventory (Canada)
NRVIS	Natural Resources and Values Information System (OMNR)
NTU	Nephelometric Turbidity Units
ODWQS	Ontario Drinking Water Quality Standard
OPEP	Ontario Pesticides Education Program
PBT	Persistent Bioaccumulative Toxic (chemical)
PEL	Probable Effect Level
PICA	Priority Island Conservation Areas
PNP	Permit Nutrient Plans (U.S.)
PGMN	Provincial Groundwater-Monitoring Network (Ontario)
RAP	Remedial Action Plan
RfD	References Dose
RPA	Resource Planning Act
RG	Raised Growths
SDWIS	Safe Drinking Water Information System (U.S.)
SFI®	Sustainable Forestry Initiative
SIP	State Implementation Plan
SOLEC	State of the Lakes Ecosystem Conference
SOLRIS	Southern Ontario Land Resource Information System
SPP. or spp.	Species
SQI	Sediment Quality Index
SSO	Sanitary Sewer Overflow
SUV	Sport Utility Vehicle
SWMRS	Seasonal Water Monitoring and Reporting System (Canada)
TCC	Total Category Change
TCR	Total Coliform Rule
TDI	Tolerable Daily Intake
TEQ	Toxic Equivalent
TIGER	Topological Integrated Geographic Encoding and Reference (U.S. Census Bureau)
TM	Thematic Mapper
TRI	Toxics Release Inventory (U.S.)
UNECE	United Nations Economic Commission for Europe
VKT	Vehicle Kilometers Traveled
WIC	Women Infant and Child (Wisconsin health clinics)
WISCLAND	Wisconsin Initiative for Statewide Cooperation on Landscape Analysis and Data
WTP	Water Treatment Plant
WWTP	Waster Water Treatment Plant
YOY	Young-of-year



## 7.0 Acknowledgments

The *State of the Great Lakes 2007* preparation team included:

### Environment Canada

Nancy Stadler-Salt, lead  
 Stacey Cherwaty-Pergentile  
 Katherine Balpatak  
 Rick Czepita  
 Tracie Greenberg  
 Leif Maitland

### United States Environmental Protection Agency

Paul Bertram, lead  
 Chiara Zuccarino-Crowe  
 Jackie Adams  
 Karen Rodriguez  
 Elizabeth Hinchey Malloy  
 Jeffrey May  
 Paul Horvatin

This report contains contributions from dozens of authors and contributors to the indicator reports and the assessments, and their work is sincerely appreciated. Their voluntary time and effort to collect, assess and report on conditions of the Great Lakes ecosystem components reflects their dedication and professional cooperation. Individual authors and contributors are recognized at the end of their respective report component.

Many governmental and non-governmental sectors were represented by authors and contributors. We recognize the participation of the following organizations. While we have tried to be thorough, any misrepresentation or oversight is entirely unintentional, and we sincerely regret any omissions.

### Federal

Canadian Food Inspection Agency  
 Department of Fisheries and Oceans Canada  
 Great Lakes Laboratory for Fisheries and Aquatic Sciences  
 Environment Canada  
     Air Quality Research Branch  
     Biodiversity Convention Office  
     Canadian Wildlife Service  
     Centre St. Laurent  
     Climate and Atmospheric Research Directorate  
     Environmental Conservation Branch  
         Ecosystem Health Division  
     Environmental Protection Branch  
         Integrated Programs Division  
         Toxic Prevention Division  
     Meteorological Service of Canada  
     National Air Strategies Division  
     National Indicators and Assessment Office  
     National Water Research Institute  
         Aquatic Ecosystem Impacts Research Branch  
     Ontario Region  
         Great Lakes Environmental Office  
         Regional Science Advisor's Office  
     Quebec Region - Environmental Conservation Branch  
 Industry Canada  
 National Oceanic and Atmospheric Administration  
     Great Lakes Environmental Research Laboratory  
     Illinois/Indiana Sea Grant  
 National Park Service  
 Natural Resources Canada  
     Geological Survey of Canada  
 U.S. Department of Agriculture  
     Forest Service  
     Natural Resource Conservation Service  
 U.S. Department of Health and Human Services  
     Agency for Toxic Substance and Disease Registry

- U.S. Environmental Protection Agency  
 Great Lakes National Program Office  
 Mid-Continent Ecology Division  
 Office of Research and Development  
 Region 2  
 Region 5
- U.S. Fish and Wildlife Service  
 Alpena Fishery Resources Office  
 Ashland Fishery Resources Office  
 East Lansing Ecological Services Office  
 Green Bay Ecological Services Office  
 Green Bay Fishery Resources Office  
 Lower Great Lakes Fishery Resources Office  
 Marquette Biological Station  
 Reynoldsburg Ohio Ecological Services Office
- U.S. Geological Survey  
 Biological Resources Division  
 Great Lakes Science Center  
 Lake Erie Biological Station  
 Lake Ontario Biological Station  
 Lake Superior Biological Station  
 Water Resources Discipline

#### **Provincial and State**

- Illinois Department of Natural Resources  
 Illinois Environmental Protection Agency  
 Indiana Department of Natural Resources  
 Indiana Geological Survey  
 Michigan Department of Environmental Quality  
 Michigan Department of Natural Resources  
 Minnesota Department of Health  
 Minnesota Department of Natural Resources  
 Minnesota Pollution Control Agency  
 New York State Department of Environmental Conservation  
 Ohio Department of Natural Resources  
 Ohio Division of Wildlife  
 Ohio Environmental Protection Agency  
 Ontario Ministry of Agriculture, Food and Rural Affairs  
 Ontario Ministry of Environment  
 Environmental Monitoring and Reporting Branch  
 Forest Management Branch  
 Sport Fish Contaminant Monitoring Program  
 Standards Development Branch  
 Ontario Ministry of Municipal Affairs and Housing  
 Ontario Ministry of Natural Resources  
 Pennsylvania Department of Environmental Protection  
 Quebec  
 Direction des écosystèmes aquatiques  
 Ministère de la Sécurité publique du Québec
- Wisconsin Department of Health and Family Services  
 Division of Public Health
- Wisconsin Department of Natural Resources  
 Division of Wildlife

#### **Regional and Municipal**

- City of Chicago  
 City of St. Catharines  
 City of Toronto  
 Grand River Conservation Authority  
 Northeast-Midwest Institute

**Aboriginal**

Bad River Band of Lake Superior Tribe of Chippewa Indians  
 Chippewa Ottawa Resource Authority  
 Haudenosaunee Environmental Task Force  
 Mohawk Council of Akwesasne

**Academic**

Brock University, ON  
 Cornell University, NY  
 Clemson University, SC  
 Grand Valley State University, MI  
 Indiana University, IN  
 James Madison University, VA  
 Michigan State University, MI  
 Michigan Technical University, MI  
 Northern Michigan University, MI  
 Northland College, WI  
 University of Michigan, MI  
 University of Minnesota – Duluth, MN  
 University of Minnesota – St. Paul, MN  
 University of Windsor, ON  
 University of Wisconsin-Madison, WI  
 University of Wisconsin-Superior, WI

**Coalitions**

Binational Collaborative for the Conservation of Great Lakes Islands  
 Great Lakes Coastal Wetlands Consortium  
 Great Lakes Environmental Indicators

**Commissions**

Great Lakes Commission  
 Great Lakes Fishery Commission  
 Great Lakes Indian Fish and Wildlife Commission  
 International Joint Commission

**Environmental Non-Government Organizations**

Bird Studies Canada  
 Great Lakes Forest Alliance  
 Great Lakes United  
 The Nature Conservancy  
 The Nature Conservancy (Canada)  
 World Wildlife Fund-Canada

**Industry**

American Forests and Paper Association  
 Council of Great Lakes Industries  
 National Council for Air and Stream Improvement, Inc.

**Private Organizations**

Bio-Software Environmental Data  
 Bobolink Enterprises  
 DynCorp, A CSC Company  
 Environmental Careers Organization  
 LURA Consulting  
 Oak Ridge Institute for Science and Education  
 Stream Benders

**Private Citizens**