

CURRICULUM VITAE – updated 26 June 2020

Karen A. Kidd

CONTACT INFORMATION

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Citizenship: Canadian

EDUCATION

B.Sc.	Biological Sciences, Specialization: Environmental Toxicology	Guelph	Canada	1991
Ph.D.	Biological Sciences, Environmental Biology and Ecology	Alberta	Canada	1996

EMPLOYMENT HISTORY

Stephen Jarislowsky Chair in Environment and Health	2017-present
Professor	2017-present
<i>Biology Department & School of Earth, Environment and Society, McMaster University, Hamilton, ON</i>	
Tier 1 Canada Research Chair in Chemical Contamination of Food Webs	2015-17
Tier 2 Canada Research Chair in Chemical Contamination of Food Webs	2004-09; 2010-14
Professor	2008-2017
Associate Professor	2004-08
<i>Biology Department, University of New Brunswick, Saint John, NB</i>	
Research Scientist	1998-2004
<i>Fisheries and Oceans Canada, Freshwater Institute, Winnipeg, MB</i>	
Research Associate & Postdoctoral Fellow	1996-98
<i>Fisheries and Oceans Canada, Freshwater Institute, Winnipeg, MB</i>	

ADJUNCT FACULTY POSITIONS & VISITING PROFESSORSHIPS

Adjunct Professor, <i>Biology Department, University of Waterloo</i>	2018-21
Associate Member, <i>Department of Psychology, Neuroscience and Behaviour, McMaster</i>	2018-21
Adjunct Professor, <i>United Nations University – Institute for Water, Environment and Health</i>	2017-21
Adjunct Professor, <i>University of New Brunswick</i>	2017-22
Visiting Professor, <i>Umeå University, Umeå, Sweden and Swetox, Sodertalje, Sweden</i>	2015
Visiting Professor, <i>National Institute of Water & Atmospheric Research, Hamilton, New Zealand</i>	2012
Adjunct Professor, <i>Dept. of Biology, University of Prince Edward Island, Charlottetown, PEI</i>	2008-11
Adjunct Professor, <i>Department of Zoology, University of Manitoba, Winnipeg, MB</i>	2000-06

HONOURS AND AWARDS

2018	Society of Environmental Toxicology and Chemistry Fellow
2017	Recipharm International Environmental Award (awarded March 2018)
2015	Tier 1 Canada Research Chair
2012	NSERC Discovery Accelerator Award
2010	Tier 2 Canada Research Chair renewal
2009	Society of Environmental Toxicology and Chemistry's Presidential Citation for Exemplary Service
2007	J.C. Stevenson Memorial Lecture, Canadian Conference for Fisheries Research
2004	Tier 2 Canada Research Chair
2002	Queen's Golden Jubilee Medal
2002	Doan Publication Award, Fisheries and Oceans Canada

EDITORIAL POSITIONS

2015-18	Associate Editor, Freshwater Science specialty section, <i>Frontiers in Environmental Science</i>
2015-18	Editorial Board Member (Subject Editor), <i>FACETS</i>
2015-18	Editor, <i>Environmental Toxicology and Chemistry</i>
2009-pres	Guest Editor, <i>Proceedings of the National Academy of Sciences</i> (12 times)
2006-08	Guest Co-editor, <i>Environmental Pollution</i> special issue entitled "Mercury Cycling and Bioaccumulation in the Environment"
1999-2002	Editorial Board Member, <i>Environmental Toxicology and Chemistry</i>

RESEARCH ACTIVITIES**CAREER TOTALS FOR PUBLICATIONS AND PRESENTATIONS**

		Lifetime	Published	In Press	Submitted
Refereed	Journals	128	119	2	7
	Books	1			
	Book Chapters	13	12	1	
	Reports	7	7		
Total Refereed Publications		149			-
Non-refereed	Departmental and Technical Reports	8*			
	Keynote and Plenary Presentations	25			
	Invited Presentations	66			
	Contributed Presentations	>215			

*Not shown

RESEARCH IN PROGRESS

My research program focuses on understanding the impacts of human activities on aquatic ecosystems. More specifically I study the effects of point (municipal and industrial) and non-point (agriculture) discharges on the health of aquatic organisms, and the fate of persistent pollutants in freshwater and marine ecosystems. Much of my research is multidisciplinary in nature and an interface between biogeochemistry, ecology and toxicology. For example, I use measurements of stable nitrogen, sulfur, and carbon isotope ratios in organisms to characterize trophic relationships in diverse aquatic systems and to understand pollutant accumulation from primary producers through to top predators. I have led or been involved in three major whole ecosystem experiments to understand how 1) the estrogen used in the birth control pill affects fish and their prey, 2) wastes from rainbow trout aquaculture affect native organisms, and 3) a commonly-used herbicide and fertilizers affect the health of wetland communities.

PUBLICATIONS (STUDENTS/PDFs FROM MY LAB ARE UNDERLINED; SEE ALSO KAREN A KIDD GOOGLE SCHOLAR PAGE)**PEER-REVIEWED JOURNAL ARTICLES PUBLISHED OR IN PRESS (SELECT 2017-20 ONLY)****2020 (9 to date)**

- J133. Hall, B.D., T.P. Cobb, M.D. Graham, R.H. Hesslein, K.A. Kidd, R. Vogt and P.R. Leavitt. 2020. The mercury elevator in lakes – a novel vector of methylmercury transfer to fish via migratory invertebrates. *Env. Sci. Letters*, published online 22 Jun 2020, doi.org/10.1021/acs.estlett.0c00446
- J131. McMahon, H.M., T.J. Arciszewski, K.R. Munkittrick, and K.A. Kidd. 2020. Regional and long-term analyses of stable isotopes of fish and invertebrates show evidence of the closure of a pulp mill and the influence of additional stressors. *Environ. Toxicol. Chem.* 39:1207–1218.
- J130. Edge, C., L.F. Baker, C.M. Lanctot, S.D. Melvin, M.K. Gahl, M. Kurban, L. Navarro-Martin, K.A. Kidd,

- V.L. Trudeau, D.G. Thompson, J.F. Mudge, and J.E. Houlahan. Compensatory indirect effects of an herbicide on wetland communities. *Sci. Total Environ.* 718: 137254
- J129. **Kidd, K.A.**, S. Graves, G. McKee and C. Podemski. 2020. Effects of whole lake additions of ethinylestradiol on leech populations. *Environ. Toxicol. Chem. ETCJ*-Jan-20-00008, Accepted with minor revisions, 4 Feb 2020, In press.
- J128. Thera, J., **K.A. Kidd**, and R.F. Bertolo. 2020. Amino acids in freshwater food webs: Assessing their variability among taxa, trophic levels, and systems. *Freshwater Biology*, 65(6):1101-1113.
- J127. Roldán Wong, N.T., **K.A. Kidd**, B.P. Ceballos Vázquez, A.R. Rivera Camacho, and M. Arellano-Martínez. 2020. Polycyclic aromatic hydrocarbons (PAHs) in mussels (*Modiolus capax*) from sites with increasing anthropogenic impact in La Paz Bay, Gulf of California. *Regional Studies in Marine Science*. 33: 100948, <https://doi.org/10.1016/j.rsma.2019.100948>
- J126. Erdozain, M., C.E. Emilson, D.P. Kreutzweiser, **K.A. Kidd**, N. Mykytchuk, and P.K. Sibley. 2020. Forest management influences the effects of streamside wet areas on stream ecosystems. *Ecological Applications*, 30(4): e02077
- 2019 (11 total)**
- J123. Thera, J.C., **K.A. Kidd**, R.F. Bertolo, and N.J. O'Driscoll. 2019. Cysteine content explains methylmercury concentrations in aquatic invertebrates. *Sci. Total Environ.* 688:567–573.
- J122. McCallum, E.S., K. Nickel, H. Mehdi, S.N.N. Du, J.E. Bowman, J.D. Midwood, **K.A. Kidd**, G.R. Scott, and S. Balshine. 2019. Municipal wastewater effluent impacts fish communities: a multi-year study involving two wastewater treatment plants. *Environ. Poll.* 252(Part B): 1730-1741. <https://doi.org/10.1016/j.envpol.2019.06.075>.
- J121. Kurek, J., P.W. MacKeigan, S. Veinot, A. Mercer, and **K.A. Kidd**. Ecological legacy of DDT archived in lake sediments from eastern Canada. *Environ. Sci. Technol.* es-2019-01396x, Accepted 15 Mar 2019, In press.
- J120. Reid, A., A. Carlson, I. Creed, E. Eliason, P. Gell, P. Johnson, **K.A. Kidd**, T. MacCormack, J. Olden, S. Ormerod, J. Smol, W. Taylor, K. Tockner, J. Vermaire, D. Dudgeon, and S. Cooke. 2019. Emerging threats and persistent conservation challenges for freshwater biodiversity. *Biological Reviews*. 94:849 – 873. 10.1111/brv.12480
- J119. Erdozain, M., **K.A. Kidd**, D. Kreutzweiser, and P. Sibley. Increased reliance of stream macroinvertebrates on terrestrial food sources linked to forest management intensity. *Ecological Applications*. Accepted 29 Mar 2019. 10.1002/eap.1889.
- J117. Lescord, G.L., M.G. Clayden, **K.A. Kidd**, X. Wang, N.J. O'Driscoll, J. Kirk and D.C.G. Muir. Use of sulfur isotopes to understand mercury bioaccumulation in simple food webs of high Arctic lakes. *Arctic Science*. Published online 19 December 2018. <https://doi.org/10.1139/as-2018-0022>
- J116. Kopec, D., **K.A. Kidd**, N.S. Fisher, M. Bowen, C. Francis, and K. Payne R.A. Bodaly. Spatial and temporal trends of mercury in the aquatic food web of the lower Penobscot River, Maine, USA, affected by a chlor-alkali plant. *Sci. Total Environ.* 649:770–791.
- J115. **Kidd, K.A.**, L.P. Burkhard, M. Babut, K. Borgå, D.C.G. Muir, O. Perceval, H. Ruedel, K. Woodburn and M.R. Embry. 2019. Practical advice for selecting or determining Trophic Magnification Factors for application under the European Union Water Framework Directive. *Int. Env. Assess. Manag.* 15(2):266–277, 10.1002/ieam.4102, Open Access

2018 (12 total)

- J114. Kennedy, P.J., P.J. Blanchfield, **K.A. Kidd**, M.J. Paterson, C.L. Podemski and M.D. Rennie. 2018. Changes in the diet, early growth, and condition of Lake Trout (*Salvelinus namaycush*) in response to an experimental aquaculture operation. *Can. J. Fish. Aquat. Sci.* Published online 16 Oct 2018, <https://doi.org/10.1139/cjfas-2017-0578>.

- J112. Espejo, W., J. Padilha, K.A. Kidd, P. Dorneles, R. Barra, O. Malm, G. Chiang, and J.E. Celis. 2018. Trophic transfer of cadmium in marine food webs from western Chilean Patagonia and Antarctica. *Mar. Poll. Bull.* 137:246-251.
- J111. Roldán-Wong, N.T., **K.A. Kidd**, B.P. Ceballos-Vázquez, and M. Arellano-Martínez. 2018. Is there a risk to humans from consuming octopus species from sites with high environmental levels of metals? *Bull. Env. Contam. Toxicol.* Online 19 Sept 18, doi.org/10.1007/s00128-018-2447-9
- J109. Erdozain, M., **K.A. Kidd**, D. Kreuzweiser, and P. Sibley. 2018. Linking stream ecosystem integrity to catchment and reach conditions in an intensively managed forest landscape. *Ecosphere*. 9(5):e02278 10.1002/ecs2.2278. Open access.
- J108. Loughery, J., **K.A. Kidd**, A. Mercer, C.J. Martyniuk. 2018. Part A: Temporal and dose-dependent transcriptional responses in the liver of fathead minnows following short term exposure to the polycyclic aromatic hydrocarbon phenanthrene. *Aquat. Toxicol.* 199:90-102.
- J106. Espejo, W., D. Kitamura, **K.A. Kidd**, J.E. Celis, S. Kashiwada, C. Galbán-Malagón, R. Barra, and G. Chiang. 2018. Biomagnification of tantalum through diverse aquatic food webs. *Environ. Sci. & Technol. Lett.*, 5(4):196-201. 10.1021/acs.estlett.8b00051.
- J104. Reinhart, B.R., **K.A. Kidd**, R.A. Curry, N.J. O'Driscoll, and S.A. Pavey. 2018. Mercury bioaccumulation in aquatic biota along a salinity gradient in the Saint John River estuary. *J. Env. Sci.* 68:41-54, <https://doi.org/10.1016/j.jes.2018.02.024>
- J103. Eagles-Smith, C.A., E.K. Silbergeld, N. Basu, P. Bustamante, F. Diaz-Barriga, W.A. Hopkins, **K.A. Kidd**, J.F. Nyland. 2018. Modulators of mercury risk to wildlife and humans in the context of rapid global change. *Ambio* 47(2):170-197. doi: 10.1007/s13280-017-1011-x
- J102. Diamond, J., R. Altenburger, A. Coors, S.D. Dyer, M. Focazio, **K.A. Kidd**, A.A. Koelmans, K.M.Y. Leung, M.R. Servos, J. Snape, J. Tolls, and X. Zhang. 2018. Use of prospective and retrospective risk assessment methods that simplify chemical mixtures associated with treated domestic wastewater discharges. *Environmental Toxicology and Chemistry*, 37(3):690-702. doi: 10.1002/etc.4013

2017 (9 total)

- J99. Thera, J., **K.A. Kidd**, M.E. Dodge-Lynch, and R.F. Bertolo. 2017. Quantification of sulphur amino acids by ultra-high performance liquid chromatography in aquatic invertebrates. *Analytical Biochemistry: Methods in the Biological Sciences*. 539: 158-161 <https://doi.org/10.1016/j.ab.2017.10.022>
- J97. Yee-Duarte, J.A., B.P. Ceballos-Vázquez, E. Shumilin, **K.A. Kidd**, and M. Arellano-Martínez. 2017. Parasitic castration of chocolate clam *Megapitaria squalida* (Sowerby, 1835) caused by trematode larvae. *J. Shellfish Research*. 36(3):593-599. <https://doi.org/10.2983/035.036.0307>
- J95. Cowie, A.M., K.I. Sarty, A. Mercer, J. Koh, **K.A. Kidd**, and C.J. Martyniuk. 2017. Molecular networks related to the immune system and mitochondria are targets for the pesticide dieldrin in the zebrafish (*Danio rerio*) central nervous system. *J. Proteomics*. 157:71-82.
- J94. Wellman, S., **K.A. Kidd**, C.L. Podemski, P.J. Blanchfield, and M.J. Paterson. 2017. Incorporation of wastes by native species during and after an experimental aquaculture operation. *Fresh. Sci.* 36(2): 387-401.
- J91. Graves, S.D., **K.A. Kidd**, J.E. Houlahan, K.R. Munkittrick. 2017. General and histological indicators of health in wild fishes from a biological mercury hotspot in northeastern North America. *Environ. Toxicol. Chem.* 36(4):976-987.

PEER-REVIEWED BOOKS (1)

- B1. Bergman, A., J.J. Heindel, S. Jobling, **K.A. Kidd**, and R.T. Zoeller (Eds.) 2012. "State of the Science of Endocrine Disrupting Chemicals – 2012", Geneva, Switzerland, World Health Organization / United Nations Environment Programme. 260 pp. ISBN:978-92-807-3274-0

PEER-REVIEWED REPORTS (SELECT 2014-PRES; LIFETIME 9)

- R9. Mavinic, D., S. Arora, C. Brooks, Y. Comeau, M. Darbyshire, **K. Kidd**, T. McClenaghan, and M. Servos. 2018. Canada's challenges and opportunities to address contaminants in wastewater. National Expert Panel Report, March 2018, Canadian Water Network, 76 pp.
- R8. **Kidd, K.A.**, M. Servos, M. Hecker and F. Gagne. 2019. A screening approach to assess impacts of municipal wastewaters on aquatic systems. Canadian Water Network End User Report, 10 pp.
- R7. Van Geest, J.L., **Kidd, K.A.**, Hunt, H.L., Abgrall, M.J., Maltais, M.J., and A. Mercer. 2015. Development of baseline data for long-term monitoring of sediment conditions at reference sites in Saint John Harbour, New Brunswick: benthic infaunal invertebrates and sediment contaminants 2011-2013. Can. Manuscr. Rep. Fish. Aquat. Sci. 3076: v + 97 p.

KEYNOTE AND PLENARY ADDRESSES (SELECT 2014 – PRESENT)

29. What happens when you put fish on "The Pill" and other pharmaceuticals? Trent University Schindler Lecture, 29 Nov 2018.
28. Synthetic estrogen and whole lake research. #ELA50 Symposium, 14 Sept 2018, Winnipeg, MB
27. Lessons learned from whole ecosystem studies (and a few decades in the field). Wilfrid Laurier University Biology Colloquium, 5 Apr 2018
26. Effects and relative risk of mercury exposure to humans and wildlife in the context of other risks/stressors. International Conference on Mercury as a Global Pollutant, 17-21 July 2017, Providence, RI. Plenary panel member.
25. Mercury in Fish: Models, Drivers and Patterns, SETAC Special Science Symposium on "Global Environmental Change and Mercury Pollution: Environmental Governance, Research and Management of Converging Issues", Brussels, Belgium, 20-21 Oct 2015.
23. Endocrine disrupters in humans and wildlife, Shanghai Workshop on Endocrine Disrupters, Tongji University, Shanghai, China, 23 Oct 2015.
22. Mercury in freshwater fishes, SETAC Minamata Convention workshop, Brussels, 20 Oct 2015.
21. Contaminants of emerging concern, Canadian Water Network Conference, Connecting Water Resources 2015: Knowledge to Action, Ottawa, 10-12 Mar 2015. Plenary.
20. What happens in a lake when you put fish on the birth control pill? **2014 Watershed Lecture**, Vale Living with Lakes Centre, Sudbury, 28 Nov 2014.
19. "Is the birth control pill effective for fish? Results of a whole lake experiment at the Experimental Lakes Area." Nordic Environmental Chemistry Conference, Reykjavik, Iceland, 11-13 Jun 2014.
18. Direct and indirect effects of a potent estrogen on an aquatic food web. CSEE/CSZ/SCL joint meeting, Montreal, 27 May 2014.

SERVICE ON PROFESSIONAL AND LEARNED SCIENCE COMMITTEES**Provincial:**

1. NB Premier-appointed member of Scientific Advisory Council, Energy Institute, 2013 – 2016.
2. Alberta Environment and Parks Science Advisory Panel, 2020-2022.

National (SELECT):

1. NSERC:
 - a. Evolution and Ecology Grant Selection Committee, Group Chair, 2015-19.
 - b. Vanier Canada Graduate Scholarships Committee, 2014-18.
 - c. Strategic Networks Grants Review Committee, 2014-16.
 - d. Evolution and Ecology Grant Selection Committee, 2008–11; Co-chair 2010-11.
2. Canadian Rivers Institute:
 - a. Treasurer and Management Board Member 2004-10.
 - b. Elected Chair of the Science Directors Board and Management Board Member 2012-15.

3. Canadian Water Network
 - a. Expert Panel Member on Municipal Wastewater (2017-18)
 - b. Expert Advisory Committee for Wastewater and Stormwater Report and Workshop (2016-17)
 - c. Program Leader for national program “Toolbox to Assess Endocrine Effects of Municipal Wastewater” (2013-16)
4. International Institute of Sustainable Development, Research Advisory Board Member for Experimental Lakes Area, 2014 – 17; 2017-2020.

International (SELECT):

1. Member of the International Joint Commission Science Advisory Board, Science Priorities Committee, 2019-2022.
2. Member of the International Joint Commission Stressor Interactions Work Group, 2018-19
3. International Science Panel Member, Review of Helmholtz Centre for Environmental Research, Leipzig, Germany, 9-11 Apr 2018
4. Independent Science Panel, Review of Mercury Strategy for Bay-Delta Ecosystem, California, US Geological Survey, 2015-present.
5. United Nations Environment Programme/World Health Organization Committee Member and Co-Editor reviewing the state of the science on environmental endocrine disruptors, 2010-13.
6. International Joint Commission Expert Panel Member to develop a monitoring program to assess ecosystem health in the Laurentian Great Lakes, 2011.
7. Global Environment Facility Lakes Working Group Member for project ‘Enhancing the use of Science of International Waters projects to improve project results’, United Nations Environment Programme, 2010–11.
8. Environmental Health News, Science Communication Fellow, 2009.
9. U.S. EPA Science Advisory Board Ecological Processes and Effects Committee to review white paper on methodology for deriving aquatic life water quality criteria for emerging contaminants. Washington, D.C. 2008.