

HUGH J. MACISAAC
CURRICULUM VITAE

Citizenship: Canadian

Academic Address:

Great Lakes Institute for Environmental Research
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EMPLOYMENT:

2011-2016: Director, NSERC Canadian Aquatic Invasive Species Network II
2006-2011: Director, Canadian Aquatic Invasive Species Network
2003-current: Professor and DFO Aquatic Invasive Species Research Chair, Great Lakes
Institute for Environmental Research, University of Windsor
2000-current: Professor, GLIER and Biology Department, University of Windsor
1997 – 2000: Associate Professor, Biology Department, University of Windsor
1992 – 1997: Assistant Professor, Biology Department, University of Windsor

EDUCATION:

NSERC Postdoctoral fellow (1990 - 1992), Zoology Department, University of Toronto
Ph.D. (1986 - 1990), Department of Biology, Dartmouth College, Hanover, NH
M.Sc. (1983 - 1986), Botany Department, University of Toronto, Toronto, ON
B.Sc. (1979 - 1983), Department of Biology, University of Windsor, Windsor, ON

ACADEMIC AWARDS AND HONOURS:

2008: Mentoring Award, University of Windsor Alumni Association
2003-2011: Fisheries and Oceans' Aquatic Invasive Species Research Chair
2009, 2006, 2003, 2002, 2001, 2000 University of Windsor Research Excellence Award
2000 Premier's Research Excellence Award
1998 International Development Research Centre, Research Cooperation Programme
between Canada and Latin America, Faculty Travel Award (Puerto Montt, Chile)
1997 Department of Foreign Affairs and International Trade, Science and Technology
with European Partners, Travel Award (Netherlands, Germany, Switzerland, Italy)
1990-1992 Natural Science and Engineering Research Council of Canada (NSERC)
Postdoctoral Fellowship
1986-1989 NSERC Postgraduate Scholarship (Ph.D.)
1986-1990 Dartmouth College Cramer Fellowship
1986 Elizabeth Wintercorbyn Memorial Graduate Scholarship
1985 Ontario Graduate Scholarship
1985 Department of Indian and Northern Affairs Northern Studies Training Grant
1984-1985 NSERC Postgraduate Scholarship (M.Sc.)
1984 Canadian Wildlife Federation Orville Erickson Memorial Scholarship
1983 University of Toronto Open Fellowship
1983 University of Windsor Board of Governor's Award in Biology
1982, 1983 Windsor Sportsmen's Club Conservation Scholarship
1982 NSERC Undergraduate Scholarship

1980, 1981, 1983 University of Windsor President's Roll of Scholars

UNDERGRADUATE TEACHING EXPERIENCE:

2008, 2009, 2010 Biological Invasions
2008 Community Ecology, University of Windsor
1997 Ecology, University of Windsor
1995 - 2004, 2009, 2011 Conservation Biology, University of Windsor
1993 - 2003 Great Lakes Field Biology, University of Windsor
1992 - 1994 Great Lakes Systems Ecology, University of Windsor
1992 Applied Ecology, University of Windsor
1990 - 1991 Animal Ecology, Erindale College, University of Toronto

GRADUATE TEACHING EXPERIENCE:

2001, 2002 Advanced Topics in Conservation Biology
1998 Ecology of Shallow Lakes
1996 Disturbance Ecology, University of Windsor
1992, 1995, 2000, 2003, 2004, 2006, 2007, 2008, 2009 Biological Invasions, University of Windsor

REFEREED PUBLICATIONS: (*student / postdoctoral fellow; ^ = visiting scientist)

- 125) Adebayo*, A.A., E. Briski*, O. Kalaci*, M. Hernandez*, S. Ghabooli*, B. Beric, F.T. Chan*, A. Zhan*, E. Fifield, T. Leadley and H.J. Maclsaac. Water hyacinth (*Eichhornia crassipes*) and water lettuce (*Pistia stratioides*) in the Great Lakes: playing with fire? *Aquatic Invasions* (in press)
- 124) Bailey, S.A., M.G. Deneau, L. Jean, C.J. Wiley, B. Leung, and H.J. Maclsaac. 2011. Evaluating efficacy of an environmental policy to prevent biological invasions. *Environmental Science and Technology* (accepted).
- 123) Muirhead*, J.R., M.A. Lewis and H.J. Maclsaac. 2011. Prediction and error in multi-stage models for spread of aquatic invasive species. *Diversity and Distributions* 17:323-337.
- 122) Sylvester*, F. O. Kalaci*, B. Leung, T. Therriault, A. Lacoursière-Roussel, F.M. Choi, Cathryn C. Murray, M.A. Bravo and H.J. Maclsaac. 2011. Invasion vectors: can simple models explain a complex problem? *Journal of Applied Ecology* (in press). doi: 10.1111/j.1365-2664.2011.01957.x
- 121) Bock, D.G., A. Zhan*, H.J. Maclsaac and M.E. Cristescu. 2011. Looking at both sides of biological invasions: patterns of spread of the colonial violet tunicate *Botrylloides violaceus* in North America. *Molecular Ecology* 20:503-516.
- 120) Maclsaac, H.J. Lakes. 2011. *In: Encyclopedia on Introduced Invasive Species*. D. Simberloff and M. Rejmanek (eds), University of California Press. p. 410-421. (invited)
- 119) Ricciardi, A. and H.J. Maclsaac. 2011. Impacts of biological invasions on freshwater ecosystems. *In: 50 Years of Invasion Ecology*. D. Richardson (ed). p. 211-224.
- 118) Maclsaac, H.J., R. Tedla* and A. Ricciardi. 2011. Patterns and rate of growth of studies in invasion ecology. *In: 50 Years of Invasion Ecology*. D. Richardson (ed), p. 51-60. (invited).
- 117) Briski*, E., M.E. Cristescu, S.A. Bailey, and H J. Maclsaac. 2011. Use of DNA barcoding to detect invertebrate invasive species from diapausing eggs. *Biological Invasions* (in press). DOI 10.1007/s10530-010-9892-7

- 116) Ghabooli*, S., T.A. Shiganova, A. Zhan*, M.E. Cristescu, P. Egtesadi-Araghi and H.J. Maclsaac. 2011. Multiple introductions and invasion pathways for the invasive ctenophore *Mnemiopsis leidyi* in Eurasia. *Biological Invasions* 13:679-690.
- 115) Lejeusne*, C., H.J. Maclsaac, T.W. Therriault, D. Bock and M.E. Cristescu. 2011. Comparative phylogeography of two colonial ascidians reveals contrasting invasion histories. *Biological Invasions* 13:635-650.
- 114) Briski*, E., S.A. Bailey, M.E. Cristescu and H.J. Maclsaac. 2010. Efficacy of regulations in protecting the Great Lakes from biological invasions via ships' ballast water. *Biological Invasions* 55:2414-2424.
- 113) Zhan*, A., H.J. Maclsaac and M.E. Cristescu. 2010. Invasion genetics of the *Ciona intestinalis* species complex: from regional endemism to global homogeneity. *Molecular Ecology* 19:4678-4694.
- 112) Kipp, R., S.A. Bailey, H.J. Maclsaac and A. Ricciardi. 2010. Transoceanic ships as vectors for nonindigenous freshwater bryozoans. *Diversity and Distributions* 16:77-83.
- 111) Rup*, M., S.A. Bailey, C. Wiley, M. Minton, W. Miller, G. Ruiz and H.J. Maclsaac. 2010. Domestic ballast operations on the Great Lakes: Potential importance of Lakers as a vector for introduction and spread of nonindigenous species. *Canadian Journal of Fisheries and Aquatic Sciences* 67:417-426.
- 110) Bradie*, J.N., S.A. Bailey, G. van der Velde and H.J. Maclsaac. 2010. Brine-induced mortality of nonindigenous species in ballast water. *Marine Environmental Research* 70:395-410.
- 109) Gray*, D. and H.J. Maclsaac. 2010. Do zooplankton eggs remain viable despite exposure to open-ocean ballast water exchange: evidence from *in situ* exposure experiments. *Canadian Journal of Fisheries and Aquatic Sciences* 67: 256-268.
- 108) Sylvester*, F. and H.J. Maclsaac. 2010. Is vessel hull fouling an invasion threat to the Great Lakes? *Diversity and Distributions* 16:132-143.
- 107) Harvey*, C.T., S. Qureshi* and H.J. Maclsaac. 2009. Detecting colonizing nonindigenous species. *Diversity and Distributions* 15:429-437.
- 106) Kelly*, D.W., G. Lamberti and H.J. Maclsaac. 2009. Laurentian Great Lakes as a case study of biological invasion. Chapter 2, in *ISIS Bioeconomics of Biological Invasions*. R. Keller, M. Lewis and D. Lodge (eds). pp. 205-225 (invited)
- 105) Kelly*, D.W., L.-M. Herborg* and H.J. Maclsaac. 2009. Biodiversity and ecosystem changes associated with *Dreissena* invasion of aquatic ecosystems. In: *Dreissena mussels in Europe*. G. Van der Velde (ed.). (in press; invited)
- 104) Steinberg*, A., J. Ejsmont-Karabin, J.R. Muirhead* and H.J. Maclsaac. 2009. Spatial and temporal stability of rotifer communities. *Hydrobiologia* 624:107-114.
- 103) Jacobs*, M.J. and H.J. Maclsaac. 2008. Modeling spread of the invasive macrophyte *Cabomba caroliniana*. *Freshwater Biology* 54:296-305.
- 102) Ellis*, S. and H.J. Maclsaac. 2008. Salinity tolerance of Great Lakes' invaders. *Freshwater Biology* 45:77-89.
- 101) Ricciardi, A. and H.J. Maclsaac. 2008. Is current ballast water exchange policy sufficient to protect the Great Lakes from ship-vectored invasions? *Ecological Applications* 18:1321-1323.
- 100) Ricciardi, A. and H.J. Maclsaac. 2008. The rise of invasion ecology. Charles Elton's fifty year old text is now cited more than ever. *Nature* 452:34.
- 99) Herborg*, L.-M., N.E. Mandrak, B.C. Cudmore and H.J. Maclsaac. 2007. Comparative distribution and invasion risk of snakehead (Channidae) and Asian carp (Cyprinidae) species in North America. *Canadian Journal of Fisheries and Aquatic Sciences* 64:1723-1735.

- 98) Gray*, D.K., T. Johengen, D.F. Reid and H.J. Maclsaac. 2007. Efficacy of open-ocean ballast water exchange as a means of preventing invertebrate invasions between freshwater ports. *Limnology and Oceanography* 52:2386-2397.
- 97) Muirhead*, J., D.K. Gray*, D.W. Kelly*, S.M. Ellis*, D.D. Heath and H.J. Maclsaac. 2008. Identifying the source of species invasions: sampling intensity vs. genetic diversity. *Molecular Ecology* 17:431-449.
- 96) Bailey*, S.A., D.W. Kelly*, D.K. Gray*, K. Nandakumar*, and H.J. Maclsaac. 2008. Nonindigenous species in Lake Erie: A chronicle of established and projected aquatic invaders. In: Pulse of Lake Erie. M. Munawar (ed.). p. 579-603. (invited).
- 95) Steinberg, A.J., C.S. Sereres, M. Burrows and H.J. Maclsaac. 2007. Temporal pattern of government funding for nonindigenous species research in the Great Lakes. *Journal of Great Lakes Research* 33:136-142.
- 94) Jacobs*, M.J. and H.J. Maclsaac. 2007. Fouling of fishing line by the waterflea *Cercopagis pengoi*: a mechanism of dispersal? *Hydrobiologia* 583:119-126.
- 93) Herborg*, L.-M., C.L. Jerde, D.M. Lodge, G. Ruiz and H.J. Maclsaac. 2007. Predicting invasion risk using measures of introduction effort and environmental niche models. *Ecological Applications* 17:663-674.
- 92) Maclsaac, H.J., L.-M. Herborg* and J.R. Muirhead*. 2007. Modeling biological invasions of lakes. In: Freshwater bioinvaders: profiles, distribution and threats. Edited by F. Gherardi. Chapter 18, pages 347-368. (invited)
- 91) Holeck, K.T., E.L. Mills and H.J. Maclsaac. 2007. Globalization, biological invasions, and ecosystem changes in North America's Great Lakes. In: Globalization: Effects on fisheries resources. Ed.: W. Taylor, M.G. Schechter, L.G. Wolfson. Chapter 6, p. 156-182. (invited)
- 90) Bailey*, S.A., I.C. Duggan*, N. Kanavillil* and H.J. Maclsaac. 2007. Sediments and ships: natural biota as biological contaminants. Proceedings of the 6th International Symposium on Sediment Quality Assessment, Antwerp Belgium. (invited; accepted).
- 89) Herborg* L.-M., D.A. Rudnick, Y. Siliang, D.M. Lodge and H.J. Maclsaac. 2007. Prediction of introduced Chinese mitten crab (*Eriocheir sinensis*) distribution in Europe. *Conservation Biology* 21:1316-1323.
- 88) Duggan*, I.C., S.A. Bailey*, C. van Overdijk* and H.J. Maclsaac. 2006. Invasion risk of active and diapausing invertebrates from residual ballast in ships entering Chesapeake Bay. *Marine Ecology Progress Series* 324:57-66.
- 87) Lodge, D.M., S. Williams, H. Maclsaac, K. Hayes, B. Leung, L. Loope, S. Reichard, R. Mack, P.B. Moyle, M. Smith, D.A. Andow, J.T. Carlton, and A. McMichael. 2006. Biological invasions: recommendations for policy and management. *Ecological Applications* 16:2035-2054. (invited)
- 86) Van der Velde, G., S. Rajagopal, M. Kuyper-Kollenaar, A. bij de Vaate, D.W. Thieltges and H.J. Maclsaac. 2006. Biological invasions – concepts to understand and predict a global threat. pp. 61-90. In: R. Bobbink, B. Beltman, J.T.A. Verhoeven and D.F. Whigham (eds.) Wetlands as a natural resource. Volume 2. Wetlands: functioning, biodiversity, conservation and restoration. Springer Verlag. (invited)
- 85) Kelly*, D.W., J. Muirhead*, D.D. Heath and H.J. Maclsaac. 2006. Contrasting patterns in genetic diversity following multiple invasions of fresh and brackish waters. *Molecular Ecology* 15:3641-3653.
- 84) Muirhead*, J. Ejsmont-Karabin and H.J. Maclsaac. 2006. Predicting rotifer species richness in lakes. *Freshwater Biology* 51:1696-1709.

- 83) Kelly, D.W., H.M. Maclsaac and D.D. Heath. 2006. Phylogeographic structure of a widespread amphipod on the eastern seaboard of North America: vicariance and dispersal effects. *Evolution* 60:257-267.
- 82) Colautti*, R., I. Grigorovich* and H.J. Maclsaac. 2006. Propagule pressure: A null model for biological invasions. *Biological Invasions* 8:1023-1037.
- 81) Gray*, D.K., I.C. Duggan* and H.J. Maclsaac. 2006. Can sodium hypochlorite reduce the risk of species introductions from diapausing invertebrate eggs in non-ballasted ships? *Marine Pollution Bulletin* 52:689-695.
- 80) Colautti*, R.I., S.A. Bailey*, C. van Overdijk*, K. Amundsen and H.J. Maclsaac. 2006. Characterized and projected costs of nonindigenous species in Canada. *Biological Invasions* 8:45-59.
- 79) Duggan*, I.C., C.A.M. Rixon* and H.J. Maclsaac. 2006. Popularity and propagule pressure: determinants of introduction and establishment of aquarium fish. *Biological Invasions* 8:377-382.
- 78) Bailey*, S.A., N. Kanavillil* and H.J. Maclsaac. 2006. Salt water flushing to reduce diapausing egg viability: interactive effects of temperature and salinity. *Diversity and Distributions* 12:328-335.
- 77) Wonham*, M.J., M.A. Lewis and H.J. Maclsaac. 2005. Minimizing invasion risk by reducing propagule pressure: application to ballast-water exchange. *Frontiers in Ecology and the Environment* 9:473-478.
- 76) Wonham*, M.J., S.A. Bailey*, H.J. Maclsaac and M.A. Lewis. 2005. Modeling the invasion risk of diapause organisms transported in ballast sediments. *Canadian Journal of Fisheries and Aquatic Sciences* 62:2463-2474.
- 75) Rixon*, C.A.M., I.C. Duggan*, N.M.N. Bergeron*, A. Ricciardi and H.J. Maclsaac. 2005. Invasion risks posed by the aquarium trade and live fish markets on the Laurentian Great Lakes. *Biodiversity and Conservation* 14:1365-1381.
- 74) Muirhead*, J., B. Leung, C. van Overdijk*, D.W. Kelly*, N. Kanavillil*, K. Marchant and H.J. Maclsaac. 2005. Modeling local and long-distance dispersal of the emerald ash borer *Agrilus planipennis* (Coleoptera) in North America. *Diversity and Distributions* 12:71-79.
- 73) Bailey*, S.A., K. Nandakumar*, I.C. Duggan*, C.D.A. van Overdijk*, T.H. Johengen, D.F. Reid and H.J. Maclsaac. 2005. *In situ* hatching of invertebrate diapausing eggs from ships' ballast sediment. *Diversity and Distributions* 11:453-460.
- 72) Duggan*, I.C., C.D.A. van Overdijk*, S.A. Bailey*, P.T. Jenkins, H. Limén* and H.J. Maclsaac. 2005. Invertebrates associated with residual ballast water and sediments of cargo carrying ships entering the Great Lakes. *Canadian Journal of Fisheries and Aquatic Sciences* 62:2463-2474.
- 71) Colautti*, R.I., J. Muirhead*, R. Biswas and H.J. Maclsaac. 2005. Realized versus apparent enemy release in the European starling. *Biological Invasions* 7:723-732.
- 70) Limen*, H., C.D.A. van Overdijk* and H.J. Maclsaac. 2005. Food partitioning between the amphipods *Echinogammarus ischnus*, *Gammarus fasciatus* and *Hyalella azteca* as revealed by stable isotopes. *Journal of Great Lakes Research* 31:97-104.
- 69) Therriault*, T.W., M.I. Orlova^, M.F. Docker, H.J. Maclsaac and D.D. Heath. 2005. Invasion dynamics of a freshwater mussel (*Dreissena rostriformis bugensis*) in Eastern Europe as revealed by microsatellite analyses. *Heredity* 95:16-23.
- 68) Colautti*, R.I., M. Manca, M. Viljanen, H.A.M. Ketelaars, H. Bürgi, H.J. Maclsaac and D.D. Heath. 2005. Invasion genetics of the Eurasian spiny waterflea *Bythotrephes*:

- Evidence for bottlenecks and gene flow using microsatellite data. *Molecular Ecology* 14:869-879.
- 67) Bailey*, S., D. Reid, H.J. Maclsaac., T.W. Therriault* and R. Colautti*. 2005. Management of aquatic nuisance species in the Great Lakes. *The Toledo Journal of Great Lakes' Law, Science & Policy*. 5:101-112.
- 66) Gray*, D.K., I.C. Duggan*, S.A. Bailey* and H.J. Maclsaac. 2005. Can partial ballast exchange reduce the viability of diapausing eggs in the ballast tanks of ships? *Biological Invasions* 7:531-539.
- 65) Muirhead*, J.R. and H.J. Maclsaac. 2005. Development of lakes as hubs in an invasion network. *Journal of Applied Ecology* 42:80-90.
- 64) Bailey*, S., I.C. Duggan*, P.T. Jenkins and H.J. Maclsaac. 2005. Invertebrate resting stages in residual ballast sediment of transoceanic ships. *Canadian Journal of Fisheries and Aquatic Sciences* 62:1090-1203.
- 63) Orlova^, M.I., Muirhead, J., P.I. Antonov, G. Kh. Shcherbina, Ya.I. Starobogatov, G.I. Biochino, T.W. Therriault* and H.J. Maclsaac. 2004. Range expansion of quagga mussels *Dreissena rostriformis bugensis* in the Volga River and Caspian Sea basin. *Aquatic Ecology* 38:561-578.
- 62) Holeck, K., E.L. Mills, H.J. Maclsaac, M. Dochoda, R.I. Colautti*, and A. Ricciardi. 2004. Bridging troubled waters: Biological invasions, transoceanic shipping, and the Laurentian Great Lakes. *Bioscience* 54:919-929.
- 61) Maclsaac, H.J., J.V.M. Borbely*, J.R. Muirhead* and P. Graniero. 2004. Backcasting and forecasting biological invasions of inland lakes. *Ecological Applications* 14:773-783.
- 60) Colautti*, R.I. and H.J. Maclsaac. 2004. A neutral terminology for defining invasive species. *Diversity and Distributions* 10:135-141.
- 59) Nicholls, K. and H.J. Maclsaac. 2004. Euryhaline, sand-dwelling, testate rhizopods in the Great Lakes. *Journal of Great Lakes Research* 30:123-132.
- 58) Cristescu, M., J. Witt, I. Grigorovich*, P.D.N. Hebert and H.J. Maclsaac. 2004. Dispersal of the Ponto-Caspian amphipod *Echinogammarus ischnus*: Invasion waves from the Pleistocene to the present. *Heredity* 92:197-203.
- 57) Bailey*, S.A., I.C. Duggan*, C. van Overdijk*, T.H. Johengen, D.F. Reid and H.J. Maclsaac. 2004. Salinity tolerance of diapausing eggs of freshwater zooplankton. *Freshwater Biology* 49:286-295.
- 56) Therriault*, T.W., M. Docker, M.I. Orlova^, D. Heath and H.J. Maclsaac. 2004. Molecular resolution of Dreissenidae (Mollusca: Bivalvia) including the first report of *Mytilopsis leucophaeta* in the Black Sea basin. *Molecular Phylogenetics and Evolution* 30:479-489.
- 55) Colautti*, R.I., A. Ricciardi, I.A. Grigorovich*, and H.J. Maclsaac. 2004. Does enemy release predict invasion success? *Ecology Letters* 7:721-733.
- 54) Laxson, C.L., K.N. McPhedran*, J.C. Makarewicz, I.V. Telesh and H. J. Maclsaac. 2003. Effects of the invasive cladoceran *Cercopagis* on the lower food web of Lake Ontario. *Freshwater Biology* 48: 2094-2106.
- 53) Grigorovich*, I.A., R. Colautti*, K. Holeck, E.L. Mills, A. Ballert and H.J. Maclsaac. 2003. Ballast-mediated animal introductions in the Laurentian Great Lakes: retrospective and prospective analyses. *Canadian Journal of Fisheries and Aquatic Sciences* 60:740-756.
- 52) Bailey*, S.A., C.D.A. van Overdijk*, P. Jenkins and H.J. Maclsaac. 2003. Viability of invertebrate resting stages collected from residual ballast sediment of transoceanic vessels. *Limnology and Oceanography* 48:1701-1710.

- 51) Grigorovich*, I.A., T.W. Therriault* and H.J. Maclsaac. 2003. History of aquatic invertebrate invasions in the Caspian Sea. *Biological Invasions* 5:103-115.
- 50) Grigorovich*, I.A., R.I. Colautti*, D. Gray*, I.C. Duggan*, and H.J. Maclsaac. 2003. Lake Superior: an invasion coldspot? *Hydrobiologia* 499:199-210.
- 49) van Overdijk*, C.D.A., I.A. Grigorovich*, T. Mabee*, W. Ray, J.J.H. Ciborowski and H.J. Maclsaac. 2003. Microhabitat selection by the amphipods *Echinogammarus ischnus* and *Gammarus fasciatus* in laboratory and field experiments: displacement patterns and mechanisms. *Freshwater Biology* 48:567-578.
- 48) Duggan*, I.C., S.A. Bailey*, R.I. Colautti*, D.K. Gray*, J.C. Makarewicz and H.J. Maclsaac. 2003. Biological invasions in Lake Ontario: past, present and future. In : M. Munawar: State of Lake Ontario: Past, present and future. Backhuys Publishing, Netherlands. pp. 541-558. (invited)
- 47) Colautti*, R., A. Niimi, van Overdijk*, C.D.A., E.L. Mills, K. Holeck and H.J. Maclsaac. 2003. Spatial and temporal analysis of shipping vectors to the Great Lakes. In: Invasive Species. Pathways, vectors and risk assessment. Global Invasive Species Program, edited by G. Ruiz and J.T. Carlton. pp. 227-246. (invited)
- 46) Makarewicz, J.C., E. Damaske, C. Laxson, I. Grigorovich and H.J. Maclsaac. 2002. Seasonal and vertical distribution of food web and contaminant dynamics of *Cercopagis* in Lake Ontario. *Aquatic Invaders* 13:1-6.
- 45) Austen, M.J.W., J.J.H. Ciborowski, L.D. Corkum, T.B. Johnson, H.J. Maclsaac, J.L. Metcalfe-Smith, D.W. Schloesser and S.E. George. 2002. Impacts of nonindigenous aquatic invasive species on the Lake Erie ecosystem. In: Proceedings of the 11th International Aquatic Invasive Species Conference. Pp. 117-131.
- 44) Grigorovich*, I.A., H.J. Maclsaac, N.V. Shadrin and E.L. Mills. 2002. History of nonindigenous aquatic invertebrate introductions in the Ponto-Caspian region. *Canadian Journal of Fisheries and Aquatic Sciences* 59:1189-1208.
- 43) Therriault*, T.W., I.A. Grigorovich*, D. Kane, E. Haas, D. Culver and H.J. Maclsaac. 2002. Range expansion of the exotic zooplankter *Cercopagis pengoi* into western Lake Erie and Muskegon Lake. *Journal of Great Lakes Research* 28:698-701.
- 42) Maclsaac, H.J., T.C. Robbins and M.A. Lewis. 2002. Modeling ships' ballast water as invasion threats to the Great Lakes. *Canadian Journal of Fisheries and Aquatic Sciences* 59:1245-1256.
- 41) Berg, D.J., D.W. Garton, H.J. Maclsaac, V. Panov and I. Telesh[^]. 2002. Identification of a source and erosion of founder effects in an exotic species. *Freshwater Biology* 47:275-282.
- 40) Therriault*, T.W., I.A. Grigorovich*, M.E. Cristescu, H.A.M. Ketelaars, M. Viljanen, D.D. Heath and H.J. Maclsaac. 2001. Taxonomic resolution of the genus *Bythotrephes* Leydig using molecular markers and re-evaluation of its global distribution. *Diversity and Distributions* 8:67-84.
- 39) Maclsaac, H.J., I.A. Grigorovich* and A. Ricciardi. 2001. Reassessment of species invasions concepts: the Great Lakes basin as an example. *Biological Invasions* 3: 405-416.
- 38) Grigorovich*, I.A., Dovgal, I.V. and H.J. Maclsaac. 2001. *Acineta nitocrae*: A new suctorian epizoic on *Nitocra hibernica* from Lake Erie. *Archiv für Hydrobiologie* 152: 161-176.
- 37) Cristescu, M., J. Witt, P. Hebert, I.A. Grigorovich* and H.J. Maclsaac. 2001. An invasion history for *Cercopagis pengoi* based on mitochondrial gene sequences. *Limnology and Oceanography* 46: 224-229.

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- 35) Ricciardi, A. and H.J. Maclsaac. 2000. Recent mass invasion of the North American Great Lakes by Ponto-Caspian species. *Trends in Ecology and Evolution* 15:62-65.
- 34) Bially*, A. and H.J. Maclsaac. 2000. Fouling mussels (*Dreissena*) colonize soft sediments in Lake Erie and facilitate benthic invertebrates. *Freshwater Biology* 43: 85-98.
- 33) Maclsaac, H.J., H.A.M. Ketelaars, I.A. Grigorovich*, C. Ramcharan and N.D. Yan. 2000. Modeling *Bythotrephes longimanus* invasions in the Great Lakes basin based on its European distribution. *Archiv für Hydrobiologie* 149:1-21.
- 32) Grigorovich*, I.A., H.J. Maclsaac, I.K. Rivier, N.V. Aladin and V.E. Panov. 2000. Comparative biology of the Ponto-Caspian cladoceran *Cercopagis pengoi* from Lake Ontario, Baltic Sea and Caspian Lake. *Archiv für Hydrobiologie* 149:23-50.
- 31) Grigorovich*, I.A., Kornushin, A.V., and H.J. Maclsaac. 2000. Moitessier's pea clam *Pisidium moitessierianum* (Bivalvia, Sphaeriidae) in the Great Lakes: A cryptogenic species. *Hydrobiologia* 435:153-165.
- 30) Maclsaac, H.J., I.A. Grigorovich*, J. Hoyle, N.D. Yan and V. Panov. 1999. Invasion of Lake Ontario by the Ponto-Caspian predatory cladoceran *Cercopagis pengoi*. *Canadian Journal of Fisheries and Aquatic Sciences* 56:1-5.
- 29) Maclsaac, H.J., O.E. Johannsson, J. Ye, W.G. Sprules, J.H. Leach, J.A. McCorquodale and I.A. Grigorovich*. 1999. Filtering effects of introduced bivalve (*Dreissena polymorpha*) in a shallow lake: application of a hydrodynamic model. *Ecosystems* 2:338-350.
- 28) Grigorovich*, I.A. and H.J. Maclsaac. 1999. First record of the European amphipod *Corophium mucronatum* Sars (Amphipoda: Corophiidae) in the Laurentian Great Lakes. *Journal of Great Lakes Research* 25:401-405.
- 27) Maclsaac, H.J. 1999. Biological invasions in Lake Erie: past, present, and future. In: *The State of Lake Erie: past, present and future*. M. Munawar (ed.) p. 305-322. (invited)
- 26) Roe*, S. and H.J. Maclsaac. 1998. Temporal variation of organochlorine contaminants in the zebra mussel *Dreissena polymorpha* in Lake Erie. *Aquatic Toxicology* 41:125-140.
- 25) Coulas*, R., H.J. Maclsaac and W. Dunlop. 1998. Selective predation by lake herring (*Coregonus artedii*) on exotic zooplankton (*Bythotrephes cederstroemi*) in Harp Lake, Ontario. *Freshwater Biology* 40:343-356.
- 24) Mazak*, E.J., H.J. Maclsaac, M.R. Servos and R. Hesslein. 1997. Influence of feeding habits on organochlorine contaminant accumulation in Great Lakes waterfowl. *Ecological Applications* 7:1133-1143.
- 23) Roe*, S. and H.J. Maclsaac. 1997. Deep-water population structure and reproductive state of quagga mussels (*Dreissena bugensis*) in Lake Erie. *Canadian Journal of Fisheries and Aquatic Sciences* 54:2428-2433.
- 22) Lozon*, J. and H.J. Maclsaac. 1997. Biological Invasions: are they dependent on disturbance? *Environmental Reviews* 5:131-144. (invited)
- 21) Maclsaac, H.J. 1996. Population structure of an introduced species (*Dreissena polymorpha*) along a wave-swept disturbance gradient. *Oecologia* 105:484-492.

- 20) Maclsaac, H.J. 1996. Potential abiotic and biotic impacts of zebra mussels on the inland waters of North America. *American Zoologist* 36:287-299. (invited)
- 19) Maclsaac, H.J., C. Lonnee* and J.H. Leach. 1995. Suppression of microzooplankton by zebra mussels: importance of mussel size. *Freshwater Biology* 34:379-387.
- 18) Maclsaac, H.J. and R. Rocha*. 1995. Effects of suspended clay on zebra mussel feces and pseudofeces production. *Archiv für Hydrobiologie* 135:53-64.
- 17) Havas, M., D.G. Woodfine, P. Lutz, K. Yung, H.J. Maclsaac and T.C. Hutchinson. 1995. Biological recovery of two previously acidified, metal-contaminated lakes near Sudbury, Ontario, Canada. *Water, Air and Soil Pollution* 85:791-796.
- 16) Maclsaac, H.J. 1994. Size selective predation on zebra mussels by crayfish. *Journal of the North American Benthological Society* 13:206-216.
- 15) Maclsaac, H.J. 1994. Comparative growth and survival of *Dreissena polymorpha* and *Dreissena bugensis*, exotic molluscs introduced to the Great Lakes. *Journal of Great Lakes Research* 20:783-790.
- 14) Bunt*, C., H.J. Maclsaac and W.G. Sprules. 1993. Pumping rates and projected filtering impacts of juvenile zebra mussels in western Lake Erie. *Canadian Journal of Fisheries and Aquatic Sciences* 50:1017-1022.
- 13) Sprules, W.G., B. Bergström, H. Cyr, B. Hargreaves, S. Kilham, H.J. Maclsaac, R. Stemberger and R. Williams. 1992. Optical instruments for studying zooplankton distribution and abundance. *Archiv für Hydrobiologie (Suppl.)* 36:45-58.
- 12) Maclsaac, H.J., W.G. Sprules, O.E. Johannsson and J.H. Leach. 1992. Filtering impacts of larval and sessile zebra mussels in western Lake Erie. *Oecologia* 92:30-39.
- 11) Maclsaac, H.J., W.G. Sprules and J.H. Leach. 1991. Ingestion of small-bodied zooplankton by zebra mussels: Can cannibalism on larvae influence adult population dynamics? *Canadian Journal of Fisheries and Aquatic Sciences* 48:2051-2060.
- 10) Maclsaac, H.J. and J.J. Gilbert. 1991. Discrimination between exploitative and interference competition between *Keratella cochlearis* and Cladocera. *Ecology* 72:924-937.
- 9) Maclsaac, H.J. and J.J. Gilbert. 1991. Competition between *Keratella cochlearis* and *Daphnia ambigua*: effects of temporal patterns of food availability. *Freshwater Biology* 25:189-198.
- 8) Yan, N.D., W. Keller, H.J. Maclsaac and L.J. MacEachern. 1991. Control of the plankton community structure of an acidic, mesotrophic lake by the invertebrate predator, *Chaoborus*. *Ecological Applications* 1:52-65.
- 7) Maclsaac, H.J. and J.J. Gilbert. 1990. Does exploitative or interference competition from *Daphnia* limit the abundance of *Keratella* in Loch Leven? A reassessment of May and Jones (1989). *Journal of Plankton Research* 12:1315-1322.
- 6) Maclsaac, H.J. and J.J. Gilbert. 1989. Competition between rotifers and cladocerans of different body sizes. *Oecologia* 81:295-301.
- 5) Gilbert, J.J. and H.J. Maclsaac. 1989. The susceptibility of *Keratella cochlearis* to interference by small cladocerans. *Freshwater Biology* 22:333-339.
- 4) Maclsaac, H.J., T.C. Hutchinson and W. Keller. 1987. Analysis of planktonic rotifer assemblages from Sudbury, Ontario, area lakes of varying chemical composition. *Canadian Journal of Fisheries and Aquatic Sciences* 44:1692-1701.
- 3) Maclsaac, H.J., W. Keller, T.C. Hutchinson and N. Yan. 1986. Natural changes in the planktonic Rotifera of a small, acid lake located near Sudbury, Ontario, following improvements in water chemistry. *Water, Air and Soil Pollution* 31:791-797.

- 2) Maclsaac, H.J. and T.C. Hutchinson. 1985. The influence of benthic tundra pond vegetation and prey behaviour on zooplankton predation by the flatworm *Mesostoma lingua*. *Canadian Journal of Zoology* 63:1617-1621.
- 1) Maclsaac, H.J., P.D.N. Hebert and S.S. Schwartz. 1985. Inter- and intraspecific variation in the acute thermal tolerance of *Daphnia*. *Physiological Zoology* 58:350-355.

PAPERS IN REVIEW (*student / postdoctoral fellow)

- 1) Muirhead*, J.R., M. Lewis and H.J. Maclsaac. Evaluation of stochastic gravity model selection for use in estimating non-indigenous species dispersal and establishment. *Biological Invasions*.
- 2) Chan*, F.T., S.A. Bailey and H.J. Maclsaac. Analysis of shipping traffic to the Canadian Arctic to assess ship-mediated invasion risk.
- 3) Wang*, T.N., S.A. Bailey, D.F. Reid, T.H. Johengen, P.T. Jenkins, C.J. Wiley, and H.J. Maclsaac. Efficacy of NaCl brine for treatment of ballast water against freshwater invasions. *Journal of Great Lakes Research*
- 4) Briski*, E., S.A. Bailey and H.J. Maclsaac. Regional variation in colonization and propagule pressure of invertebrates and their dormant eggs transported by ships' ballast sediments. *Limnology and Oceanography* (in revision).
- 5) Briski*, E., S. Ghabooli*, Sarah A. Bailey and Hugh J. Maclsaac. Assessing invasion risk across taxa and habitats: life stage as a determinant of invasion success. *Diversity and Distributions* (in revision)
- 6) Zhan*, A., P.V. Perepelizin, S. Ghabooli*, E. Paolocci, F. Sylvester*, P. Sardina, M.E. Cristescu and H.J. Maclsaac. Jump or creep: Population genetic structure and dispersal dynamics of the introduced golden mussels (*Limnoperna fortunei*) in South America. *Diversity and Distributions*.

BOOKS

Schubel, J.R., R.M. Anderson, S.W. Fuller, T.D. Heaver, G.J.D. Hewings, P.T. Jenkins, H.J. Maclsaac, S.W. Popper, F.H. Quinn, T.D. Waite, M.G. Wolman, J.B. Zedler, and A.P. Zimmerman. 2008. Great Lakes Shipping, Trade, and Aquatic Invasive Species. National Research Council (USA). Transportation Research Board, National Academies, Special Report 291. 130 pp.

INVITED BOOK REVIEWS AND OTHER PUBLICATIONS (*student/postdoc)

- Schubel, R.R., B. M. Lesht, H.J. Maclsaac, P.B. Ortner, and H.M. Stirratt. 2010. External Review, Cooperative Institute for Limnology and Ecosystems Research (CILER). Submitted to NOAA Science Advisory Board. 26p.
- Reid, D.F., Johengen, T., Maclsaac, H.J., Dobbs, F., Doblin, M., Drake, L., Ruiz, G., and Jenkins, P. 2007. Identifying, verifying, and establishing options for best management practices for NOBOB vessels. Final Report to the Great Lakes Protection Fund. 119 pp. + appendices.
- Maclsaac, H.J. 2005. Tracking Aquatic Invasive Species. Case Study 9.2. In: Principles of Conservation Biology. Third Edition. Edited by M.J. Groom, G.K. Meffe and C.R. Carroll. Sinauer, Sunderland, MA. pp. 323-325.
- U.S. National Academies. 2004. Panel Report. The St. Lawrence Seaway: Options of eliminate introduction of nonindigenous species into the Great Lakes. Phase I. Committee member.

- Maclsaac, H.J. Nov. 8, 2002. Commentary on paper by Kolar, C.S. & Lodge, D.M. Ecological predictions and risk assessment for alien fishes in North America. *Science* 298:1233 - 1236, (2002). *Nature* (see www.nature.com/nsu/021104/021104-14.html)
- Maclsaac, H.J., S. Bailey*, R. Colautti*, C. van Overdijk*, and K. Amundsen. May 2002. Economic impact of invasive nonindigenous species in Canada: a case study approach. 185 p. Submitted to the Office of the Auditor-General of Canada.
- Reid, D., H.J. Maclsaac, M. Dochoda, J. Gannon, M. Burrows and J. Hartig. 2002. Research and Management Priorities for Invasive Species in the Great Lakes. Prepared for: International Association of Great Lakes Researchers. May 2002. 17 pp. (available online at: <http://www.iaglr.org>)
- Maclsaac, H.J. 2001. Review of proposal by D.C. Schmitz and D. Simberloff 'Needed: a National Center for Biological Invasions'. *In: Issues in Science and Technology*. (available online at: <http://www.nap.edu/issues/18.1>)
- Maclsaac, H.J. and I. Grigorovich*. 1999. Editorial. Ponto-Caspian invaders in the Great Lakes. *Journal of Great Lakes Research* 25:1-2.
- Maclsaac, H.J. 1994. Review of: Practical Manual for Zebra Mussel Monitoring and Control, by R. Claudi and G.L. Mackie. 1994. Lewis Publishers, Boca Raton, Florida. *Journal of the North American Benthological Society* 13:411-412.

INVITED PRESENTATIONS (since 1993; plus 6 prior to 1992)(*student/postdoc)

- 122) January 2011: Society of Canadian Limnologists, Toronto. **Topic:** Spread and management of biological invasions in the Great Lakes and inland lakes. (Keynote).
- 121) November 2010: Canadian Council of Fisheries and Aquaculture Ministers, St. John's Newfoundland. **Topic:** Invasive Species as a Management Concern in Canada.
- 120) October 2010: 6th Annual Hwy H₂O Conference, Toronto, ON. **Topic:** Management of invasion vectors in the Laurentian Great Lakes.
- 119) May 2010: Bay Area Restoration Council, Hamilton, ON. **Topic:** Management of invasion vectors in the Great Lakes.
- 118) October 2009: International Congress on Biological Invasions, Fuzhou, China. **Topic:** Vectors and management of nonindigenous species in the Great Lakes. (Keynote)
- 117) June 2009: Environment Canada, Ottawa, ON. **Topic:** Canadian Aquatic Invasive Species Network.
- 115-116) April 2009: 16th International Conference on Aquatic Invasive Species, Montreal, Quebec. **Topic 1:** Can we predict and prevent aquatic invasions? (Plenary). **Topic 2:** Great Lakes shipping, trade, and AIS: A report from the U.S. Transportation Research Board.
- 114) December 2008: Buffalo State College, Buffalo, NY. **Topic:** Ballast water management: will it work for the Great Lakes?
- 113) November 2008: Fifty years of invasion ecology – the legacy of Charles Elton. Stellenbosch University, Stellenbosch, South Africa. **Topic:** The growth of invasion ecology in freshwater ecosystems. H.J. Maclsaac and A. Ricciardi (Keynote)
- 113) October 2008: IV Congreso Argentino de Limnología, Bariloche, Argentina. **Topic:** Models to predict species invasion (Keynote)
- 112) October 2008: University of Buenos Aires, Buenos Aires, Argentina. **Topic:** Vectors and pathways of species invasion: possibilities for intervention
- 111) October 2008: University of Buenos Aires, Argentina. **Topic:** Vectors and pathways of species invasion: possibilities for intervention

- 110) August 2008: Ecological Society of America, Milwaukee. **Topic:** Growth of invasion biology in aquatic ecosystems.
- 109) July 2008: Inland Seas Education Center, Traverse City, MI. **Topic:** Biology and management of ballast water.
- 107-108) June 2008: American Society of Limnology and Oceanography, St. John's Newfoundland. Symposium: Aquatic Invasive Species: Understanding invaders to prevent new introductions. **Topic 1:** Effects of life history and propagule pressure on spread of aquatic invasive species. (with J. Muirhead*); **Topic 2:** Advances in invasion ecology since Charles Elton. (fill-in Plenary speaker).
- 106) May 2008: International Association for Great Lakes Researchers, Peterborough, ON. Symposium: 20 years of zebra mussels in North America. **Topic:** Developments in invasion ecology. (with R. Tedla*)
- 105) November 2007: Science City, Windsor, ON. **Topic:** Canada's first educational exhibit on Aquatic Invasive Species
- 104) November, 2007: Latornell Conservation Symposium, Alliston, ON. **Topic:** Update on Canadian Aquatic Invasive Species Network projects in the Great Lakes region.
- 103) September 2007: U.S. Coast Guard Ballast Water meeting, Chicago, IL. **Topic:** Can open ocean ballast water exchange prevent invasions between freshwater ports? (with D. Gray*, T. Johengen and D. Reid).
- 102) August 2007: Ecological Society of America, Ecological and economic theory in analyzing risk in biological invasions Symposium. **Topic:** Predicting lake vulnerability to species invasion using a hierarchical approach. (with J. Muirhead*)
- 101) April 2007: Ontario Ministry of Natural Resources Research Symposium, Orilla, ON. **Topic:** The spread and threat to biodiversity of AIS in Ontario's lakes.
- 100) Feb 2007: University of Wisconsin, Milwaukee, Biology Department. **Topic:** Modeling species invasions.
- 99) Feb. 2007: University of Wisconsin, Milwaukee, Great Lakes Institute. **Topic:** Biological invasions, ships, and the Great Lakes
- 98) October 2006: McGill University, Montreal. **Topic:** Modeling biological invasions.
- 97) May 2006: US National Academy of Sciences, Transportation Research Board Meeting, Washington, D.C. **Topic:** Does open-ocean ballast exchange work?
- 96) March 2006: Foundation for American Communication, The not-so-Great Lakes: myths, truths, and the future of our water supply. University of Windsor, Windsor, ON. **Topic:** Biological invasions threaten the integrity of the Great Lakes.
- 95) January 2006: International Invasive Species Workshop, Halifax, NS. **Topic:** Progress in predicting occurrence of invasive species: models and the Canadian Aquatic Invasive Species Network.
- 94) November 2005: Coastal Zone Climate Change and Adaptation Symposium, Toronto, ON. **Topic:** Non-native species in the coastal Great Lakes, a challenge for the future.
- 93) November 2005: McIlwraith Field Naturalists Club, London, ON. **Topic:** The spread and threat to biodiversity of aquatic invasive species in Ontario's lakes.
- 92) May 2005: U.S. Coast Guard Workshop on NOBOB vessels, Cleveland, OH. **Topic:** Invertebrate animals and resting stages in NOBOB ships. H.J. MacIsaac, S. Bailey*, I. Duggan* & C. van Overdijk*.
- 91) May 2005: International Workshop on Biological Invasions of Inland Waters, Florence, Italy. **Topic:** Predicting biological invasions. (invited panelist)
- 90) April 2005: Department of Biology, Old Dominion University, Norfolk, VA. **Topic:** Vector-based models for predicting invasion risk in lakes.

- 89) March 2005, Invaders of the Great Lakes: Options for Prevention and Management. Michigan State University, East Lansing, MI. **Topic:** Invasion history, risks and consequences in the Great Lakes Region: An overview.
- 88) January 2005, Society of Canadian Limnologists, Windsor, ON. **Topic:** Canadian Aquatic Invasive Species Network. (Plenary)
- 87) November 2004, Lake Superior Binational Committee, Thunder Bay, ON: **Topic:** Invasive species in Lake Superior: An overview.
- 86) November 2004: Invasive Species Conference, York University, Toronto, ON. **Topic:** Predicting biological invasions and the economic cost of invasive species in Canada
- 85) October 2004: Department of Natural Resources, Cornell University, Ithaca, NY. **Topic:** What can invasions of inland lakes contribute to invasion theory?
- 84) September 2004: International Joint Commission, Research Steering Committee, Windsor, ON. **Topic:** Biological Invasions in the Great Lakes: mechanisms of introduction, resource management options, and control possibilities
- 83) August 2004: 6th International Symposium on Sediment Quality Assessment, Antwerp, Belgium; **Topic:** Sediments and ships: natural biota as biological contaminants. H.J. MacIsaac, S.A. Bailey*, I.C. Duggan*, & N. Kanavillil* (Keynote)
- 82) May 2004: Bacon and Eggheads Breakfast, Parliament Hill, Ottawa, ON; **Topic:** Invasive species in Canada: coming soon to a lake near you.
- 81) May 2004: Great Lakes Sustainability Conference, Cleveland, OH. **Topic:** *In situ* assessment of NOBOB ships as a vector of invasive species to the Great Lakes. H.J. MacIsaac, S. Bailey*, C. van Overdijk*, I. Duggan*, N. Kumar*, D. Reid, & T. Johengen.
- 79-80) May 2004: Baltic Sea – Great Lakes Species Invasion Workshop, Ann Arbor, MI. **Topic 1:** History of biological invasions in the Great Lakes. **Topic 2:** NOBOB ships as invasive species vectors S. Bailey*, H.J. MacIsaac, C. van Overdijk*, I. Duggan*, N. Kumar*, D. Reid, & T. Johengen.
- 78) May 2004: Presentation to Michigan House of Representatives members, Ann Arbor, MI. **Topic:** Biology of ballast water.
- 76-77) February 2004: University of Alberta, Edmonton, Alberta. **Topic 1:** Invasion kinetics of spiny waterflea dispersal in Ontario. **Topic 2:** Biological invasion in the Great Lakes.
- 74-75) Nov. 2003: Department of Fisheries and Oceans National Science Workshop, St. John's, NFLD; **Topic 1:** Biological invasions in the Great Lakes: past, present and future; **Topic 2:** Invasive Species Network.
- 73) Oct. 2003: Buffalo State College, Buffalo, NY. **Topic:** Invasive species: Coming soon to a lake near you.
- 72) Oct. 2003: Great Lakes Regional Waterways Management Forum, Sarnia, ON. **Topic:** Great Lakes NOBOB ship study update
- 71) Oct. 2003: University of Louisville, Louisville, KY. **Topic:** Invasive species: Coming soon to a lake near you
- 70) Sept. 2003: International Joint Commission, Ann Arbor, MI. **Topic:** Shipping pathways for species introduction in the Great Lakes.
- 69) Sept. 2003: Great Lakes Fishery Commission Meeting, Chicago, IL. **Topic:** Ballast water vectors of invasive species introduction.
- 68) July 2003: Network for Environmental Assessment and Remediation, Geneva Switzerland. **Topic:** Predicting biological invasions using studies of human-mediated dispersal vectors (Keynote).

- 67) June 2003, Global threats to large lakes symposium, DePaul University, Chicago, IL. **Topic:** Invasive Species: Great Lakes and international perspectives and policy needs.
- 66) June 2003, Society of Environmental Journalists, Michigan State University, East Lansing, MI; **Topic:** Current issues of aquatic invasive species in the Great Lakes.
- 65) June 2003, Ontario Association of Anglers and Hunters, 12th International Aquatic Invasive Species Conference, Windsor, ON; **Topic:** Ecological aspects of fishhook waterfleas in Lake Erie.
- 64) May 2003, Morris Katz Memorial Lectureship in Environmental Research, York University, Toronto, ON. **Topic:** Predicting biological invasions in the Great Lakes and inland lakes in Ontario.
- 63) May 2003, Lake Erie at the Millennium (2003), University of Windsor, Windsor, ON. **Topic:** Is the Huron-Erie corridor an invasion 'hotspot'? With R.I. Colautti*, I.A. Grigorovich*, S.A. Bailey*, I.C. Duggan* & H.J. Maclsaac.
- 62) March 2003, State of Lake Ontario Conference, Niagara Falls, ON. **Topic:** Recent invasive species in the Lake Ontario ecosystem – invasive species, food web disruption, impact on fisheries.
- 61) February 2003: Zoology Department, University of Toronto (sponsored by the Great Lakes Research Consortium Seminar Series), Toronto, ON; **Topic:** Tracking species introductions in North American and Eurasian freshwaters.
- 60) February 2003: Canadian Council of Fisheries and Aquaculture Ministers, Aquatic Invasive Species Task Group, Mississauga, ON. **Topic:** Nonindigenous species in Canada's aquatic ecosystems: Where do we go from here?
- 59) January 2003: Canadian Conference for Fisheries Research and Society of Canadian Limnologists, Ottawa, ON. **Topic:** Retrospective analyses of nonindigenous species in Canada's aquatic ecosystems: a century of disaster. (Plenary)
- 58) June 2002: Environment Canada's Invasive Study and Great Lakes Binational Executive Committee Meeting, Toronto, ON. **Topic:** Retrospective and prospective analyses of invasions in the Great Lakes
- 57) June 2002: Great Lakes Fishery Commission, Chicago, IL. **Topic:** Retrospective and prospective analyses of invasions in the Great Lakes: More to come?
- 56) June 2002: United Nations University conference, Hamilton, ON. **Topic:** Shipping vectors for nonindigenous species introductions to the Great Lakes. S. Bailey* & H.J. Maclsaac.
- 55) May 2002: Superior: State of the Lake Conference, Michigan Technological University, Houghton, MI. **Topic:** Transoceanic shipping patterns in Lake Superior: A ballast 'hot spot' without invaders. R.I. Colautti*, I.A. Grigorovich*, I.C. Duggan* & H.J. Maclsaac.
- 54) April 2002: Keynote Speaker: Environmental Risk Assessment Conference, Cleveland State University, Cleveland, OH. **Topic:** Modelling species invasions.
- 53) February 2002: Zoology Department, University of Guelph, Guelph, ON. **Topic:** Global and Great Lakes perspectives on introduced species.
- 52) November 2001: Key Session Speaker, North American Lake Management Society, Madison, WI. **Topic:** Invasion of nonindigenous species into the Great Lakes: patterns and mechanisms.
- 51) November 2001: National Workshop on Invasive Alien Species, Ottawa, ON. **Topic:** Species invasions in the Great Lakes: Charting a path to progress.

- 50) November 2001: Featured Speaker, Science Teachers' Association of Ontario, Toronto, ON. **Topic:** Global and Great Lakes perspectives on introduced species as an agent of environmental change.
- 49) September 2001: International Joint Commission Public Forum on Great Lakes—St. Lawrence Water Quality, Montreal, QC. **Topic:** How bad is the alien invasive species problem in the Great Lakes?
- 48) August 2001: USA – Russia Invasive Species Workshop, Borok, Russia. **Topic:** Vectors, patterns and processes for introducing aquatic invaders: the Ponto-Caspian connection. H.J. Maclsaac & D. Reid. (Plenary).
- 47) August 2001: USA – Russia Invasive Species Workshop, Borok, Russia. **Topic:** Assessment of transoceanic vessels as vectors for nonindigenous species introductions to the Great Lakes. D. Reid & H.J. Maclsaac. (Plenary).
- 46) August 2001: USA – Russia Invasive Species Workshop, Borok, Russia. **Topic:** Patterns and mechanisms of invertebrate introductions in the Ponto-Caspian region. I.A. Grigorovich* & H.J. Maclsaac.
- 45) August 2001: American Fisheries Society Conference, Phoenix, AZ. **Topic:** Non-indigenous species invasion vectors in the Great Lakes basin.
- 44) June 2001: Canada-USA Inter-university Seminar, University of Michigan, Ann Arbor, MI. **Topic:** Management of aquatic nuisance species in a changing environment.
- 43) March 2001: Lake Erie in the Millennium Conference, University of Windsor, Windsor, ON. **Topic:** Invertebrate invasions in Lake Erie: recent developments and prognostications.
- 42) February 2001: Biology Department, York University, Toronto, ON. **Topic:** Vectors and patterns of aquatic species invasions in the Great Lakes basin.
- 41) February 2001: Global Change Conference, Laurentian University, Sudbury, ON. **Topic:** Invasive species in the Great Lakes basin.
- 40) February 2001: Invasive Species Seminar Series, Zoology Department, University of Washington, Seattle, WA. **Topic:** Invasion corridors to the Great Lakes.
- 39) October 2000: Society of Environmental Journalists' 10th National Conference, Michigan State University, East Lansing, MI. **Topic:** Introduction to Great Lakes invasions issue, and Panelist for Ballast Blues: Controlling exotic species introductions.
- 38) October 2000: Testimony to the Michigan House of Representatives, East Lansing, MI. **Topic:** Past, present and future of invasions in the Great Lakes.
- 37) July 2000: Roseland Rotary Club, Windsor, ON. **Topic:** Species invasions in the Great Lakes.
- 36) July 2000; International Joint Commission, Great Lakes Water Quality Board Meeting. Ann Arbor, MI. **Topic:** Overview of the biological pollution problem in the Great Lakes.
- 34-35) May 2000. Workshop on Ponto-Caspian invaders in northern and western Europe and the North American Great Lakes, Copenhagen, Denmark. **Topic 1:** Modeling species invasions H.J. Maclsaac & N. Yan. **Topic 2:** Ecosystem impacts of introduced invertebrates in Ponto-Caspian basins. I. Grigorovich* & H.J. Maclsaac.
- 32-33) February 2000: 10th International Aquatic Nuisance Species and Zebra Mussel Conference, Toronto, ON. **Topic 1:** Risk-based standards; **Topic 2:** Invited Participant, Ballast Water Effluent Standards Panel.
- 31) January 2000: Environmental Monitoring Assessment Network, National Science Meeting, Toronto, ON. **Topic:** Biological invasions in and around the Great Lakes basin.

- 30) November 1999: Department of Biology, Laval University, Quebec City, PQ. **Topic:** Patterns and processes of species invasions in the Great Lakes.
- 29) November 1999: Great Lakes Environmental Research Laboratory, National Oceanic and Atmospheric Administration, Ann Arbor, MI. **Topic:** Eurasian species invasions into the Great Lakes
- 28) November 1999: Global Invasive Species Program, Invasion Vectors Conference, Smithsonian Environmental Research Center, Edgewater, MD. **Topic:** Invertebrate invasions: pathways and mechanisms. H.J. Maclsaac & I. Grigorovich*.
- 27) August 1999: Institute of Hydrobiology, National Academy of Sciences of Ukraine, Kyiv, Ukraine. **Topic:** Ponto-Caspian species in the Great Lakes H.J. Maclsaac, I. Grigorovich*.
- 26) April 1999: Lake Erie at the Millennium - Changes, Trends, and Trajectories Conference, Windsor, ON. **Topic:** Reassessment of species invasions dogma: Lake Erie as an example. H.J. Maclsaac, A. Ricciardi & I.A. Grigorovich*.
- 25) August 1998: Societas Internationalis Limnologiae, Dublin, Ireland. Aquatic Invasive Species Workshop. **Topic:** The need for East-West collaboration to reduce Ponto-Caspian invasions.
- 24) May 1998: International Association of Great Lakes Researchers, Hamilton, ON. **Topic:** Distribution and invasion history of *Bythotrephes* in Eurasia and North America H.J. Maclsaac, H. Ketelaars, I. Grigorovich* & C. Ramcharan.
- 23) April 1998: Chilean Society of Limnologists, Puerto Varas, Chile. **Topic:** Species introductions in the Great Lakes: lessons for Chile.
- 22) March 1998: Universidad Nacional del Comahue, Bariloche, Argentina. **Topic:** Ecosystem effects of introduced species in the Great Lakes.
- 21) October 1997: Biology Department, Dartmouth College, Hanover, NH. **Topic:** *Bythotrephes* invasion in a small Ontario lake: ecosystem effects.
- 19-20) June 1997: International Association for Great Lakes Researchers Conference, Buffalo, NY. **Topic 1:** Exotic Species: are they dependent on disturbance? H. Maclsaac & J. Lozon*. **Topic 2:** Colonization ecology of soft sediments by *Dreissena* in Lake Erie. A. Bially* & H.J. Maclsaac.
- 18) March 1997: Instituto di Italiano Idrobiologia, Pallanza, Italy. **Topic:** *Bythotrephes* ecology in large lakes in the Great Lakes and in Lake Maggiore.
- 17) February 1997: a) Swiss Institute for Environmental Science and Technology, Kastanienbaum, Switzerland; b) Max Planck Institut für Limnologie, Plön, Germany; c) Water Storage Corporation, Werkendam, The Netherlands; **Topic:** *Bythotrephes* invasion of a small Ontario lake: zooplankton community changes and predation by planktivorous fish.
- 16) February 1997: Zoology Department, University of Western Ontario, London, ON. **Topic:** Effects of physical disturbance on exotic mussels in Lake Erie.
- 15) June 1996: North American Benthological Society Conference, Kalispell, MT. **Topic:** Impact of physical disturbance on *Dreissena* on hard- and soft-bottom substrates. H.J. Maclsaac & A. Bially*.
- 14) June 1996: American Society for Limnology and Oceanography Conference, Milwaukee, WI. **Topic:** Occurrence of *Bythotrephes cederstroemi* in diets of lake herring in a small Ontario lake. R.A. Coulas*, H.J. Maclsaac & N.D. Yan.
- 13) May 1996: International Association for Great Lakes Researchers Conference, Mississauga, ON. **Topic:** Past, present and future biological invasions in Lake Erie.

- 12) March 1996: Harrow Research Station, Agriculture Canada, Harrow, ON. **Topic:** Ecology and ecotoxicology of zebra mussels in Lake Erie.
- 10-11) November 1995: 15th International Symposium on Lake, Reservoir and Watershed Management, Toronto, ON. **Topic 1:** Effects of *Bythotrephes cederstroemi* on microzooplankton: an enclosure experiment R. Coulas* & H.J. Maclsaac. **Topic 2:** Ecological and ecotoxicological changes in western Lake Erie following zebra mussel invasion. H.J. Maclsaac, J.H. Leach & G.D. Haffner.
- 8-9) July 1995: Russian Academy of Sciences, Zoological Institute, St. Petersburg, Russia. **Topic 1:** Ecosystems consequences of species invasions in the Great Lakes. **Topic 2:** Mechanisms and consequences of zooplankton competition.
- 7) January 1995: American Society of Zoologists, St. Louis, MO. **Topic:** Potential abiotic and biotic effects of zebra mussels on inland waterways of North America.
- 6) June 1994: American Society of Limnology and Oceanography Meeting, Miami, FL. **Topic:** Microzooplankton predation by zebra mussels and quagga mussels: the importance of mussel size.
- 5) May 1994: International Association for Great Lakes Researchers Annual Meeting, Windsor, ON. **Topic:** Zebra mussel predation by crayfish: another view.
- 4) June 1993: American Society of Limnology and Oceanography Conference, Edmonton, AL. **Topic:** Dietary utilization of a recent Great Lakes invader by native species.
- 3) May 1993: University of Toronto, Department of Zoology, Toronto, ON. **Topic:** Ecological integration of exotic species: lessons from the Great Lakes.
- 1-2) February 1993: Department of Biology, University of Texas, Arlington, TX. **Topic:** Ecological integration of exotic species: lessons from the Great Lakes.

CONTRIBUTED PRESENTATIONS (since 1992; plus 7 prior to 1992; *=student/pdf)

- 125-127) February 2011, American Society for Limnology and Oceanography, San Juan, Puerto Rico. **Topic 1:** Models to predict invasion risk vis ships' hull fouling. Maclsaac, H.J., F. Sylvester, and O. Kalaci. **Topic 2:** Domestic vessels as a potential pathway of nonindigenous species in the Great Lakes – St. Lawrence River. A.A. Adebayo, S.A. Bailey & H.J. Maclsaac. **Topic 3:** First vector-based risk assessment for ship-mediated biological invasions in the Canadian Arctic. Chan, F.T., S. A. Bailey, C.J. Wiley, and H.J. Maclsaac.
- 124-127) September 2010, International Council for the Exploration of the Sea Annual Science Conference, Nantes, France. **Topic 1:** Invasion genetics of *Ciona intestinalis* species complex: from regional endemism to global homogeneity. A. Zhan*, H.J. Maclsaac & M. Cristescu. **Topic 2:** A.A. Adebayo, S.A. Bailey & H.J. Maclsaac. Lakers as vectors for the introduction and spread of nonindigenous species in the Great Lakes – St. Lawrence River. **Topic 3:** Multiple introductions and invasion pathways for the invasive ctenophore *Mnemiopsis leidyi* in Eurasia. S. Ghabooli*, T. Shiganova, A. Zhan*, M. Cristescu, P. Eghtesadi-Araghi & H.J. Maclsaac. **Topic 4:** Use of DNA barcoding to detect invertebrate invasive species from diapausing eggs. E. Briski*, M. Cristescu, S.A. Bailey & H.J. Maclsaac.
- 121-123) August 2010, 17th International Conference on Aquatic Invasive Species, San Diego. **Topic 1:** Multiple introductions and invasion pathways for the invasive ctenophore *Mnemiopsis leidyi* in Eurasia. S. Ghabooli*, A. Zhan*, M. Cristescu & H.J. Maclsaac, T. Shiganova and P. Eghtesadi-Araghi. **Topic 2:** Identification of ballast sediment invertebrate species using resting eggs and mitochondrial markers. H.J. Maclsaac, E. Briski*, M. Cristescu & S.A. Bailey. **Topic 3:** Tales from the crypt:

- instrument records from inside operating ballast tanks. D.F. Reid, T. Johengen, S.A. Bailey, C. Wiley, P. Jenkins & H.J. Maclsaac.
- 120) August 2010, 31st Congress of the International Limnological Society, Cape Town, South Africa. **Topic:** Management of invasion vectors in the Great Lakes.
- 113-119) April 2010, Canadian Aquatic Invasive Species Network Annual Meeting, Victoria, British Columbia. **Topic 1:** A comprehensive analysis of ship-mediated invasion risk in the Canadian Arctic. Chan*, F.T., S.A. Bailey & H.J. Maclsaac. **Topic 2:** Evaluation of stochastic gravity model selection for use in estimating spread of aquatic invasive species. Muirhead*, J. & H.J. Maclsaac. **Topic 3:** Looking at both sides of the invasion: the colonial violet tunicate in North America. Bock, D., A. Zhan*, H.J. Maclsaac & M.E. Cristescu. **Topic 4:** Lakers as transport vectors for introduction and spread of nonindigenous species in the Great Lakes. Adebayo*, A. & H.J. Maclsaac. **Topic 5:** Use of NaCl brine as a ballast water treatment technology on transoceanic vessels entering the Great Lakes. Wang*, T., S. Bailey, C. Wiley, P. Jenkins, T. Johengen, D. Reid & H.J. Maclsaac. **Topic 6:** Efficacy of regulations in protecting the Great Lakes from biological invasions via ships' ballast water. Briski*, E., S.A. Bailey, M.E. Cristescu & H.J. Maclsaac. **Topic 7:** Invasion genetics of the model species *Ciona intestinalis*: cryptic species diversity and high population connectivity. Zhan*, A., H.J. Maclsaac & M.E. Cristescu.
- 112) October 2009: International Congress on Biological Invasions, Fuzhou, China. **Topic:** Global genetic analyses suggest recent human-mediated expansion for *Ciona intestinalis*, a highly invasive tunicate species complex. Zhan*, A., M. Cristescu & H.J. Maclsaac.
- 106-111) May 2009: Canadian Aquatic Invasive Species Network Annual Meeting, Halifax, Nova Scotia. **Topic 1:** Comparative phylogeography of two invasive colonial tunicates reveals contrasting invasion histories in North America. D. Bock, C. Lejeusne*, H.J. Maclsaac & M.E. Cristescu. **Topic 2:** Using brine to limit spread of nonindigenous species by ballast water. J. Bradie*, S. Bailey, C. Wiley & H.J. Maclsaac. **Topic 3:** Invertebrates and resting stages in ships entering Canadian freshwater and marine ports. E. Briski*, S. Bailey, M.E. Cristescu & H.J. Maclsaac. **Topic 4:** Analysis of ship-mediated invasion risks in the Canadian arctic. (award winning poster) F. Chan*, S. Bailey, C. Wiley & H.J. Maclsaac. **Topic 5:** Use of NaCl brine as a ballast treatment technology for transoceanic vessels entering the Great Lakes. T. Wang*, S. Bailey, H.J. Maclsaac, C. Wiley, P. Jenkins, T. Johengen & D.F. Reid. **Topic 6:** Hull fouling as a vector for introduction of non-indigenous species. F. Sylvester* & H. Maclsaac.
- 95-105) April 2009: 16th International Conference on Aquatic Invasive Species, Montreal, Quebec. **Topic 1:** Invertebrates and resting stages in sediments of vessels entering Canadian ports. E. Briski*, M. Cristescu, H. Maclsaac & S. Bailey. **Topic 2:** Comparative phylogeography of two invasive colonial tunicates reveals contrasting invasion histories in North America. D. Bock, C. Lejeusne*, H.J. Maclsaac & M.E. Cristescu. **Topic 3:** Genetic tracks of the invasion of *Limnoperna fortunei* in South America. S. Ghabooli*, F. Sylvester*, C. Lejeusne, M. Cristescu, H. Maclsaac, E. Paolucci & P. Sardina. **Topic 4:** Ships as vectors for freshwater bryozoans. R. Kipp, S. Bailey, H. Maclsaac & A. Ricciardi. **Topic 5:** Detection of a colonizing aquatic, non-indigenous species. C. Harvey*, S. Quershi* & H.J. Maclsaac. **Topic 6:** Trends on publications of the world's worst 100 invasive species, 1965-2007. R. Tedla* & H.J. Maclsaac. **Topic 7:** Use of NaCl brine and road salt as a ballast treatment technology. T. Wang*, H. Maclsaac, S. Bailey, C. Wiley, P. Jenkins, T. Johengen & D.F. Reid.

- Topic 8:** The role of domestic shipping as a vector for introduction and spread of non-indigenous species in the Great Lakes. S. Bailey, M. Rup*, C. Wiley, M. Minton, W. Miler, G. Ruiz & H.J. Maclsaac. **Topic 9:** Brine treatment for limiting spread of nonindigenous species in ballast water. J. Bradie*, H.J. Maclsaac, S.A. Bailey, C. Wiley, D.F. Reid, T. Johengen, S. Santagata & G. Ruiz. **Topic 10:** Hull fouling as a vector for introduction of non-indigenous species. F. Sylvester*, C. van Overdijk & H. Maclsaac.
- 93-94) November 2008: Fifty years of invasion ecology – the legacy of Charles Elton. Stellenbosch University, Stellenbosch, South Africa. **Topic 1:** Detecting a colonizing, nonindigenous species. C.T. Harvey*, S. Quershi* & H.J. Maclsaac. **Topic 2:** Large-scale assessment of hull-fouling as a vector for introduction of nonindigenous species. F. Sylvester* & H.J. Maclsaac.
- 92) October 2008: IV Congreso Argentino de Limnología, Bariloche, Argentina. **Topic:** Genetic tracks of the invasion of *Limnoperna fortunei* in South America. F. Sylvester*, S. Ghabooli*, E. Paolucci, P. Sardiña, C. Lejeusne, M.E. Cristescu & H.J. Maclsaac.
- 91) August 2008: Ecological Society of America, Milwaukee. C. Harvey*, S. Quershi* & H.J. Maclsaac. **Topic:** Finding exotic needles in a haystack: early detection of colonizing species when rare.
- 87-90) June 2008: American Society of Limnology and Oceanography, St. John's Newfoundland. **Topic 1:** Looking at Lakers: domestic shipping as a vector for introduction or spread of aquatic nonindigenous species in the Great Lakes. S.A. Bailey, M.P. Rup*, C.J. Wiley, M.S. Minton, A.W. Miller, G.M. Ruiz & H.J. Maclsaac. **Topic 2:** Comparative assessment of invertebrate resting stages in ballast sediment of ships entering Canadian freshwater and marine ports. Briski*, E., S.A. Bailey, M.E. Cristescu & H.J. Maclsaac. **Topic 3:** Sylvester*, F., C. van Overdijk* and H.J. Maclsaac. Hull fouling as a vector for introduction of nonindigenous species in the Great Lakes. **Topic 4:** J. Jacobs* & H.J. Maclsaac. Predicting spread of *Cabomba caroliniana* in Ontario.
- 83-86) April 2008: Canadian Aquatic Invasive Species Network Annual Meeting. **Topic 1:** Efficacy of NaCl treatment for limiting spread of nonindigenous species via ballast water. J. Bradie*, S.A. Bailey, H.J. Maclsaac & C.J. Wiley. **Topic 2:** Comparative assessment of invertebrate resting stages in ballast sediment of ships entering Canadian freshwater and marine ports. E. Briski*, S. Bailey, M.E. Cristescu & H.J. Maclsaac. **Topic 3:** Detecting invasive species when rare: finding needles in haystacks. S. Quershi*, C.T. Harvey* & H.J. Maclsaac. **Topic 4:** Hull fouling as a vector for introduction of nonindigenous species in the Great Lakes. Sylvester*, F., C. van Overdijk* & H.J. Maclsaac.
- 80-82) September 2007: 15th International Conference on Aquatic Invasive Species, Nijmegen, Netherlands. **Topic 1:** Modeling spread of aquatic invasive species using hierarchical models. (with J. Muirhead*). **Topic 2:** Biological efficacy of NaCl brine as a ballast water treatment technology for transoceanic vessels entering the Great Lakes. (with J. Bradie*, S. Bailey & C. Wiley) **Topic 3:** Biological effectiveness of open-ocean ballast water exchange for preventing invertebrate invasions between freshwater ports. (with D.F. Reid, D. Gray* & T. Johengen).
- 79) September 2006, 4th European Conference on Biological Invasions (NEOBIOTA), Vienna, Austria. **Topic:** Use and limitations of molecular markers in identification of invasion pathways (H.J. Maclsaac, D. Gray*, D. Kelly*, J. Muirhead*, S. Ellis* & D. Heath).

- 76-78) June 2006, American Society of Limnology and Oceanography Meeting, Victoria, B.C. **Topic 1:** A risk assessment for the distribution of the Chinese mitten crab in North America based on propagule pressure and environmental niche models. L.-M. Herborg*, C.L. Jerde, D.M. Lodge, G.M. Ruiz & H.J. Maclsaac. **Topic 2:** Vicariance and dispersal effects on phylogeographic structure and speciation in estuaries. D.W. Kelly*, H.J. Maclsaac & D. Heath. **Topic 3:** Prediction of dispersal and establishment of aquatic nonindigenous species across Ontario lakes: linking vector-based and habitat-matching models. J. Muirhead* & H.J. Maclsaac.
- 75) May 2006, 14th International Conference on Aquatic Invasive Species, Key Biscayne, Florida, U.S.A., **Topic:** Does open-ocean ballast exchange prevent the transfer of invertebrates between freshwater ports? D.K. Gray*, C. van Overdijk*, T. Johengen, D.F. Reid & H.J. Maclsaac.
- 71-74) May 2006, International Association for Great Lakes Research Conference, Windsor. **Topic 1:** Examination of the salinity tolerance of nonindigenous invertebrates in the Great Lakes. S. Ellis*, H.J. Maclsaac & G.M. Ruiz. **Topic 2:** The use of ecological niche modeling in identifying high risk areas for species invasions. L.-M. Herborg*, B. Cudmore, N.E. Mandrak, D.M. Lodge & H.J. Maclsaac. **Topic 3:** Does open-ocean ballast exchange reduce the risk of future Great Lakes' introductions from transoceanic vessels? D.K. Gray*, C. van Overdijk*, T. Johengen, D.F. Reid & H.J. Maclsaac. **Topic 4:** Prediction of dispersal and establishment of aquatic nonindigenous species across Ontario lakes. J. Muirhead* & H.J. Maclsaac.
- 70) January 2006: Canadian Conference for Fisheries Research 2006, Calgary, Alberta. **Topic:** Vicariance and dispersal effects on phylogeographic structure and speciation in a widespread estuarine invertebrate. D. Kelly*, H.J. Maclsaac & D. Heath.
- 69) September 2005: Aquatic Ecology at the Dawn of the XXI Century, Russian Academy of Sciences, St. Petersburg, Russia. **Topic:** Biological invasion by nonindigenous species is an emerging force of change to global aquatic communities. H.J. Maclsaac, M. Orlova & I. Telesh.
- 68) August 2005: Ecological Society of America Annual Meeting, Montreal, Quebec. **Topic:** Life-history variation and the dispersal of invasive species in Ontario lakes. J. Muirhead* & H.J. Maclsaac.
- 67) May 2005: Biological Invasions of Inland Waters Workshop, Florence, Italy. **Topic:** Identification of source:destination relationships using spatially-explicit vector models and microsatellite DNA. H.J. Maclsaac, R. Colautti* & J. Muirhead*
- 66) May 2005: 2nd Annual Aquatic Invaders Workshop, Queen's University Biological Station, ON. **Topic:** Effect of gravity model choice on spatial prediction of spiny waterflea dispersal. J. Muirhead* & H.J. Maclsaac
- 65) January 2005, Society of Canadian Limnologists, Windsor, ON. **Topic:** Invasion genetics of the spiny waterflea. R. Colautti*, D. Heath & H.J. Maclsaac.
- 60-64) September 2004: 13th International Conference on Aquatic Invasive Species, Ennis, Ireland. **Topic 1:** Genetic identity and invasion dynamics of the quagga mussel *Dreissena bugensis rostriformis* in the Volga River basin and Great Lakes as revealed by microsatellites. H.J. Maclsaac, T. Therriault*, M. Docker, M. Orlova, & D. Heath. **Topic 2:** Transfer of nonindigenous species to the Great Lakes in residual water of No Ballast on Board (NOBOB) vessels. C. van Overdijk*, S. Bailey*, I. Duggan*, D. Reid, T. Johengen & H.J. Maclsaac; **Topic 3:** Modeling the risk of invasion by diapausing eggs in residual ballast sediments. S. Bailey*, I. Duggan*, D. Gray*, & H.J. Maclsaac. **Topic 4:** Viability of invertebrate diapausing eggs exposed to saltwater: implications

- for the Great Lakes' ship ballast management. D. Gray*, S. Bailey*, I. Duggan*, & H.J. Maclsaac. **Topic 5:** Life history variation and the spread of nonindigenous species across Ontario lakes. J. Muirhead* & H.J. Maclsaac.
- 59) July 2004: 7th INTECOL International Wetlands Conference, Utrecht, The Netherlands. **Topic:** Predicting biological invasions in the Great Lakes and beyond.
- 58) August 2003: Ecological Society of America, Savanna, Georgia. **Topic:** What determines invasion success? R.I. Colautti* & H.J. Maclsaac.
- 53-57) June 2003: International Association for Great Lakes Research Conference, DePaul University, Chicago, IL. **Topic 1:** IAGLR 'White Paper' on Aquatic Invasive Species: progress, product and prognosis. J. Gannon, D. Reid, H.J. Maclsaac, M. Dochoda, M. Burrows, D. Mason & J. Hartig; **Topic 2:** Transoceanic NOBOB vessels entering the Great Lakes: vectors for new invasions. C. van Overdijk*, S. Bailey*, I. Duggan* & H.J. Maclsaac; **Topic 3:** NOBOB project task 2 – ballast tank mesocosms experiments and use of incubator-emergence traps. D. Reid, S. Bailey*, T. Johengen, S. Constant, P. Jenkins, C. van Overdijk*, I. Duggan* & H.J. Maclsaac; **Topic 4:** Just add water: evidence for in situ emergence of invertebrates from resting stages in NOBOB ballast tanks. I. Duggan*, S. Bailey*, C. van Overdijk*, D. Reid, T. Johengen & H.J. Maclsaac; **Topic 5:** Can partial ballast exchange reduce viability of resting stages in the ballast tanks of NOBOB ships? D. Gray*, I. Duggan*, S. Bailey* & H.J. Maclsaac.
- 46-52) June 2003: 12th International Conference on Aquatic Invasive Species, Windsor, ON. **Topic 1:** Economic impacts of invasive nonindigenous species in Canada: quantifying the nonquantified. H. Maclsaac, S. Bailey*, R. Colautti*, C. van Overdijk* & K. Amundsen; **Topic 2:** Risk assessment for prediction of invertebrate invaders in the Laurentian Great Lakes. I. Grigorovich*, R. Colautti* & H.J. Maclsaac. **Topic 3:** The Great Lakes NOBOB project: 38 ships and 82 tanks later. T. Johengen, D. Reid, P. Jenkins, S. Bailey*, C. van Overdijk*, F. Dobbs & H.J. Maclsaac; **Topic 4:** Do resting eggs in ballast tanks pose an invasion risk? S. Bailey*, C. van Overdijk*, I. Duggan*, & H.J. Maclsaac; **Topic 5:** A null hypothesis for biological invasions. R. Colautti*, I. Grigorovich* & H.J. Maclsaac; **Topic 6:** Invasion kinetics of spiny waterflea dispersal in Ontario. J. Muirhead* & H.J. Maclsaac; **Topic 7:** Enemy Release Hypothesis. H.J. Maclsaac, R. Colautti & A. Ricciardi.
- 43-45) March 2003: 3rd International Conference on Marine Bioinvasions, La Jolla, CA; **Topic 1:** Economic impacts of invasive nonindigenous species in Canada: a case study. with S. Bailey*, R. Colautti*, C. van Overdijk*, & K. Amundsen; **Topic 2:** Assessment of live invertebrates and resting stages from NOBOB vessels entering the Great Lakes: potential vectors for new invasions. C. van Overdijk*, S. Bailey*, I. Duggan* & H. Maclsaac; **Topic 3:** Use of incubator-emergence traps for hatching studies in ballast tanks D. Reid, T. Johengen, F. Dobbs, S. Bailey*, I. Duggan* & H. Maclsaac.
- 40-42) February 2003: American Society of Limnology and Oceanography, Salt Lake City, UT. **Topic 1:** Changes in zooplankton community composition mediated by nonindigenous species; **Topic 2:** Sleeping stowaways: do resting eggs on transoceanic vessels pose an invasion risk? S. Bailey*, I. Duggan*, C. van Overdijk* & H.J. Maclsaac; **Topic 3:** Nasties in NOBOBs: Potential for introduction of invertebrates to the Great Lakes from residual ballast water. C. van Overdijk, I. Duggan, S. Bailey & H.J. Maclsaac.
- 39) January 2003: Canadian Conference for Fisheries Research and Society of Canadian Limnologists, Ottawa, ON. **Topic:** Viability of resting eggs collected from residual

- sediments in NOBOB vessels. S.A. Bailey*, I. Duggan*, C. van Overdijk* & H.J. Maclsaac.
- 38) September 2002: Speciation in Ancient Lakes Conference, Irkutsk, Russia. **Topic:** Old basins with new species.
- 31-37) February 2002: 11th International Conference on Aquatic Invasive Species, Alexandria, VA. **Topic 1:** Modeling ballast water invasion risks in the Great Lakes. H. Maclsaac, T. Robbins, & M. Lewis; **Topic 2:** Overview and taxonomic assessment of live invertebrates in residual ballast sediment of NOBOB vessels entering the Great Lakes. T. Therriault*, H.J. Maclsaac & H. Limen*; **Topic 3:** Identification of live invertebrates in residual ballast water of NOBOB vessels entering the Great Lakes. C. van Overdijk*, S. Bailey* & H.J. Maclsaac; **Topic 4:** Assessment of invasion risk posed by invertebrate resting eggs in residual ballast sediments in NOBOB vessels entering the Great Lakes. S. Bailey* & H.J. Maclsaac; **Topic 5:** Distribution, fecundity, genetics and invasion routes of *Cercopagis pengoi* – a new exotic zooplankter in the Great Lakes. Makarewicz, J., H.J. Maclsaac, I. Grigorovich*, E. Mills, E. Damaske, M. Cristescu, W. Pearsall, M. LaVoie, R. Keats, L. Rudstam, P. Hebert, H. Halbritter, T. Kelly & C. Matkovich*; **Topic 6:** Impacts of nonindigenous species on the Lake Erie ecosystem. M. Austen, D. Schloesser, L. Corkum, J. Ciborowski, K. Fynn-Aikins, H. Maclsaac, J. Smith, & T. Johnson; **Topic 7:** Invasion ‘hotspots’ of the Laurentian Great Lakes. I.A. Grigorovich*, R. I. Colautti* & H.J. Maclsaac.
- 30) August 2001; Society of Conservation Biology, Hilo, HI. **Topic:** Invasion corridors to the Great Lakes: routes and mechanisms. H. Maclsaac, R. Colautti*, I. Grigorovich*, T. Therriault*, T. Robbins & M. Lewis.
- 27-29) April 2001: National Conference on Marine Bioinvasions, New Orleans, LA. **Topic 1:** Spatial and temporal analysis of shipping vectors to the Great Lakes. H.J. Maclsaac, R. Colautti*, C. van Overdijk*, A. Niimi, E. Mills & K. Holeck; **Topic 2:** Aquatic invertebrate introductions in the Black, Azov and Caspian Sea basins. I. Grigorovich*, H. Maclsaac & N.V. Shadrin; **Topic 3:** Assessment of transoceanic NOBOB Vessels and low-salinity ballast water as vectors for nonindigenous species introductions to the Great Lakes M. Doblin, F. Dobbs, H. Maclsaac & D. Reid.
- 24-26) June 2000: American Society of Limnology and Oceanography, Copenhagen, Denmark. **Topic 1:** Modeling *Bythotrephes* invasions. **Topic 2:** Global distribution, ecological traits and potential impacts of the invading cladoceran *Cercopagis pengoi*. I. Grigorovich*, H. Maclsaac, J. Makarewicz, S. Afanasiev, A. Primak & G. Zhdanova. **Topic 3:** Multiple invasions of the Great Lakes by Ponto-Caspian species: homogenization in progress. I.A. Ricciardi & H.J. Maclsaac.
- 23) December 1999: Biology Department, University of Windsor, Windsor, ON. **Topic:** 38.3°C in the shade, cryptic bordellos and Ponto-Caspian invaders in the Great Lakes.
- 20-22) August 1998: Societas Internationalis Limnologiae, Dublin, Ireland. **Topic 1:** Hydrodynamic modeling of *Dreissena* filtering effects. H.J. Maclsaac, O. Johannsson, J. Ye, W.G. Sprules, J. Leach & J. McCorquodale. **Topic 2:** Distribution and invasion history of *Bythotrephes* in Europe and North America. H. Ketelaars, H.J. Maclsaac, & I. Grigorovich*, C. Ramcharan. **Topic 3:** *Bythotrephes* in the Great Lakes: genetic identification of European source population and erosion of founder effects. D. Berg, D. Garton, H. Maclsaac & V. Panov.
- 19) May 1998: International Association of Great Lakes Researchers, Hamilton, ON. **Topic:** *Bythotrephes cederstroemi*. Where did it come from? Where is it going? D. Berg, D. Garton, H. Maclsaac & V. Panov.

- 18) May 1997: North American Benthological Society Annual Meeting, San Marcos, TX. **Topic:** Colonization ecology of *Dreissena* mussels on soft sediments in Lake Erie. A. Bially* & H. MacIsaac.
- 17) March 1996: Sixth International Zebra Mussel Conference, Dearborn, MI. **Topic:** Temporal and spatial variation in organochlorine contaminants in zebra mussels from western Lake Erie. S. Roe* & H.J. MacIsaac.
- 16) November 1995: 5th International Symposium on Lake, Reservoir and Watershed Management, Toronto, ON. **Topic:** Importance of *Bythotrephes cederstroemi* in the diet of lake herring (*Coregonus artedii*) from a small, Ontario lake. R. Coulas* & H.J. MacIsaac.
- 15) June 1995: American Society of Limnology and Oceanography Meeting, Reno, NV. **Topic:** Effects of suspended clay on filtering behaviour of *Dreissena polymorpha*. H.J. MacIsaac & R. Rocha*.
- 11-14) May 1995: International Association of Great Lakes Researchers, Michigan State University, East Lansing, MI. **Topic 1:** Disturbance gradients and zebra mussel population structure in Lake Erie. **Topic 2:** Biomagnification of organic contaminants in western Lake Erie waterfowl that consume zebra mussels. E. Mazak* & H.J. MacIsaac. **Topic 3:** Uptake from food of ortho-substituted PCBs by the zebra mussel Y. Couillard*, C. Straughan, H.J. MacIsaac, J. Ciborowski & D. Haffner.
- 8-10) February 1995: 5th International Zebra Mussel Conference, Toronto, ON. **Topic 1:** Population structure of an introduced species (*Dreissena polymorpha*) along a disturbance gradient. **Topic 2:** Dietary exposure of *Dreissena*-consuming waterfowl to organochlorine contaminants. E. Mazak* & H.J. MacIsaac. **Topic 3:** Effects of suspended clay on filtering behaviour of zebra mussels. H. MacIsaac & R. Rocha*.
- 7) January 1995: American Society of Zoologists, St. Louis, MO. **Topic:** Dietary exposure to organic contaminants of waterfowl that consume zebra mussels. E. Mazak* & H.J. MacIsaac.
- 5-6) March 1994: 4th International Zebra Mussel Research Conference, Madison, WI. **Topic 1:** Comparative growth rates of zebra and quagga mussels in the Great Lakes. **Topic 2:** Size-dependent *Dreissena* predation on microzooplankton. H.J. MacIsaac & C. Lonnee*.
- 4) November 1993: Ontario Technology Transfer Conference, Toronto, ON. **Topic:** A laboratory and field based determination of the elimination and uptake rate constants for PCBs in *Dreissena polymorpha*. H. Morrison, H. MacIsaac & D. Haffner.
- 3) February 1993: 3rd International Zebra Mussel Research Conference, Toronto, ON. **Topic:** Size-specific zebra mussel predation by crayfish.
- 2) June 1992: International Association of Great Lakes Researchers, University of Waterloo, Waterloo, ON. **Topic:** Are zebra mussels responsible for recent water quality changes in western Lake Erie?
- 1) May 1992: North American Benthological Society, Louisville, KY. **Topic:** Zebra mussel (*Dreissena polymorpha*) filtering impacts in Lake Erie.

CONFERENCE SESSIONS ORGANIZED/CHAired (since 1992)

- February 2011: American Society for Limnology and Oceanography, Annual Winter Conference, San Juan, Puerto Rico. Session Co-chair, Topic: Biological Invasions
- September 2010: International Council for Exploration of the Sea, Annual Science Conference, Nantes, France. Session Co-chair. Global Change and Aquatic Bioinvasions.

- September 2007: 15th International Conference on Aquatic Invasive Species, Nijmegen, Netherlands. Tracking Aliens.
- July 2004: 7th INTECOL International Wetlands Conference, Utrecht, Netherlands. Co-coordinator: Biological invasions in wetlands: problems and solutions
- January 2003: Canadian Society of Limnologists, Ottawa, ON. Invasive Species.
- August 2002: Third International Symposium of Speciation in Ancient Lakes, Irkutsk, Russia. Co-coordinator: Conservation of unique ecosystems of ancient lakes
- June 2000: American Society of Limnology and Oceanography, Copenhagen, Denmark. Co-coordinator of 4 sessions on Species Invasions.
- May 2000. Workshop Co-coordinator: Ponto-Caspian invaders in northern and western Europe and the North American Great Lakes, Societas Internationalis Limnologiae Working Group on Exotic Species, Copenhagen, Denmark.
- August 1998: Societas Internationalis Limnologiae, Dublin, Ireland. **Session 1:** Co-Chair: Advances in *Dreissena* Biology. **Session 2:** Co-Chair: Biology and Ecology of *Bythotrephes*.
- June 1996: North American Benthological Society Conference, Kalispell, Montana. Advances in *Dreissena* Research.
- May 1996: International Association for Great Lakes Researchers Conference, Mississauga, ON. Symposium Co-chair: The Great Lakes and its people, culture, human health, regulatory structures, and ecosystem management.
- May 1995: International Association of Great Lakes Researchers, Michigan State University, East Lansing, MI. Session Chair: Lake Erie Trophic Transfer Studies.
- June 1993: Session Chair: Effects of exotic species on biodiversity and ecosystem functioning, American Society of Limnology and Oceanography Conference, Edmonton, Alberta.
- June 1992: Co-chair, Ontario Ecology and Ethology Colloquium, University of Windsor, Windsor, ON.

Research Grants:

- 2011-2016: NSERC Network on Aquatic Invasive Species. \$6,557,500 (PI, with 27 others)
- 2010-2015: Models to predict colonization, spread and evolution of invasive species. NSERC Discovery Grant, \$61,000/yr
- 2010-2013: Models to predict colonization, spread and evolution of invasive species. NSERC Discovery Accelerator Supplement, \$40,000/yr
- 2010-2015: Ship-mediated species invasions in the Arctic. NSERC Northern Research Supplement, \$10,000/yr
- 2010: Robot for processing genetic samples, NSERC RTI Equipment, \$120,000 (D. Heath, PI plus 4 others)
- 2009: Validation and quantification system for nucleic acids and proteins. NSERC RTI Equipment, \$43,955 (PI: M. Cristescu, H. MacIsaac, D. Heath, C. Weisener)
- 2009: Invasive Species Public Outreach, TD Canada Trust, Environment Fund, \$25,000
- 2008: Gradient thermal cyler, NSERC RTI. \$18,124 (PI: M. Cristescu; H. MacIsaac, D. Heath)
- 2007, 2008, 2009: Invasive Species Public Outreach, Environment Canada. \$45,000, \$40,000, \$35,000.
- 2007: High Capacity DNA Genotyping and Analysis Facility (P.I.: D. Heath, M. Cristescu, H. MacIsaac, T. Pitcher, S. Doucet, D. Mennill), NSERC RTI Equipment. \$67,124
- 2007: Gas chromatograph with autosampler. (P.I.: A. Fisk, S. Doucet, K. Drouillard, G. Haffner, H. MacIsaac, D. Mennill. NSERC RTI Equipment. \$98,500

- 2006-2011: Biological Invasions Research, Department of Fisheries and Oceans, \$30,000/yr
- 2006-2011: Canadian Aquatic Invasive Species Network, NSERC Research Network (P.I.: H. MacIsaac + 23 others), \$6,117,125
- 2005-2010: Deterministic, stage-based model of biological invasions; NSERC Discovery. \$20,000/yr.
- 2005, 2007, 2008: Aquatic Invasive Species in the Great Lakes and inland lakes, Ontario Ministry of Natural Resources, \$48,800, \$40,000, \$40,000.
- 2005-2007: The microgenomics network: advancing knowledge of biological diversity through DNA barcodes; NSERC Research Network (P.I.: P.D.N. Hebert). \$5,700,000.
- 2004: NSERC Equipment, Genetics Equipment, (P.I.: D. Heath, with 5 others), \$80,000
- 2004-2006: Identifying, verifying, and establishing options for Best Management Practices for NOBOB Vessels, Great Lakes Protection Fund, (PI: Tom Johengen, with 8 Co-PIs), \$761,336 (US), share = \$106,525US
- 2004: Large Lake Ecosystems: A facility to quantify and model the impact of multiple stressors, Canadian Foundation for Innovation, (PI: Brian Fryer, with 8 Co-PIs), \$5,048,079
- 2003-2005: Biological Invasions Research, Department of Fisheries and Oceans, \$100,000
- 2003-2007 Bioeconomic assessment of species invasions, NSERC Collaborative Research Opportunities Grant, (co-P.I. with Mark Lewis), \$682,000
- 2002-2007: Bioeconomic assessment of species invasions (PI: David Lodge, with 6 co-PIs), U.S. National Science Foundation, \$2,900,000US (share = \$225,000US)
- 2003 Controlled Environment Chamber Facility. NSERC Equipment Grant. \$117,000 (P.I., with 3 others)
- 2003-2005 Developing and validating vector-based models of species invasion. NSERC Discovery Grant. \$15,500/year.
- 2002-2003: Identification of testate rhizopods of possible marine origin in the Great Lakes (with K. Nicholls). U.S. Fish and Wildlife Service, \$10,000US
- 2002: Economic Impacts of invasive alien species on the Canadian economy. Office of the Auditor General of Canada, \$20,500.
- 2002 Public education campaign to prevent spread of spiny waterfleas to inland lakes in Ontario, Ministry of Natural Resources, \$15,000
- 2000-2003 Studies of non-indigenous species in the Great Lakes, Premier's Research Excellence Award. \$149,500
- 2001-2003 Assessment of transoceanic NOBOB vessels and low-salinity ballast water as vectors for nonindigenous species introductions to the Great Lakes. Great Lakes Protection Fund. \$1,122,673 US. (Share=\$206,000US) (T.H. Johengen, D.F. Reid, H.J. MacIsaac, G. Fahnenstiel, F. Dobbs, M. Doblin, G. Ruiz, P. Jenkins).
- 2001-2003 Ballast residuals in NOBOB (No Ballast On Board) vessels in Chesapeake Bay: Their biological and chemical characterization and a comparison with patterns in the Great Lakes. U.S. National Sea Grant. \$349,998US (Share = \$113,000US. (F. Dobbs, L. Drake, M. Doblin, T. Johengen, H. MacIsaac, and P. Jenkins).
- 2001 Field Vehicle, NSERC Equipment grant. \$27,885 (P.I., with 8 others)
- 2001 Gas chromatography, electron-capture and flame ionization detection system for research on environmental organic contaminants and metabolites, NSERC Equipment. \$45,000 (R. Letcher, P.I., with H. MacIsaac and 4 others)

- 2001 Rotary evaporation system for environmental organic contaminant and metabolite research, NSERC Equipment. \$14,191 (R. Letcher, P.I., with H. MacIsaac and 4 others)
- 2001 University Faculty Travel Grant, Society of Conservation Biology meeting, \$1,250
- 2001-2002 Taxonomic and genetic identification of nonindigenous species in Lake Superior, U.S. Fish and Wildlife Service and Department of Fisheries and Oceans. \$30,000US plus \$10,000 Can (P.I., with D. Heath).
- 2000-2001 Tracking shipping patterns in the Great Lakes, U.S. NOAA, \$100,000 US (D. Reid and H. MacIsaac)
- 2000-2001 Investigations of species occurrence in No-Ballast-On-Board Ships in the Great Lakes, U.S. Coast Guard. \$100,000 US. (D. Reid, H. MacIsaac, G. Ruiz and F. Dobbs)
- 2000-2001 Experimental examination of ballast-borne species in Great Lakes ships, U.S. E.P.A. \$120,000 US (D. Reid, H. MacIsaac, G. Ruiz and F. Dobbs)
- SHARE OF THE ABOVE THREE GRANTS IS \$96,000US.*
- 1999, 2000 Ponto-Caspian invasion workshop, NSERC International Opportunities Fund. \$17,500/yr. (P.I., with 6 others) Supplementary grants of \$20,000 and \$40,000 for workshop provided by U.S. E.P.A. and U.S. N.O.A.A. (PI = D. Reid)
- 2000 *In Situ* Fluorometer, NSERC Equipment, \$24,500. (P.I., J. Ciborowski, D. Haffner)
- 2000 Nutrient Autoanalyzer. NSERC Equipment, \$74,000. (D. Haffner, H. MacIsaac, B. Fryer)
- 1999-2003: Species Invasions, NSERC Research, \$14,400/yr
- 2000-2001 Species invasions in the Great Lakes: assessment of temporal patterns, Great Lakes Fishery Commission, \$45,000 U.S. (E. Mills. K. Holeck, H. MacIsaac, I. Grigorovich)
- 1995-1999 Determinants of invasion success in freshwater ecosystems. NSERC Operating, \$17,500
- 1999 Hydrolab, NSERC Equipment, \$14,400. (H. MacIsaac, D. Haffner, J. Ciborowski)
- 1999 Student Employment grant, Environment Canada, \$10,000
- 1998 International Development Research Centre, Research Cooperation Programme between Canada and Latin America, Faculty Travel Award, \$4,000
- 1998: Image analysis system, NSERC Equipment, \$8,740. (H. MacIsaac, P. Sale, J. Ciborowski).
- 2000, 1999, 1998: Summer Student Placement Award, \$800/yr
- 1998 Canadian Council for Human Resources in the Environment Industry, \$6,000
- 1997 Department of Foreign Affairs and International Trade, Science and Technology with European Partners, Travel Award, \$4,000
- 1997 Science Horizons, Environment Canada, \$12,500
- 1996-1997 Toxicity, ecological impacts, monitoring, causes, and public awareness of *Microcystis* in Lake Erie. Lake Erie Protection Fund (Ohio), \$227,290 US (D. Culver [P.I.] and 11 others)
- 1996 Environmental Youth Corps:
 Ministry of Natural Resources, \$6,878
 Ministry of Environment and Energy, \$5,160, \$1,550 and \$4,343
- 1994-1996 Food web impacts of *Bythotrephes* in inland lakes. Ontario Ministry of Environment and Energy, \$65,000 (Co-P.I. with W.G. Sprules)
- 1993-1996 Trophodynamics of contaminants and toxicological impacts in the zebra mussel -- waterfowl interaction. Wildlife Toxicology Fund, \$25,500/year (P.I., with 5 others)

- 1994-1995 Energy flow and contaminant dynamics in the Lake Erie ecosystem. Great Lakes University Research Fund, \$597,000 (D. Haffner [P.I.] and 20 others)
- 1993-1994 Ecological integration of zebra mussels in the Great Lakes: trophic interactions and impacts on contaminant dynamics. Ontario Ministry of the Environment, \$50,000 (P.I.; Co-investigators: D. Haffner, J. Ciborowski)
- 1994 Contaminant ecology of zebra mussels and quagga mussels in the Great Lakes. Environmental Youth Corps, Ministry of Environment and Energy, \$17,300
- 1992-1995 Zebra mussel recruitment processes. NSERC Operating, \$19,336/year
- 1992-1994 Consumption zebra mussels veliger larvae by invertebrate predators in Lake Erie. Department of Fisheries and Oceans -- NSERC Science Subvention, \$15,000/yr (W.G. Sprules and H.J. Maclsaac)
- 1990-1993 Effects of introduced zebra mussels on Lake Erie food webs. Ontario Ministry of Natural Resources, \$35,000 (Co-P.I. with W.G. Sprules)
- 1991-1992 Biological attributes and ecological impacts of the invading mollusc, *Dreissena polymorpha*. Great Lakes University Research Fund, Environment Canada, \$70,000 (Gerald Mackie (PI) and 7 others)

SERVICE TO THE PROFESSION:

Journal Associate Editorships:

- Biological Invasions (2008-current);
- Diversity and Distributions (2002-current);
- Aquatic Ecosystem Health and Management (1999-2008);
- Freshwater Biology (1999-2007)
- Proceedings of the National Academy of Sciences (USA): acting topic editor (2008, 2010)

Reviewer for the following funding agencies:

NSERC; National Science Foundation; Hudson River Foundation; Ohio Sea Grant; New York Sea Grant; Louisiana Sea Grant; Wisconsin Sea Grant; Michigan Sea Grant; California Sea Grant; U.S. National Sea Grant; Inter-American Institute for Global Change Research; Canadian Foundation for Innovation, European Science Foundation.

Reviewer for the following journals (about 5 papers per year):

Ecology; Oecologia; Bioscience; American Zoologist; Canadian Journal of Zoology; Limnology and Oceanography; Canadian Journal of Fisheries and Aquatic Sciences; Archiv für Hydrobiologie; Estuaries; Freshwater Biology; Internationale Revue der Gesamten Hydrobiologia; Journal of the North American Benthological Society; Journal of Great Lakes Research; Aquatic Toxicology; Hydrobiologia; Aquatic Sciences; Ecology Letters; Science; Environmental Management; Journal of Applied Ecology; Proceedings of the Royal Society of London; Environmental Science and Technology; Pacific Science; Ecoscience; Biological Invasions; Trends in Ecology and Evolution, Proceedings of the National Academy of Sciences (USA), Conservation Biology, Marine Ecology Progress Series; ICES Journal of Marine Science; Journal of the American Water Works Association; Aquatic Invasions.

External Thesis Examiner.

M.Sc.: Univ. Western Ontario (1); Concordia University (2), Montreal (1), Windsor (1), University of Northern British Columbia (1)

Ph.D. dissertations: University of Guelph (2), Queen's University (1), Monash University (1), Vilnius University (1), McGill University (1), Victoria University, New Zealand (1).

External examiner for promotion to:

Faculty promotion to professor (2010, Queen's University Belfast)
Faculty promotion to professor (2010, University of Wisconsin)
Faculty promotion to professor (2009, Queen's University Belfast)
Review of scientist for the South Africa National Research Foundation (2009)
Faculty Promotion to Senior Lecturer (Associate Professor), University of the West Indies, St. Augustine (2008)
Promotion of Scientist to GS-15 (U.S. E.P.A., 2008)
Senior Scientist (2007)(equivalent to full professor; Institute for Ecosystem Studies, N.Y.);
Specialist (equivalent to full professor; University of California, Davis, 2005);
Faculty promotion to full professor (2006, Old Dominion University; 2005, Laval University; 2005, York University; 2004, Cornell University)
Faculty promotion to associate professor (Pennsylvania State University, 2002).

Member/Advisor:

Member, Organizing Committee, North American Invasive Species Network. 2010.
Member, U.S. National Academy of Sciences' Water Science Technology Board, Committee on Assessing Numeric Limits for Living Organisms in Ballast Water (2010-current)
Member, Review Panel, Cooperative Institute for Limnology and Environmental Research, October 2010.
Co-chair, NSERC Discovery Grants panel 1503, Evolution and Ecology (2009-2010)
Member, NSERC panel 18, Evolution and Ecology (2007-2009)
Reviewer: Invasive species migration through the Chicago Area Waterways (CAWs): Comparative risk of Alternate Management Scenarios, US EPA (April 2008)
Member, Great Lakes Science Advisory Committee, International Joint Commission, (2007-2010)
Member, U.S. National Academy of Sciences' Transportation Research Board, Great Lakes Species Invasions Panel, Phases I (2004-2006) and II (2006-2008)
Member, National Ecological Observatory Network (USA, 2004-2005)
Member, Great Lakes Invasive Species Task Force, (2003-current)
Invited Panelist, Invasions and the Media, DePaul University, Chicago (2003)
City of Chicago Asian Carp Invasion Committee (2003)
Lake Michigan Exotic Species Panel (2001-2004)
Great Lakes Ballast Water Working Group (2000-current)
Societas Internationalis Limnologiae's Exotic Species Working Group, founding member (2000-current)
Advisor to the Office of the Auditor-General of Canada (2001-2002)
Advisor to the General Accounting Office (USA, 2002)

GRADUATE SUPERVISION:

Marco Hernandez, PhD (2010-current), Protecting ships from biofouling using cathodic methods
Remi Abisola, MSc, (2009-current), Invasive species in the St. Lawrence River.

Farrah Chan, PhD, (2008-current): arctic marine invasions (co-supervisor: S. Bailey)
 Sara Ghabooli, PhD (2008-current); genetic detection of invasive species
 Tony Wang, MSc, (2008-2011): *in situ* tests of salt water tolerance (co-supervisor: S. Bailey)
 Elizabeta Briski, Ph.D. (2006-2011): Comparative ballast-mediated invasions
 Johanna Bradie, M.Sc. (2007-2009): Ballast water treatment (co-supervisor: S. Bailey)
 Michael Jacobs, M.Sc. (2006-2008): Modeling invasion of fanwort in Ontario
 Sandra Ellis, M.Sc., (2005-2007): Salinity tolerance of invertebrates
 Jim Muirhead, Ph.D., (2002-2007): Models of species dispersal to inland lakes
 Derek Gray, M.Sc., (2004-2007): Efficacy of ballast water exchange
 Sarah Bailey, Ph.D., (2000-2005): Ships' residual ballast as invasion vector
 Robert Colautti, M.Sc. (2001-2004): Genetic surveys of invading waterfleas in Ontario
 Julianna Borbely, M.Sc. (2000-2001); Modeling *Bythotrephes* invasions
 Kerry McPhedran, M.Sc. (1999-2001); *Cercopagis pengoi* predation of zooplankton
 Colin van Overdijk, M.Sc. (1998-2000); Interactions between invasive amphipods
 Andrew Bially, M.Sc. (1995-1998); Island biogeography of introduced mussels
 Susan Roe, M.Sc. (1994-1996); Organic contaminants in zebra mussels
 Robert Coulas, M.Sc. (1994-1996); Fish predation on *Bythotrephes*
 Edward Mazak, M.Sc. (1993-1995); Contaminants in ducks that exploit zebra mussels

VISITING GRADUATE STUDENTS:

Pablo Perepelizin, PhD student at University of Buenos Aires, March-August 2010, Mitochondrial and microsatellite analysis of golden mussel from South America. Funded by Canada-Latin America Transfer Fund.

Esteban Paolucci, PhD student at University of Buenos Aires, March-August 2010, Gill ultrastructure of golden mussels from South America. Funded by Canada-Latin America Transfer Fund.

POSTDOCTORAL FELLOW SUPERVISION:

Aibin Zhan (2009-current): evolution of invasive species (Co-supervisor, M. Cristescu)
 Francisco Sylvester: (2007-2010): Hull-mediated species invasions
 Chad Harvey (2007-2009): Invasions and ecosystem topology
 Christophe Lejeunse (2007-2008): Genetics of invaders (Co-supervisor, M. Cristescu)
 Susan Gordon (2006-2007): DNA barcoding of invasive crustaceans
 David Kelly, GLIER postdoctoral fellow, (2003-2006), Genetic attributes of NIS
 Leif-Matthias Herborg (2004-2006), Modeling invasions
 Sarah Bailey (2005-2006), Canadian Aquatic Invasive Species Network development
 Nandakumar Kanavillil (2003 – 2004): resting stages and ballast water invasions
 Marjorie Wonham, NSERC postdoctoral fellow (2002- 2004); modeling invasions
 Ian Duggan (2002 – 2004); Great Lakes and Chesapeake Bay invasions
 Igor Grigorovich, Research Associate (1997- 2003): Ponto-Caspian invaders
 Tom Therriault, NSERC postdoctoral fellow (2001 – 2002); genetics of invaders
 Yves Couillard GLIER Postdoctoral Fellow (1993-1995): contaminants in zebra mussels

UNDERGRADUATE THESIS SUPERVISION (*=has or will publish study):

Odion Kalaci, 2010: Temporal dynamics of hull-fouling communities (NSERC supported)
 Eric Fifield, 2010: Regional spread of invasive species (NSERC supported)
 Rahel Tedla*, 2008-2009: Historical growth of invasion ecology
 James Valiant, 2008-2009: Detecting incipient invasions of invasive waterfleas

Samir Qureshi*, 2007-2008: How rare is rare? Finding newly established NIS.
Mike Rup*, 2007-2008: Tracking ballasting discharges of 'lakers' on the Great Lakes
Ashley Steinberg*, 2006-2007: Viability of desiccated diapausing eggs of zooplankton
Michael Jacobs*, 2005-2006: Dispersal of zooplankton on fishing lines
Derek Gray*, 2002-2003: Saltwater exposure: a cure to ballast-mediated invasions?
Nathalie Bergeron*, 2002-2003: The pet trade as vector of NIS to the Great Lakes
Corrine Rixon*, 2002-2003: Live human fish stores as vector of NIS to the Great Lakes
Rob Colautti*, 2000-2001: Ship traffic and Great Lakes invasion patterns
Carolyn Matkovich*, 1999-2000: Waterfowl as zooplankton dispersers?
John Sencaj, 1999-2000: Diet of lake sturgeon in Lake St. Clair
Tracy Mabee*, 1998-1999: Exotic amphipod competition in the Great Lakes
Joe Lozon*, 1996-1997: Does disturbance facilitate invasions?
Sandra Parker, 1995-1996: Spawning in zebra mussels
Rahim Kassan, 1994-1995: biogeography of *Dreissena* patches
Chris Lonnee*, 1993-1994: Zebra mussel predation on zooplankton