

# David G. Delaney, Ph.D.

Email: DGDelaney@gmail.com Phone: (857) 939-8893

## EDUCATION

---

- 2005-2009 **Doctor of Philosophy in Biology**  
McGill University, Department of Biology, Montreal, Quebec, Canada
- 2000-2004 **Bachelor of Science, Water Environments and Ecosystems – Biological Focus**  
McGill University, Faculty of Agricultural and Environmental Sciences, Montreal, Quebec, Canada

## SELECTED LIST OF PROFESSIONAL EXPERIENCE IN RESEARCH

---

- 2009-Present **Executive Director:** Citizen Science Institute: Marine Invasive Species Monitoring Organization, Quincy, Massachusetts, U.S.A.
- Recruited and trained over 6,000 volunteers to monitor over 60 sites in New England and New York and participate in my research
  - Produced an educational video featuring interviews with Drs. James E. Byers and James T. Carlton (<http://madere.biol.mcgill.ca/dgdelaney/>)
  - Conducted data analysis and wrote publications
  - Obtained and renewed collection permits
- 2010 **Researcher:** New England Aquarium, Boston, Massachusetts, U.S.A.
- Trained students to collect accurate data of native and invasive species for the New England Aquarium, Na.G.I.S.A., and Census of Marine Life databases
  - Supervised data collection to ensure the protocol was conducted properly
  - Coordinated and organized a conference for regional researchers and teens
- 2010 **Research Assistant:** Zavora Marine Laboratory, Zavora, Mozambique
- Conducted visual surveys of recreational scuba divers to establish the impact of divers on manta ray cleaning stations, benthic communities, and the health of coral reefs
  - Executed standardised coral reef monitoring protocols (Reef Check) to monitor long term impact on reef structure
  - Conducted underwater photo identification of manta rays and whale sharks
- 2008-2009 **Research Assistant:** The Tomlinson Project in University-Level Science Education, McGill University, Montreal, Quebec, Canada
- Conducted a study on the sustainability of student response systems (*i.e.*, clickers) in undergraduate science classes to determine if it is worth investing up to \$500,000 dollars, if the student should pay or if an alternative model is feasible
  - Created questionnaires to assess the students' satisfaction with clickers
  - Conducted in-class observations to identify effective ways to use clickers

CURRICULUM VITAE  
**David G. Delaney, Ph.D.**

- 2008-2009    **Research Assistant:** Teaching and Learning Services, McGill University, Montreal, Quebec, Canada
- Evaluate the perception and satisfaction of student response systems by conducting in-class surveys in courses across the Faculty of Science
  - Created a database for assessing the effectiveness of using clickers
- 2005-2009    **Doctoral Student:** McGill University, Montreal, Quebec, Canada
- Created and validated a large-scale citizen science monitoring network
  - Engaged thousands of people in seminars and hands-on learning opportunities
  - Took courses on biometry, geographical information systems, and statistics
- 2004         **Research Assistant:** McGill University, Montreal, Quebec, Canada
- Coded a spread model that manages sparse data on biological invasions
  - Prepared a successful grant proposal and assisted in writing a peer-reviewed publication
- 2004         **Field Assistant:** Charles Darwin Research Institute, Galapagos, Ecuador
- Conducted ethological studies on the feeding habits of different species of Darwin's finches as well as collected finches and other species by mist net, banded, measured them, and recorded morphological and bite force data
  - The data was published in Proceedings of Royal Society of London Series B
- 2003         **Consultant:** Sierra Club of Canada, Montreal, Quebec, Canada
- Gathered data from various sources and determined the best ways to overcome sparse data to create an accurate predictive model
  - Designed and implemented a statistical model to predict in real time, where and when it is safe to swim in the Lac St. Louis area of Quebec
- 2001         **Paid Intern:** Massachusetts Department of Environmental Protection's Ride Share Program. Boston, Massachusetts, U.S.A.
- Helped implement and expand a state environmental regulation
  - Maintained a database of all businesses in Massachusetts

**SELECTED LIST OF PROFESSIONAL EXPERIENCE IN EDUCATION**

---

- 2010-2011    **Long-Term Substitute Teacher:** Hingham High School, Hingham, Massachusetts, U.S.A.
- Taught four honors-level courses on general biology and ecology
  - Taught senior-level course on human anatomy and physiology
  - Taught previously designed lesson plans and ones I created
  - Created a productive and positive classroom environment for learning
- 2010         **Senior Educator:** New England Aquarium, Boston, Massachusetts, U.S.A.
- Planned, designed, and implemented a complete curriculum for four different themes of environmental and marine based education programs
  - Taught on a variety of topics in biology, ecology, and marine sciences
  - Taught science in the classroom and at sea (*e.g.*, 113' catamaran)

CURRICULUM VITAE  
**David G. Delaney, Ph.D.**

- 2005-2009    **Doctoral Student:** McGill University, Montreal, Quebec, Canada
- Conducted field and laboratory experiments to monitor, manage, and predict the spread and effects of invasive species
  - Published over 10 articles about my research
  - Created and validated a large-scale citizen science monitoring network
- 2002-2004    **Educator:** New England Aquarium, Boston, Massachusetts, U.S.A.
- Supervised and maintained group dynamics to optimize work success, efficiency, and enjoyment of the students, parents, and staff
  - Taught science in the classroom and at sea (*e.g.*, 90' schooner)

**TEACHING ASSISTANT FOR UNIVERSITY-LEVEL COURSES**

---

**Biology (Biology 115):** 2005, 2006, 2007  
**Cell and Molecular Biology (Biology 112):** 2008  
**Marine Biology (Biology 442):** 2007  
**Evolving Earth (Environment 202):** 2005, 2006  
**Limnology Field Course (Biology 432/632):** 2005, 2006, 2007, 2008

**PEER-REVIEWED PUBLICATIONS**

---

**Delaney, D.G.**, Griffen, B.D., and Leung, B. In Press. Does consumer injury modify invasion impact? *Biological Invasions*. DOI: 10.1007/s10530-011-9975-0.

White, P.J, **Delaney, D.G.**, Syncox, D., Akerberg, O.A., Alters, B. In press. Clicker Technology Implementation for Effective Long Term Sustainability. *EDUCAUSE Quarterly*.

**Delaney, D.G.** and Leung, B. 2010. An empirical probability model of detecting species at low densities. *Ecological Applications* 20: 1162-1172.

**Delaney, D.G.** 2009. Monitoring and managing the spread of marine introduced species: development of approaches and application to the European green crab (*Carcinus maenas*) and the Asian shore crab (*Hemigrapsus sanguineus*). Ph.D. dissertation, McGill University, Montreal, Quebec, Canada.

**Delaney, D.G.**, Sperling, C.D., Adams, C.S. and Leung, B. 2008. Marine invasive species: validation of citizen science and implications for national monitoring networks. *Biological Invasions* 10: 117-128.

Griffen, B.D. and **Delaney, D.G.** 2007. Species invasion shifts the importance of predator dependence. *Ecology* 88: 3012-3021.

Leung, B. and **Delaney, D.G.** 2006. Managing sparse data in biological invasions: a simulation study. *Ecological modeling* 198: 229-239.

CURRICULUM VITAE  
**David G. Delaney, Ph.D.**

**SUBMITTED PEER-REVIEWED PUBLICATIONS**

---

**Delaney, D.G.,** Edwards, P.K., Leung, B. Predicting regional spread of invasive species using oceanographic models - validation and identification of gaps. Submitted to Marine Biology.

**SELECTED LIST OF NON-PEER-REVIEWED PUBLICATIONS**

---

**Delaney, D.G.** 2010. The global threat of invasive species. Beyond Blue.

**Delaney, D.G.** 2009. Report on the European green crab, *Carcinus maenas*. Center for Agricultural Bioscience International Invasive Species Compendium.

**Delaney, D.G.** 2008. Verifying the validity of volunteer monitoring to increase its utility: An academic perspective. U.S. Environmental Protection Agency's The Volunteer Monitor.

**Delaney, D.G.** 2007. In the Spotlight: The Marine Invasive Species Monitoring Organization. The National Institute of Invasive Species Science Citizen Science Newsletter.

**Delaney, D.G.** 2006. Meet the scientists. National Sea Grant's Nab the Aquatic Invader Website.

**Delaney, D.G.** 2005. Asian shore crab spreads north. The Massachusetts Office of Coastal Zone Management Newsletter (C.Z. Mail).

**Delaney, D.G.** and Solecki, A. 2005. Citizen science as a solution to invasive species. Gulf Stream Newsletter: A publication of the Gulf of Maine Marine Educators' Association.

**SELECTED LIST OF INVITED ORAL PRESENTATIONS**

---

**Zavora Marine Laboratory Presentation Series.** 2010. Biology and conservation of sharks.

**The Northeast Aquatic Nuisance Species Panel on Citizens Monitoring for Marine Invasive Species: A Regional Approach to Covering the Coast.** 2006. Validation study of citizen science and implications for regional monitoring networks. Also, I was a panelist.

**New England Aquarium's Conservation Fundraising Night.** 2006. Keynote address.

**National Parks Service's Plight and Promise: A sharing of research perspectives.** 2006. Application of citizen science and G.I.S. technologies to the field of invasion biology.

**The New York Biology Teachers Association.** 2005. The role of teachers in rapid dissemination of research on current environmental problems and the possibilities for collaboration.

**Cornell University Extension Program of Suffolk County.** 2005. Citizen Science Initiative: Marine Invasive Species Monitoring Organization (C.S.I.: M.I.S.M.O.).

CURRICULUM VITAE  
**David G. Delaney, Ph.D.**

**SELECTED LIST OF ORAL PRESENTATIONS**

---

**United States Fish and Wildlife Service's National Chinese Mitten Crab Workshop.** 2010. Lessons from research on the European green crab and Asian shore crab for national monitoring

**16<sup>th</sup> International Conference on Aquatic Invasive Species.** 2009. Application of citizen science and search theory to optimally detect a species at low density.

**Canadian Society for Ecology and Evolution Annual Meeting.** 2008. False negatives: Exactly how reliable is presence-absence data? Also I chaired a session of oral presentations on the topics of theoretical and statistical ecology.

**Fifth International Conference on Marine Bioinvasions.** 2007. Are citizen scientists the solution to early detection?

**Canadian Conference for Fisheries Research and Society of Canadian Limnologists.** 2007. To detect or not to detect: Do ecologists properly interpret survey data?

**90<sup>th</sup> Ecological Society of America annual meeting.** 2005. Predicting discrete secondary spread of aquatic invasive species, which won the E.C. Pielou Award for the best oral presentation on statistical ecology. Also I presided over the contributed oral session on invasive species.

**AD HOC REVIEWER OR EXPERT OPINION FOR PUBLICATIONS**

---

Asian Carp in the Great Lakes Region. A summary report for Members of the U.S. Congress. Buck, E.H., Upton, H.F. and Stern, C.V. 2011. Congressional Research Service.

Risk assessment for the Chinese mitten crab (*Eriocheir sinensis*) and the European green crab (*Carcinus maenas*) in Canadian waters. 2010. Therriault, T.W., Herborg, L.M., Locke, A. and McKindsey, C.W. Fisheries and Oceans Canada.

Identifying significant range extensions of invasive marine pests – C.C.I.M.P.E. Range Decision Guidelines Project. Darbyshire, R. and Caley, P. 2009. Australian Government's Bureau of Rural Sciences.

Marine Pest Incursions – A tool to predict the cost of eradication based on expert assessments by Crombie, J., Knight, E. and Barry, S. 2007. Australian Government's Bureau of Rural Sciences.

I have reviewed articles for Biological Invasions (2) & Journal of Environmental Management (1)

**AWARDS**

---

- 2011 Hingham High School Teacher of the Week Award (February 14 - 20, 2011)
- 2009 G.R.E.A.T. / G.T.C. Travel Award (\$500)
- 2009 Alma Mater Student Travel Grant Award (\$750)
- 2008 Gulf of Maine Visionary Award
- 2007 University of Maine's Addison E. Verrill Award for Marine Biology (\$2,000)

CURRICULUM VITAE  
**David G. Delaney, Ph.D.**

- 2006 McGill Graduate Studies Fellowship Award (\$5,000)
- 2005 Co-P.I. on a grant from N.O.A.A.'s National Sea Grant (\$205,755)
- 2005 Ecological Society of America's E.C. Pielou Award (\$200)
- 2005 McGill Graduate Studies Fellowship Award (\$5,000)

**TEACHER AND COMMUNICATION TRAINING**

---

**Attended Learning to Teach: A Professional Development Workshop: 2008**  
**Attended Professor L. Cooper's Writing Science Articles Course (REDM610): 2008**  
**Attended Tomlinson Science Teaching Development Workshop: 2007**

**SELECTED LIST OF EXTRACURRICULAR ACTIVITIES**

---

- **Chairperson:** McGill University's Post-Graduate Student Society Constitutional Committee from 2007 to 2008
- **Volunteer educator:** Teaching about current research and environmental issues to local elementary and high school students from 2002-2007
- **President:** Biology Graduate Student Association from 2005-2006

**SELECTED LIST OF MEDIA COVERAGE**

---

**University Affairs.** 2010. Citizens sold on science by Tim Loughheed  
(<http://www.universityaffairs.ca/citizens-sold-on-science.aspx>)

**BioScience.** 2008. Jeffrey P. Cohn. Citizen science: Can volunteers do real research?  
(<http://www.bioone.org/doi/pdf/10.1641/B580303>)

**Boston Globe.** 2006. Drift cards to track tidal flow by Carolyn Johnson  
(<http://www.highbeam.com/doc/1P2-7960706.html> or  
[http://www.boston.com/news/local/articles/2006/06/29/adrift\\_at\\_sea\\_cards\\_track\\_tidal\\_flow/](http://www.boston.com/news/local/articles/2006/06/29/adrift_at_sea_cards_track_tidal_flow/))

**Boston Globe.** 2006. Marine water invaders on most wanted list by Beth Daley  
(<http://www.highbeam.com/doc/1P2-7960706.html> or  
[http://www.boston.com/news/local/articles/2006/01/09/marine\\_water\\_invaders\\_on\\_most\\_wanted\\_list](http://www.boston.com/news/local/articles/2006/01/09/marine_water_invaders_on_most_wanted_list))

**South Coast Today.** 2006. Students gather specimens in rain, but don't get crabby by Brian Fraga  
(<http://www.southcoasttoday.com/apps/pbcs.dll/article?AID=/20060511/NEWS/305119990&cid=sitesearch>)

**REFERENCES**

---

References are available upon request.