# David G. Delaney 

Email: DGDelaney@Gmail.com
Phone: (808) 726-6602 Skype username: DGDelaney1
Citizen of both Canada and the U.S.A.

## EDUCATION

2005-2009 Doctor of Philosophy, Biology
McGill University, Department of Biology, Downtown campus, Montreal, Quebec, Canada

2000-2004 Bachelor of Science, Water Environments and Ecosystems - Biological Focus
McGill University, Faculty of Agricultural and Environmental Sciences' School of Environment, MacDonald Farm West Island Campus, Montreal, Quebec, Canada

## SELECTED LIST OF PROFESSIONAL EXPERIENCE IN RESEARCH

Senior Biologist: Cramer Fish Sciences, Auburn, California, U.S.A.
Jan. 2015-pres

- Grant writing and obtaining new contracts for the company
- Leading the development of a salmonid life-cycle model
- Conducting data analysis on multiple projects involving fish biology, conservation, and resource management
- Reviewing past experimental designs and recommend improvements for future experimental designs

Fisheries Biologist: Cramer Fish Sciences, Auburn, California, U.S.A.
Jan. 2013-Jan. 2015

- Conducted data analysis on multiple projects involving fish biology, conservation, and resource management, including analysis for a $\$ 2,000,000$ study
- Developed an equation-based multistate model to estimate the survival, movement, and detection probabilities of fish for the Sacramento Delta
- Reviewed past experimental designs and recommend improvements for future experimental designs
- Project lead on a study conducted by consultants and governmental agencies
- Generated over $\$ 200,000$ in profit for the company

Research Fellow: Oceans Research, Mossel Bay, Western Cape, South Africa
May 2012-Jun. 2013

- Principal investigator on a multifaceted, multimillion dollar project
- Supervise multiple honors students
- Publish papers based on the datasets produced by the laboratory personnel

Director of Research: Oceans Research, Mossel Bay, Western Cape, South Africa
Nov. 2011-May 2012

- Simultaneously managed 16 research projects focusing on sharks and marine mammals
- Supervised the research organization during its most productive publishing year to date
- More than tripled the number of scientific permits the organization received
- Published papers in peer-reviewed scientific journals (e.g. Marine Biology, PLOS One)
- Principal investigator on multiple research projects and supervised the budgets of all research projects

Principal Investigator: Oceans Research, Mossel Bay, Western Cape, South Africa Apr.-Nov. 2011

- Conceived, designed, implemented, sustained, and analyzed the data for a mark-recapture study
- Conducted original research on various marine species with a focus on sharks and marine mammals
- Created and presented a 4-hour seminar and hands-on workshop on statistics and designing experiments. This seminar was given every month
- After three months, I was promoted to the Scientist in Residence position
- Wrote grants and obtained research funds from various funding bodies

David G. Delaney, Ph.D.<br>Email: DGDelaney@gmail.com<br>Phone: (808) 726-6602 Skype username: DGDelaney1

Executive Director: Invasive Tracers, Montreal, Quebec, Canada
Mar. 2004-Apr. 2011

- Recruited, trained, and supervised 7,000 volunteer "citizen scientists" to monitor over 60 sites in New England, New Jersey, and New York to participate in my research
- Gave 500 presentations to diverse audiences for training and fund raising, including the key note address for the New England Aquarium's Conservation Fundraising Night
- Co-produced an educational video featuring interviews with Drs. James E. Byers and James T. Carlton
- Conducted data analysis and wrote peer and non-peer reviewed publications Obtained and renewed collection and scientific research permits from 7 statelevel governmental conservation agencies and numerous state and federal parks

Researcher: New England Aquarium, Boston, Massachusetts, U.S.A.
Jun.-Oct. 2010

- Trained students to collect accurate data on the abundance of intertidal 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 executed properly
- Coordinated and organized a conference for researchers, volunteers, and the public

Research Assistant: Zavora Marine Laboratory, Zavora, Mozambique
Mar. 2010

- Conducted visual surveys of recreational scuba divers activities to establish their impact on the health of coral reefs, benthic communities, and manta rays' cleaning stations
- Executed standardized coral reef monitoring protocols (e.g. Reef Check) to monitor long-term impacts on reef structure and diversity
- Conducted underwater photo-identification of manta rays and whale sharks

Field Assistant: Oceans Research, Mossel Bay, Western Cape, South Africa
Feb. 2010

- Conducted photo identification, sighting rate, and mark-recapture methods to establish and monitor the population status and abundance of sharks and marine mammals
- Executed genetic and stable isotope sampling to establish genetic relationships of sharks
- Used acoustic telemetry equipment to track the movement of white sharks in Mossel Bay

Research Assistant: McGill University, Montreal, Quebec, Canada
Sep. 2008-Jun. 2009

- 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 $\$ 500,000$ on the new technology
- Created paper-based questionnaires to assess the students' satisfaction with clickers
- Conducted clicker-based surveys of students' perception and satisfaction of clickers by conducting in-class surveys in courses across the McGill University's Faculty of Science
- Co-authored a peer-reviewed publication based on this study

Doctoral Student: McGill University, Montreal, Quebec, Canada
Jan. 2005-Oct. 2009

- Published papers in peer-reviewed scientific journals (e.g. Biological Invasions, Ecology, Ecological Applications) and presented the results at scientific conferences (e.g. E.S.A)
- Co-principal investigator on a N.O.A.A. funded grant $(>\$ 200,000)$

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- Took courses on biometry, geographical information systems, and statistics
- Created and validated a large-scale citizen science monitoring network involved 1,000 volunteers that more than 50 sites along seven states (New Jersey to Maine)
- Conducted field experiments, surveys, recruitment studies and computer modelling

Research Assistant: McGill University, Montreal, Quebec, Canada
Sept.-Dec. 2004

- Coded a stochastic model that optimally used sparse data to forecast the spread of species
- Prepared a successful grant proposal for funding from N.O.A.A.
- Co-authored a peer-reviewed publication in Ecological Modeling


## Visiting Scientist: Charles Darwin Research Institute, Galapagos, Ecuador

Feb.-Mar. 2004

- Collected Darwin's finches by mist net then took beak measurements, bite force data, blood samples, banded, and released the individuals
- Conducted ethological studies on the feeding habits of Darwin's finches
- Banded, took blood samples, weights and beak measures of various species of birds including Darwin's finches
- The data was published in Proceedings of Royal Society of London Series B. Biological Sciences

Paid Intern: Massachusetts Department of Environmental Boston, Massachusetts, U.S.A. Jun.-Aug. 2001

- Helped implement and expand a state environmental regulation and Rideshare Program
- Maintained a Microsoft Access database of all businesses in Massachusetts


## SELECTED LIST OF PROFESSIONAL EXPERIENCE IN EDUCATION

Substitute Teacher: Hingham High School, Hingham, Massachusetts, U.S.A.
Dec. 2010-Apr. 2011

- 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 that I created
- Created a productive and positive classroom environment for learning
- Won the Hingham High School Teacher of the Week Award

Senior Educator: New England Aquarium, Boston, Massachusetts, U.S.A.

- Planned, designed, and implemented a complete curriculum for four different themes of an environmental and marine-based education program
- Taught on a variety of topics in biology, ecology, and marine sciences
- Supervised and maintained group dynamics to optimize work success, safety, and enjoyment of the students, parents, and staff

Doctoral Student: McGill University, Montreal, Quebec, Canada
Jan. 2005-Oct. 2009

- Created, trained, and sustained a 1,000 person volunteer-based monitoring network that documented the distribution of native and invasive species by in person training, creating training manuals, field guide, and on-line learning tools
- Each year, gave dozens of lectures and hands-on workshops to the scientific community, teachers, students, and the general public
- Each semester I was a teaching assistant for one or two university-level courses

Educator: New England Aquarium, Boston, Massachusetts, U.S.A.
Jun. 2002-Aug. 2004

- Conducted formal and informal education in the classroom, various field sites, and at sea
- Taught curriculum on various topics of environmental and marine sciences


## TEACHING ASSISTANT FOR UNIVERSITY-LEVEL COURSES

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


## PEER-REVIEWED PUBLICATIONS

Delaney, D.G., Bergman, P., Cavallo, B.J., and Melgo, J. 2014. Stipulation Study: Steelhead Movement and Survival in the South Delta with Adaptive Management of Old and Middle River Flows. The document was reviewed by representatives from the California Department of Water Resources, National Oceanic and Atmospheric Administration (N.O.A.A.) National Marine Fisheries Service, University of Washington, and United States (U.S.) Fish and Wildlife Service, and Bureau of Reclamation.

Delaney, D.G., Bergman, P., Cavallo, B.J., and Melgo, J. 2013. Phase II Data Analysis Plan for the Acoustic Telemetry Stipulation Study (for the Salmonid Mark-Recapture Study). The document was reviewed by representatives from the California Department of Water Resources, N.O.A.A. National Marine Fisheries Service, Bureau of Reclamation, U.S. Fish and Wildlife Services, and the Westlands Water District.

Delaney, D.G., Johnson, R.J., Bester, M.N., and Gennari, E. 2012. Accuracy of using acoustic telemetry data and visual identification of white sharks (Carcharodon carcharias) to estimate residency patterns. PLOS ONE 7(4): e34753. http://www.plosone.org/article/info\%3Adoi\%2F10.1371\%2Fjournal.pone. 0034753.

Delaney, D.G., Edwards, P.K., and Leung, B. 2012. Predicting regional spread of invasive species using oceanographic models - validation and identification of gaps. Marine Biology 159: 269-282.

Delaney, D.G., Griffen, B.D., and Leung, B. 2011. Does consumer injury modify invasion impact? Biological Invasions 12: 2935-2945.

White, P.J., Delaney, D.G., Syncox, D., Akerberg, O.A., and Alters, B. 2011. Clicker Technology Implementation for Effective Long Term Sustainability. EDUCAUSE Quarterly 34: 4.

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 Modelling 198: 229-239.

## SELECTED LIST OF NON-PEER-REVIEWED PUBLICATIONS

Bergman, P., Delaney, D.G., Merz, J.E., and Watry, C. 2014. A Pilot Mark-Recapture Study using Spot
Patterns of Oncorbyncbus mykiss in the Stanislaus River, California. Technical report for Bureau of Reclamation.
Delaney, D.G. 2012. Shark feeding dives - A shark expert's opinion on a controversial practice. About.com: the reference website for the New York Times Company.

Delaney, D.G. 2011. Is scuba diving with sharks dangerous? About.com: the reference website for the New York Times Company.

Delaney, D.G. 2011. Striving to save sharks in South Africa. Dedham Country Day Bulletin.
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. Wallingford, UK.

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

Delta Science Program Workshop on Interior Delta Flows and Related Stressors to inform the State Water Board's upcoming decisions regarding Delta interior flows objectives. 2014 Stipulation Study: Steelhead movement and OMR reverse flows.

Coleman National Fish Hatchery Adaptive Management Plan Meeting. 2014. A life-cycle model for partially anadromous rainbow trout in Battle Creek, CA. The three presentations were given to representatives from the Battle Creek Watershed Conservancy, California Department of Fish and Wildlife, N.O.A.A, Pacific Gas and Electric, U.S. Bureau of Reclamation, and U.S. Fish and Wildlife Services.

Inter-agency review of Phase II Data Analysis Plan for the Acoustic Telemetry Stipulation Study (for the Salmonid Mark-Recapture Study). 2013. The presentation was given to representatives from the California Department of Water Resources, N.O.A.A. National Marine Fisheries Service, Bureau of Reclamation, U.S. Fish and Wildlife Services, U.S. Geological Survey, and the Westlands Water District.

Bermuda Institute of Ocean Science's Science Friday Seminar Series. 2012. Monitoring and modeling the spread of marine invasive species and conservation of sharks and other sea life.

Mossel Bay Marine Laboratory Presentation Series. 2011. Biology and conservation of elasmobranch fish.
St. Lambert Elementary School in Montreal, Quebec, Canada. 2011. Biology and conservation of sharks.
Zavora Marine Laboratory Presentation Series. 2010. Biology and conservation of elasmobranch fishes.
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 for the roundtable discussion with three other experts in the field, which was held at the end of the event.

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.

Cornell University Extension Program of Suffolk County. 2005. Citizen Science Initiative: Marine Invasive Species Monitoring Organization.

## SELECTED LIST OF ORAL PRESENTATIONS

California-Nevada Chapter of the American Fisheries Society 48 th annual conference. 2014. Challenges of predicting the movement of juvenile steelhead in the Sacramento-San Joaquin Delta.
$8^{\text {th }}$ Biennial Bay-Delta Science Conference. 2014. The Importance of Identifying and Quantifying Fish Behaviors to Predict the Migration Rate of Juvenile Salmonids.

Mossel Bay Marine Laboratory Presentation Series. 2012. Global ocean conservation.
Mossel Bay Marine Laboratory Presentation Series. 2011. Marine issues facing South Africa.
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.
$\mathbf{1 6}^{\text {th }}$ 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 ${ }^{\text {th }}$ 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 of the Great of Lakes of North America.

## AD HOC REVIEWER OR EXPERT OPINION FOR PUBLICATIONS

- Editorial Board Member: The Journal of Marine Biology and Oceanography: 2012 - present
- Reviewer for the following scientific journals: Biological Invasions (2), Bulletin of the New Jersey Academy of Science, Ecology and Society, Integrative Zoology, Environmental Monitoring and Assessment, Journal of Environmental Management, Journal of Marine Biology and Oceanography, Journal of Experimental Marine Biology and Ecology, Marine Ecology Progress Series, PLOS ONE, and Oryx-The International Journal of Conservation
- Reviewer: The Connecticut Sea Grant College Program's omnibus funding request for 2012-2014
- Member: Committee chaired by South Africa's Department of Environmental Affairs that drafted the animal ethics and sampling protocols for the 2012 South African Collaborative Shark Study Project
- Reviewer: Chapter 7 of the textbook "Biological Oceanography of the Baltic Sea", which was written by S. Olenin, S. Gollasch, M. Lehtiniemi, M. Sapota and A. Zaiko on the topic of Biological Invasions and published by Springer
- Reviewer: 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
- Reviewer: 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
- Reviewer: 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
- Expert Opinion: 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


## 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 AWARDS

- 2012 Principal Investigator (P.I.) on a multifaceted, multimillion dollar project $(>\$ 2,000,000)$
- 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 $(\$ 2,000)$
- 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 $(\$ 5,000)$


## SELECTED LIST OF EXTRACURRICULAR ACTIVITIES

- Chairperson: Scientific Advisory Council of Oceans Research from 2011-2012
- Chairperson: McGill University's Post-Graduate Student Society Constitutional Committee from 2007-2008
- Panel Member for Northeast Aquatic Nuisance Species (NEANS) Panel: I represented McGill University at regional meetings from 2006-2008
- 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
- Member: McGill University's Department of Biology Graduate Student Association from 2004 2005


## SELECTED LIST OF MEDIA COVERAGE

Vet Street. 2014. King of the Reef? Not So Fast, Lionfish by Kim Campbell Thornton. Available at: http://www.vetstreet.com/our-pet-experts/king-of-the-reef-not-so-fast-lionfish
Gainsville Sun Newspaper. 2014. University of Florida report: Shark attacks down, fatalities up by Jeff Schweers. Available at http://www.gainesville.com/article/20140217/ARTICLES/140219590
Shark Wranglers. 2012. "Shark Wranglers" is a television series that was broadcasted on the History Channel and documented the expedition and disseminated the information of the South African Collaborative Shark Study for which I was a project leader
Suid Kaap FM. 2012. Invited guest to talk about environmental issues on a radio station in Mossel Bay, South Africa
ResearchSA. 2012. Ocearch - Sharkmen permits reissued after no link found between research and fatal shark attack
Mail and Guardian. 2012. Team defends shark research by Fiona MacLeod
Cape Times. 2012. It wasn't our fault, say shark scientists. Front page story summarizing our press release
Moneyweb Daily News. 2012. Department of Environmental Affairs suspends the Ocearch / Sharkmen research permit - Following the fatal attack of a body-boarder at Kogel Bay
The Scenic South. 2012. Great white sharks in False Bay tagged for research
Shark Year Magazine. 2012. DEA press release: New permit for shark research project issued
St. Francis Chronicle. 2012. R15 million shark research project and film in False Bay
Newsletter of Massachusetts Association of Science Teachers. 2011. Monitoring invasive crab dpecies in Boston Harbor: Boston Public School students and citizen science by Tom Hocker
The Guardian. 2011. Great white shark jumps from sea into research boat by Xan Rice
The Atlantic. 2011. What to do when a great white shark jumps in your boat by Aleis Madrigal
Fox News. 2011. Great white shark jumps into research boat in South Africa
CNN. 2011. Great white jumps on to research boat by Brad Lendon
University Affairs. 2010. Citizens sold on science by Tim Lougheed
BioScience. 2008. Citizen science: Can volunteers do real research by Jeffrey P. Cohn
Boston Globe. 2006. Drift cards to track tidal flow by Carolyn Johnson
Boston Globe. 2006. Marine water invaders on most wanted list by Beth Dale
South Coast Today. 2006. Highlighting volunteer monitoring network by Brian Fraga
Patriot Ledger. 2005. David Delaney is the pied piper of science by P. Amy MacKinnon
BBC News. 2004. Galapagos tortoises held hostage - More than 30 scientists and several giant tortoises are being held hostage by striking fishermen in the Galapagos Islands. Available at
http://news.bbc.co.uk/2/hi/americas/3491658.stm

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## SELECTED LIST OF CERTIFICATIONS AND CAPABILITIES

- Y.M.C.A certified open water scuba diver: Boston, Massachusetts in 1994
- P.A.D.I. certified advanced open water diver: Puerto Ayora, Galapagos in 2004
- P.A.D.I. certified dry suit scuba diver: Monterey, California in 2008
- Valid driver's license
- Pleasure craft operator certification
- Pre-sea course certified and medical clearance by South African Maritime Safety Authority
- Experience with extended time working at sea
- Advanced statistical analysis (e.g. generalized linear model, multivariate analysis)
- Proficient with various statistical software (e.g. Minitab, R commander, SPSS, SYSTAT)
- Proficiency with Microsoft Office


## SELECTED LIST OF REFERENCES

## David Syncox

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Education Programs Manager
New England Aquarium
Central Wharf, Boston, MA 02110
Phone: (617) 973-0253
Email: hdeschenes@neaq.org

## Marc Albert

Stewardship Program Manager
Boston Harbor Islands National Park Area, and
Salem Maritime National Historic Site
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