

# Dr. Sarah E Gutowsky

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## EDUCATION

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PhD (Biology) Dalhousie University	<i>Winter 2012-Spring 2016</i>
BSc (Honour's, Biology) University of Guelph, ON	<i>Fall 2005-Winter 2009</i>
James Cook University 6-month Exchange, Australia	<i>Winter 2008</i>

## PEER-REVIEWED SCIENTIFIC WRITING

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**Gutowsky, S.E.** 2017. A Conceptual Framework For The Drivers Of Albatross Movement. *Marine Ornithology*. 45: 23-38.

**Gutowsky, S.E.**, Leonard, M.L., Conners, M., Shaffer, S.A., and Jonsen, I.D. 2015. Individual-level variation and higher-level interpretations of space-use in wide-ranging species: An albatross case study of sampling effects. *Frontiers in Marine Science*. 2: 93.

**Gutowsky, S.E.**, Gutowsky, L.F.G., Jonsen, I.D., Leonard, M.L., Naughton, M.B., Romano, M.D., and Shaffer, S.A. 2014. Daily activity budgets reveal a quasi-flightless stage during non-breeding in Hawaiian Albatrosses. *Movement Ecology*. 2: 23.

**Gutowsky, S.E.**, Y. Tremblay, M.A. Kappes, E.N. Flint, J. Klavitter, L. Laniawe, B. Christenson, D.P. Costa, S. Shaffer. 2014. Divergent post-breeding distribution and habitat associations of fledgling and adult Black-footed Albatrosses in the North Pacific. 156: 60-72.

**Gutowsky, S.E.**, M.H. Janssen, D.R. Norris. 2010. The preformative molt of Marbled Murrelets. *Northwestern Naturalist*. 91: 333-336.

**Gutowsky, S.E.**, M.H. Janssen, P. Arcese, T.K. Kyser, D. Ethier, M.B. Wunder, D.F. Bertram, L. McFarlane-Tranquilla, C. Loughheed, and D.R. Norris. 2009. Concurrent declines in nestling diet quality and reproductive success of a threatened seabird over 150 years. *Endangered Species Research*. 9: 247-254.

## SCIENTIFIC CONFERENCES & MEETINGS

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**Gutowsky, S.E.**, Conners, M., Jonsen, I.D., Leonard, M.L., Shaffer, S.A. Individual-level variation and higher-level interpretations of space use: An albatross case study of sampling effects. World Seabird Conference, Cape Town, South Africa. Poster presentation, *October 2015*.

**Gutowsky, S.E.**, Gutowsky, L.F.G., Jonsen, I.D., Leonard, M.L., and Shaffer, S.A. New approaches for investigating changing activity budgets at a daily time-step for seabirds. Pacific Seabird Group Meeting, San Jose California. Oral presentation, *February 2015*.

**Gutowsky, S.E.**, Gutowsky, L.F.G., Jonsen, I.D., Leonard, M.L., Naughton, M.B., Romano, M.D., and Shaffer, S.A. 2014. Daily activity budgets reveal a quasi-flightless stage during non-breeding in Hawaiian Albatrosses. American Ornithologists' Union conference, Estes Park, CO. Oral presentation, *September 2014*.

**Gutowsky, S.E.**, Y. Tremblay, M.A. Kappes, E.N. Flint, J. Klavitter, L. Laniawe, B. Christenson, D.P. Costa, S. Shaffer. Ageism at sea? Divergent distributions of adult and fledging Black-footed Albatrosses. Dalhousie Patrick Lett Research Symposium, Halifax, NS. Oral presentation, *April 2014*.

**Gutowsky, S.E.**, Kress, S., and Shannon, P. Censusing puffins in rock habitat – A new model from Seal Island NWR. Gulf of Maine Seabird Working Group Annual Meeting, Maine. Oral presentation, *August 2011*.

**Gutowsky, S.E.**, Arcese, P., and Norris, D.R. Concurrent declines in nestling diet quality and reproductive success of a threatened seabird over 150 years. University of British Columbia Rising Stars of Research National undergraduate poster competition, Vancouver, BC. Poster presentation, *August 2009*.

**Gutowsky, S.E.**, Arcese, P., and Norris, D.R. Estimating historic productivity and nestling diet of Marbled Murrelets using age ratios and stable isotopes. Canadian Marbled Murrelet Recovery Team Annual Meeting, Victoria, BC. Oral presentation, *February 2008*.

## INVITED LECTURES

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### **Nova Scotia Bird Society**

*2014, 2016*

- Delivered 1 hour presentations to meetings of members of the Nova Scotia Bird Society on research experiences with birds, with subject matter catered to interest the general public

### **Dalhousie Biology courses**

*Fall & Winter 2012-2015*

- Delivered 1.5 hour presentations to undergraduate students on personal research with subject matter catered to touch on relevant course concepts to Behavioural Ecology (BIOL 3062) and Communities & Ecosystems (BIOL 3061)

## CONSULTING

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**Independent contractor, World Wildlife Fund Canada** *2016*

- Developed species accounts for 76 seabird species that occur in Canada's three Oceans for inclusion in an electronic multi-taxa identification tool (an application for cell phones or tablets) intended for use in identifying and reporting of wildlife interactions and unintentional capture in fisheries operations
- Each account includes a physical description of the species in all plumages (by season, sex and age), digital photographs portraying physical traits, relevant linear measurements, range and habitat description, current COSEWIC status, and suspected or known interactions with specific fisheries
- Created a key using a combination of seabird traits to narrow down identification options

**Independent contractor, Avian Surveys for Development & Conservation** *2015-present*

- Conduct on-site pre-construction and post-construction avian surveys for avian community composition, breeding activity, mortality, and habitat characteristics
- Familiarity with standardized surveying techniques and comprehensive report writing

**Independent contractor, Environment Canada** *2013 & present*

- Authored species accounts for 31 non-breeding seabird and shorebird species for Environment Canada's Status of Birds in Canada website ([www.ec.gc.ca/soc-sbc/](http://www.ec.gc.ca/soc-sbc/))
- Each account includes an assessment of current population status based on all available monitoring data, the reliability of population status, changes in population status over the past 40 years, and a summary of the species' current designations, primary conservation and management concerns, and conservation strategies
- Presently conducting non-breeding season distribution and habitat modelling for Harlequin Duck and Purple Sandpiper from aerial survey data in Maritime Canada

## FIELD RESEARCH

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**Sub-Antarctic Seabird & Marine Mammal Field Research Team** *Winter 2011/2012*

- Deployed and recovered various biologging devices on Black-browed and Wandering Albatrosses in the sub-Antarctic Kerguelen Archipelago with the French Polar Institute (IPEV)
- Monitored nest success and chick growth, captured, banded, deployed/retrieved biologging devices, blood and feather sampled for dietary analyses
- Assisted with capture and handling of King Penguins and Antarctic Skuas, night mist-net capture of various petrel species, capture and device deployment/retrieval on Antarctic Fur and Elephant Seals

**East Coast Seabird Colony Island Supervisor***Summer 2011*

- Monitored large breeding colony of Atlantic Puffins, Razorbills, Common and Arctic Terns, Black Guillemots and Common Eiders on Seal Island National Wildlife Refuge, Maine, with Project Puffin, National Audubon Society
- Trained and supervised a crew of 10 interns and volunteers living and working on a small, isolated island for 3 months
- Captured and banded adult and hatchling terns, puffins and guillemots, conducted diet studies and band reading for all species from blinds
- Deployed/retrieved GLS devices on puffins
- Maintained live-streaming Internet “puffin cam” equipment
- Performed predator control including gull egg and adult culling

**Northwest Hawaiian Islands, Midway Atoll National Wildlife Refuge Volunteer***Winter 2010*

- Worked with US Fish & Wildlife Service on long-term biological monitoring
- Banding and monitoring survivorship and reproductive success of Laysan and Black-footed albatross and Red-tailed Tropicbirds, color-band resights for critically endangered translocated Laysan Duck, remote camera monitoring of nesting Short-tailed Albatross
- Habitat restoration (invasive plant removal and native species propagation and out-planting) and marine debris beach plot removal and monitoring

**Northern Ontario Hilliardton Marsh Northern Saw-whet Owl Migration Monitoring***Fall 2010*

- Captured c. 150 migrating Northern Saw-whet Owls using mist-nets and play-back in New Liskeard, Ontario over 8 days
- Measured, aged and banded adult and hatch-year owls

**Arctic Common Eider and Herring Gull Field Research Technician***Summer 2010*

- Monitored breeding colony of 3000+ Common Eiders and 80+ Herring Gulls on East Bay Island, Nunavut, with Environment Canada
- Conducted long hours of observations from blinds in order to identify banded individuals and determine eider and gull breeding success
- Captured and banded adults and juveniles of both species with metal and coloured alphanumeric bands, took choanal/cloacal swabs for Avian Influenza and Cholera, deployed GLS on adult gulls, bled ducklings and nasal-tagged eider hens
- Worked under isolated conditions on small (400x800m) island without electricity or running water and limited fresh food for 3 months

**Eastern Ontario Gray Jay Field Research Technician***Winter 2010*

- Monitored 22 territories of Gray Jay pairs across Algonquin Provincial Park, Ontario with the Univ. of Guelph and Algonquin Wildlife Research Station
- Mist-netted, bled, and banded adults and nestlings
- Nest-finding in spruce bog habitat in winter/spring conditions, full days of snowshoeing, canoeing, snowmobiling, and ATVing

**S Ontario Tree Swallow Field Research Technician***Spring 2009*

- Monitored breeding population of Tree Swallows in Long Point, Ontario, with the University of Guelph and Long Point Bird Observatory
- Captured, measured, and banded approx. 200 adults and 400 nestlings

**Southern Ontario Long Point Bird Observatory Migration Monitoring***Spring 2009*

- Volunteered during spring migration at one of the most productive songbird banding stations in North America
- Mist-net extraction, species identification, ageing and sexing of a wide variety of species, from warblers and woodpeckers to shorebirds and gulls

**Northeast Australia Herpetological Field Assistant***Winter 2008*

- Researched Chytridiomycosis pathogen in Waterfall frogs and Green-eyed tree frogs in the Wet Tropics region of Queensland, Australia
- Captured, PIT-tagged and swabbed frogs for pathogens
- Physically demanding night hikes to and from research locations and challenging waterfall terrain capture sites

**West Coast Marbled Murrelet Field Research Technician***Summer 2007 & 2008*

- At-sea capture of threatened adult and juvenile Marbled Murrelets in Desolation Sound, British Columbia with the University of Guelph
- Drove zodiac, captured, bled, banded and measured approx. 300 murrelets at night under challenging conditions
- Sampled and identified forage fish/plankton with beach-seine/plankton-tows
- Conducted evening at-sea transect surveys of adult fish-holding behaviour in order to determine nestling diet

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**EXPEDITION GUIDING**

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**Ornithologist, Naturalist & Expedition Guide***2012-present*

- Working as an 'Adventure Specialist' with Adventure Canada, Fathom Expeditions, Heritage Expeditions, Eagle Eye Tours, Quark Expeditions, travel for periods of 10-60 days aboard small expedition vessels (50-200 passenger capacity) to remote destinations including the Northwest Passage of the Canadian Arctic, Baffin Island, Greenland, Labrador, Newfoundland, the Falkland Islands, South Georgia and the Antarctic Peninsula, and the Russian Arctic
- Responsibilities include both interpretation (provide running commentary on natural history, primarily on birds, during shore landings and on-deck; present lectures on-board; maintain species sightings lists) and expedition duties (drive zodiacs; scout landings; lead hikes, carry firearms and perimeter watch for bear safety during shore excursions; carry first aid kit)

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**TEACHING**

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**Instructor, Biologging in Ecology (MARI/BIOL4323)***Winter 2014, 2015, 2016, Fall 2016*

- Developed and deliver a fourth-year marine biology course touching on all aspects of biologging science (using animal-attached electronics to study free-ranging animals) including the history and future of tagging technologies, study design, bias, ethics and data analysis
- Continuously direct all course content and exercises back to the overarching intention of the course: gaining universally-applicable practical skills in science (i.e. developing novel ideas, proposal writing and public speaking)
- Select and supervise one Teaching Assistant

**Instructor, Ornithology (BIOL3622)***Spring 2014, 2016, 2017*

- Deliver a well-established spring field course over an intensive 2-week duration
- Spend 8 days 'in the field' at a semi-remote research station camping with 15 students, taking advantage of every opportunity (from dawn chorus surveys to owling under darkness) to teach bird identification skills (ID by both sight and sound) and study design
- Guide students in designing and implementing field projects, grade final research reports
- Select and supervise two Teaching Assistants

**Instructor, Dalhousie Integrated Science Program (DISP, SCIE1505)***Summer 2015, Fall 2016*

- Delivered Ecology content for Biology section of DISP through traditional lecture format
- Organized and facilitated ecology field trip logistics and team activities for 75 first-year undergraduate science students, focused on dune succession, inter-tidal communities and anthropogenic impacts
- Developed materials for online testing of concepts for first-year Biology with quizzes
- Produced a step-by-step guide to developing and posting quizzes for future instructors

**Undergraduate Honour's Student Advisor***Spring 2012-2013*

- In collaboration with my graduate advisor, supervised an honour's student working with a sub-set of my PhD albatross biologging movement data
- Provided feedback on proposal and report writing, encouraged time management
- Guided methodological approaches and remained available for advice at all times

**Demonstrator, Marine Life of Nova Scotia (BIOL2605)***Summer 2012, 2013 & 2014*

- Assisted in delivering introductory course on the scientific method and practical field skills to second-year undergraduate non-science majors
- Logistical planning and facilitation of four-day field trip to a research station

**Demonstrator, Field Methods in Animal Behaviour (BIOL3630)***Spring 2012 & 2013*

- Guided students in designing and implementing field projects
- Graded all daily assignments and assisted on single-day field trips

**Demonstrator, GIS in Ecology (BIOL3633)***Summer 2012*

- Logistical planning and facilitation of five-day field trip to a research station
- Provided guidance on the ecological component of field projects

**Teaching Assistant, Communities & Ecosystems (BIOL3061)***Fall 2012 & 2013*

- Graded three major assignments, delivering feedback following each to ensure students had the best chance of improving performance on subsequent submission
- Provided recommendations to the instructor for future modifications of exercises to better suit students' needs
- Presented an invited guest lecture each year

**Teaching Assistant, Behavioural Ecology (BIOL3062)***Winter 2012*

- Instructed a bi-weekly tutorial, facilitated discussions and exercises
- Graded long-form essays for the major course deliverable

## EXTRA-CURRICULAR

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**Board Member, Harrison Lewis Coastal Discovery Centre** *2015-present*

- Participate on the Board of Directors for the Harrison Lewis Centre on the South Shore of Nova Scotia
- Our goal is to promote understanding and appreciation of rural and natural environments through public workshops and seminars, and through academic field courses and research collaborations

**Vice President, Dalhousie University, Biology Organization of Graduate Students** *2012/2013*

- Represented Dalhousie Biology graduate students on 3 university committees
- Prepared the "Graduate Student Survival Guide" for incoming students
- Website design and management

## SCHOLARSHIPS & AWARDS

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<b>Student Travel Award, World Seabird Conference</b> \$2,400	<i>Fall 2015</i>
<b>Fred Cooke Award, Society of Canadian Ornithologists</b> \$1,000	<i>Spring 2015</i>
<b>Student Travel Award, Pacific Seabird Group</b> \$900	<i>Winter 2015</i>
<b>NSERC Canada Graduate Scholarship (PhD Level)</b> \$105,000	<i>Spring 2013-present</i>
<b>Student Travel Award, American Ornithologists' Union</b> \$800	<i>Fall 2014</i>
<b>Mewald-King Award, Cooper Ornithological Society</b> \$1,000	<i>Spring 2013</i>
<b>NSERC Canada Graduate Scholarship (MSc Level)</b> \$17,500	<i>Fall 2011</i>
<b>Ontario Graduate Scholarship</b> \$15,000	<i>Fall 2011 (declined)</i>
<b>Simon Fraser University Graduate Scholarship</b> \$30,000	<i>Fall 2011 (declined)</i>
<b>Rising Stars of Research Most Outstanding Poster</b> \$500	<i>Summer 2009</i>
<b>NSERC Undergraduate Research Award</b> \$5625	<i>Summer 2007 &amp; 2009</i>
<b>R. Douglas and Kathleen Kennedy Scholarship</b> \$1000	<i>Winter 2009</i>
<b>OAC '54 International Study Scholarship</b> \$1450	<i>Winter 2008</i>
<b>OAC '55 Access Bursary</b> \$500	<i>Winter 2007</i>
<b>University of Guelph Entrance Scholarship</b> \$1000	<i>Winter 2006</i>
<b>Lorne Argent Memorial Award</b> \$300	<i>Fall 2005</i>

## CERTIFICATIONS

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<b>Seabird Observer Training – Canadian Wildlife Service Eastern Canada Seabirds At Sea Survey Protocols for Pelagic Seabird Surveys From Moving Platforms</b>	<i>October 2015</i>
<b>Crowd management, passenger safety and safety training for personnel providing direct services to passengers in passenger spaces</b>	<i>July 2015</i>
<b>International Association of Antarctic Tour Operators (IAATO) Expedition Guide Assessment for Peninsula &amp; South Georgia</b>	<i>October 2016</i>
<b>Wilderness Advanced First Aid Training</b>	<i>April 2010, recertified Nov 2014</i>
<b>Pleasure Craft Operator's License</b>	<i>April 2012</i>
<b>Canadian Firearms Possession &amp; Acquisition License</b>	<i>April 2012</i>
<b>Canadian Firearms Safety Training</b>	<i>April 2010</i>