SACHA O'REGAN

1-604-788-7271
sacha@sachaoregan.ca

EDUCATION

2010–13 MSc Biological Sciences, Simon Fraser University, Burnaby, Canada
Thesis title: Amphibians under stress: life histories, density dependence, and differences in vulnerability

2006–10 BSc Honours Biology with Distinction, Western University, London, Canada
Thesis title: Assessing the validity of quantitative nuclear magnetic resonance (QNMR) spectroscopy as a technique for determining body composition of arthropods

SKILLS

Writing: Extensive writing experience — seven peer-reviewed publications, policy and regulation advice documents, environmental impact assessments, technical data reports, permit applications, funding proposals, MSc thesis, book chapter

Data analysis: Statistical programming and data visualization with R (ggplot, tidyverse, generalized linear models, mixed effects models, R Markdown); geospatial data management in ArcMap

Leadership: Coordinating multi-disciplinary teams to meet technical report deadlines, supervising field crews, managing budgets, teaching experience

Field: Fish habitat assessment and fish surveys (stream, marine ROV, intertidal), marine mammal surveys, terrestrial wildlife, amphibian surveys and mark-recapture techniques, vegetation surveys, water quality sampling

Additional Assets: Registered Professional Biologist with the College of Applied Biology; trained in wetland restoration by Tom Biebighauser through the BCWF Wetlands Institute; experienced in working with First Nations, academics, and regulatory agencies; experienced in delivering presentations; fluently bilingual

EMPLOYMENT EXPERIENCE

MC WRIGHT AND ASSOCIATES, NANAIMO May 2017–Present

Senior Biologist

Applying provincial and federal legislation and policies relating to forestry, wildlife, species or ecosystems at risk, marine and freshwater fisheries, and water quality. Providing regulatory, policy, and scientific advice to government agencies, First Nations, and private industry. Leading environmental assessments and permit applications for forestry, coastal development, and hydro-electric projects. Developing habitat offsetting and monitoring plans. Developing stream, wetland, and estuary habitat restoration prescriptions.

- Lead author, with collaborators at DFO (Marine Spatial Ecology and Analysis Section), of a text-analysis study of 650 marine protected area (MPA) management plans across the globe designed to investigate the degree of incorporation of climate change adaptation measures into MPA management. Manuscript submitted to a peer-reviewed journal.
- Successfully wrote grant proposal for $82,371 in year-one funding for a two-year $281,000 Nitinat River restoration project through the Pacific Salmon Commission Southern Fund (funded).
- Prepared a science and management advice document for Ditidaht First Nation in support of the Nation's Stage Five treaty negotiation to help direct co-management of forestry resources in the Nitinat River watershed by the Ditidaht, BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development (MFLNRORD), and Parks Canada. Assessed the condition of wildlife and fish habitats

within the Nitinat River watershed, identified data gaps to be addressed with future field investigations, recommended restoration work and improvements to forestry practices.
- Authored a report for shíshálh Nation that investigated existing marine spatial planning frameworks and coastal management legislation and strategies within Canada as well as the Pacific Northwest of the United States and made recommendations to inform shíshálh Nation's marine spatial planning process.
- Led an in-depth literature review and field assessment of the impacts of boating, docks, and dock-associated infrastructure on wildlife, fish, and fish habitat for MFLNRORD. Detailed regulation and management recommendations to MFLNRORD that formed the basis of the Pender Harbour Dock Management Plan, a policy document under the *Land Act*.
- Authored a Nanaimo River watershed habitat status assessment for DFO to inform a DFO recovery potential assessment for the Nanaimo River spring run Chinook Salmon (designated by COSEWIC as endangered). Directed spatial analyses of riparian and total land cover alterations and forestry road development. Developed recommendations for management practices. With DFO, co-lead technical working group meetings and a 2-day information gathering meeting with Snuneymuxw First Nation, municipal planners, and stakeholders to discuss the draft report findings and gather further information.
- Authored DFO Wild Salmon Policy watershed habitat status assessments for the Kennedy, Artlish, Cheewaht, and Nitinat River watersheds.
- Authored Construction and Operational Environmental Management Plans to manage impacts to vegetation, amphibian, Marbled Murrelet, and ungulates from a run-of-river project.
- Authored six *Fisheries Act* requests for review for direct-to-barge and traditional log-handling facilities for BC Timber Sales and private foresters.
- Other responsibilities: data analysis in R; geospatial data mapping in ArcMap; fieldwork including amphibian, vegetation, salmon spawning, fish habitat, intertidal, eelgrass, and subtidal ROV surveys; construction monitoring.

STANTEC, BURNABY Nov 2013–May 2017
Environmental Scientist
- Co-authored two LNG project environmental impact assessments and two *Fisheries Act* Authorization Applications, and first author of six technical data reports (on topics of marine ecosystems and fish, sediment and water quality, freshwater fish).
- Co-authored a novel hydrodynamic modelling study to investigate the movement patterns of larval eulachon from the Nass and Skeena Rivers.
- Responded to Information Requests on three large and contentious projects from regulatory agencies, First Nations, and the public as part of environmental assessment applications.
- Other responsibilities: data analysis in R; fieldwork including pond-breeding amphibian, breeding bird, nocturnal raptor call-playback surveys, wildlife feature, intertidal, eelgrass, and subtidal ROV surveys in coastal BC habitats, and marine mammal surveys in both BC and the Saint Lawrence.

HAKAI NETWORK FOR COASTAL PEOPLE, ECOSYSTEMS AND MANAGEMENT June 2013–Nov 2013
Independent contractor
- Designed, conducted, and published an interview-based study assessing fishermen's perspectives on local trends and management efficacy in BC's commercial sea cucumber, urchin, and geoduck fisheries. Analyzed and made recommendations for the revision of fishery management regulation and policy based on the management issues identified by fishermen, including issues related to inequity in the licensing system and resource rights framework, DFO consultation process, and harvest strategies (O'Regan 2015, below).

BC MINISTRY OF FORESTS, LANDS AND NATURAL RESOURCE OPERATIONS March 2013
Independent contractor

- Authored 128-page report as second author on an eight-scientist team to evaluate the impact of the Central Coast forest management practices, BC's Ecosystem-based Management Land Use Objectives (EBM LUOs), and *Forest and Range Practices Act* on forest functioning, biodiversity, amphibians, stream channel morphology, and sediment supply. Made recommendations for the design, implementation, and data analysis of an experimental watershed program. Made recommendations to MFLNRO for the revision of the BC EBM LUOs based on a synthesis of the last decade of primary and grey literature (Hocking et al. 2013, below).

SIMON FRASER UNIVERSITY Sept 2010–Jan 2013
MSc Research

- Designed and conducted a large-scale outdoor study investigating the response of three BC frog species (Great Basin spadefoot, Northern red-legged frog, Pacific treefrog) to climate warming and changes in pool permanency (O'Regan et al. 2014, below).
- Developed a framework to identify the risk of amphibian populations to decline based on relationships between life-history traits, density-dependent bottlenecks, and stressor occurrence.

SIMON FRASER UNIVERSITY May 2010–Aug 2010
NSERC USRA Researcher

- Conducted a literature review to characterize the state of knowledge on amphibian density-dependence.
- Assisted colleagues at the UBC Experimental Pond Facility with a study examining the impacts of warming and nutrient additions on aquatic food web structure and function.

UNIVERSITY OF CALGARY May 2009–Aug 2009
NSERC USRA Undergraduate Researcher

- Conducted an experiment examining the feeding preferences of predacious diving beetle larvae.
- Assisted with investigating the effects of cattle grazing on temporary wetland ecology.

OPERATION WALLACEA, INDONESIA June, July 2008
Research Assistant

- Assisted with harp trapping and mist netting bats, tarsier habitat assessments, amphibian surveys, coral reef monitoring, marine mammal surveys, intertidal transects.

SELECT PUBLICATIONS AND REPORTS

O'Regan, S.M., M. Smith, C. Dexter, and M.C. Wright. 2018. Impacts of Docks in Pender Harbour: Phase 2 Assessment. Prepared by M.C. Wright and Associates Ltd. for the Ministry of Forests, Lands, and Natural Resource Operations and Rural Development.
https://arfd.gov.bc.ca/ApplicationPosting/viewpost.jsp?PostID=43285

O'Regan, S.M. 2015. Harvesters' perspectives on the management of British Columbia's giant red sea cucumber fishery. *Marine Policy*. 51: 103–110. http://bit.ly/sea-cucumbers

O'Regan, S.M., W.J. Palen, and S.C. Anderson. 2014. Climate warming mediates negative impacts of rapid pond drying for three amphibian species. *Ecology*. 95: 845–855. (*Recommended by Faculty of 1000 as being of special significance in its field) http://bit.ly/amphib-climate

Hocking, M.D., **S.M. O'Regan**, R.W. Collings, J. Benner, H. Munro, K. Squires, N. Swain, and K. Lertzman. 2013. Ecosystem-based management in the Great Bear Rainforest: A knowledge summary for priority ecological questions and experimental watersheds design. Prepared for British Columbia Ministry of Forests, Lands, and Natural Resources Operations. http://bit.ly/ebm-report

Phillis, C.C.*, **S.M. O'Regan***, S.J. Green*, J.E.B. Bruce*, S.C. Anderson, J. Linton, Earth2Ocean Research Derby, and B. Favaro. 2013. Multiple pathways to conservation success. *Conservation Letters.* 6: 98–106. (*Authors contributed equally; listed in reverse alphabetical order) http://bit.ly/consv-pathways

Complete list available at http://sachaoregan.ca/publications

SELECT AWARDS

2012 Graduate Fellowship, Simon Fraser University

2011 Graduate Fellowship, Simon Fraser University

2010 NSERC Alexander Graham Bell Canada Graduate Scholarship

2010 Pacific Century Graduate Scholarship, Simon Fraser University