

SUMMARY OF QUALIFICATIONS

Extensive experience in identifying and conducting appropriate statistical analyses through my Master's research and work as a Biologist with MacDonald Environmental Ltd. and the BC Ministry of Environment; I am proficient with the R programming language for statistical computing.

Participated in hydoracoustic and gill netting surveys on the Sooke Lake and Coquitlam reservoirs; sampling consisted of identifying, measuring, weighing, sexing and collecting muscle tissue, stomach contents and scales of freshwater fishes.

Accumulated 34 days at sea participating in juvenile salmon surveys in the Bering Sea. I collaborated with NOAA, collecting phytoplankton, zooplankton and marine and anadromous fishes; sampling consisted of identifying, measuring, weighing, sexing and collecting muscle tissue, stomach contents and scales of selected fishes.

Experience using relational databases such as Microsoft Access and Oracle to import and extract biological and limnological data as well as creating queries to efficiently compile data. I have designed and maintained scientific databases through my Master's research and work experience.

Worked with stakeholders (municipal government) during my experience in the Water and Aquatic Sciences Research Program at the University of Victoria.

Have written technical papers and presented scientific research results during my Master's degree and through my work experience.

EDUCATION

University of Victoria Victoria, BC
M.Sc., Biology, 2010, Water and Aquatic Sciences Research Program

University of Saskatchewan Saskatoon, SK
B.Sc. with distinction, Biology, 2004, Minor in Geographic Information Systems

Carlton Comprehensive High School Prince Albert, SK
High School Diploma, 1997

WORK HISTORY

Environmental Biologist

February 2010 - Present

MacDonald Environmental Sciences Ltd., Nanaimo, BC

- Participate in the development of Natural Resource Damage Assessments and Ecological Risk Assessments by providing support in database development, data and statistical analysis, interpretation of results, and report preparation.
- Participate in the design of sampling programs and the subsequent collection of sediment and biota samples to support the development of Natural Resource Damage Assessments.
- Completed a conceptual site model for the Slave River Basin, which highlighted the environmental hazards and sources of chemicals of potential concern in the area.

Scientific and Technical Officer - Water Protection

April 2009 - February 2010

Health Protection Branch, Population and Public Health Division

BC Ministry of Healthy Living & Sport, Victoria, BC

- Identified key topic areas regarding water quality issues for human health in British Columbia and developed the Water Protection work plan to address the data requirements for priority issues.
- Analyzed and developed spatial information products to address source water protection issues, using ArcGIS.
- Participated in creating a source area risk assessment tool to identify watersheds at risk in British Columbia.
- Reviewed water quality objectives reports, developed to assess water quality in Community Watersheds on Vancouver Island.

Water Quality Biologist

July 2008 - March 2009

Information Branch, Water Stewardship Division

BC Ministry of Environment, Victoria, BC

- Improved and modernized the acquisition of continuous water quality data in the province by successfully installing and using satellite telemetry to acquire real-time water quality data from remote locations, configuring and downloading data from data loggers and calibrating and maintaining multi-parameter water quality probes.
- Reviewed and edited water quality assessment and objectives development reports for community watersheds across the province, including the compilation and

- analysis of water quality data pertaining to designated uses of the watersheds (drinking water, aquatic life, wildlife, recreation and irrigation). Used BC water quality and Health Canada guidelines for drinking water to assess water quality.
- Worked with colleagues in an inter-branch setting to assess and offer recommendations to improve data storage and processing of water quality and quantity data.
 - Contributed to the Water Quality Objectives Attainment Summary Report; the project involved compiling and analyzing water quality data for select watersheds across the province; summary reports for various watersheds were written.

Field Technician

*Water and Aquatic Sciences Research Program
University of Victoria, Victoria, BC*

*January 2008 - June 2008
April 2005 - September 2005*

- Collected limnological data (physical and biological components) in both mesocosm and field settings.
- Supervised a Co-op student during their work term, training the student in collection and analysis of limnological data.
- Performed statistical analyses of field experiments and presented results to the municipal government.
- Prepared and analyzed water chemistry samples (organic carbon, nitrogen and phosphorus).
- Assisted in hydro-acoustic and gill netting fish surveys; identifying, measuring, weighing and bio-sampling salmonids in a freshwater environment.

Teaching Assistant (BIOL 330: Ecological Methods)

University of Victoria, Victoria, BC

January 2007 - April 2007

- Instructed the lab component for 3rd and 4th year biology and environmental science students on design of ecological experiments, sampling design, and statistical analysis.
- Lab material focussed on the analysis of data sets using SPSS 14 and Microsoft Excel and writing scientific reports.
- Guided students through a term research project of their design.

VOLUNTEER EXPERIENCE

Bering-Aleutian Salmon International Survey 2006/2007
University of Victoria / NOAA Bering Sea

- Participated in multi-week trawl surveys in the Bering Sea collecting information on juvenile salmonids
- Identified, measured and weighed juvenile and adult salmonid and other fish species.
- Sampled juvenile and adult salmonids (collected muscle tissue, scales and stomach contents).

Volunteer Firefighter 2003/2004 (Seasonal)
Prince Albert National Park & Waskesiu Lake, SK

COMPUTER SKILLS

Statistical Software: R, SPSS, SigmaPlot

Operating Systems: Mac OS X, Microsoft Windows, GNU/Linux, UNIX

Office Software: Microsoft Word, Microsoft Excel, Microsoft Access, Microsoft Project, Microsoft Outlook

GIS Software: ArcGIS platform (ArcMap, ArcCatalog)

PUBLICATIONS

MacDonald D.D., C.G. Ingersoll, D.E. Smorong, J.A. Sinclair, R.A. Lindscoog, N. Wang, C. Severn, R. Gouguet, J. Meyer, and J. Field. 2011. Baseline ecological risk assessment of the Calcasieu Estuary, Louisiana: 2. An evaluation of the predictive ability of effects-based sediment quality guidelines. Archives of Environmental Contamination and Toxicology. In press.

MacDonald D.D., C.B. Ingersoll, N. Kemble, D.E. Smorong, J.A. Sinclair, R.A. Lindscoog, C. Gaston, D. Sanger, S. Carr, J. Biedenbach, R. Gouguet, J. Kern, A. Shortelle, J. Field, and J. Meyer. 2011. Baseline Ecological Risk Assessment of the Calcasieu Estuary, Louisiana: 3. An Evaluation of the Risks to Benthic Invertebrates Associated with Exposure to Contaminated Sediments. Archives of Environmental Contamination and Toxicology. In press.

- MacDonald, D.D., Sinclair, M. Crawford, H. Prencipe and M. Meneghetti. 2011. Potential effects of contaminants on Fraser River sockeye salmon. MacDonald Environmental Sciences Ltd. Cohen Commission Tech. Rep. 2. In prep. Vancouver, B.C.
www.cohencommission.ca
- MacDonald, G.L. Linder, C.G. Ingersoll, S.E. Finger, M.A. Crawford, H.J. Prencipe, J.A. Sinclair, M.B. Meneghetti, and J.E. Hinck. 2010. Handbook for Assessing Risks to Fish and Wildlife Associated with the Potential Use of Water, Treated Wastewater, Stormwater, Sediment, Soil, Biosolids, or Other Materials on Units of the National Wildlife Refuge System. Volume I: Overview of the Recommended Decision Framework. Prepared for U.S. Fish and Wildlife Service. Vancouver, Washington. Prepared by MacDonald Environmental Sciences Ltd., Nanaimo, British Columbia and United States Geological Survey, Columbia, Missouri.
- MacDonald, G.L. Linder, C.G. Ingersoll, S.E. Finger, M.A. Crawford, H.J. Prencipe, J.A. Sinclair, M.B. Meneghetti, and J.E. Hinck. 2010. Handbook for Assessing Risks to Fish and Wildlife Associated with the Potential Use of Water, Treated Wastewater, Stormwater, Sediment, Soil, Biosolids, or Other Materials on Units of the National Wildlife Refuge System. Volume II: Description of the Rapid (Tier 1) Assessment Process. Prepared for U.S. Fish and Wildlife Service. Vancouver, Washington. Prepared by MacDonald Environmental Sciences Ltd., Nanaimo, British Columbia and United States Geological Survey, Columbia, Missouri.
- MacDonald, G.L. Linder, C.G. Ingersoll, S.E. Finger, M.A. Crawford, H.J. Prencipe, J.A. Sinclair, M.B. Meneghetti, and J.E. Hinck. 2010. Handbook for Assessing Risks to Fish and Wildlife Associated with the Potential Use of Water, Treated Wastewater, Stormwater, Sediment, Soil, Biosolids, or Other Materials on Units of the National Wildlife Refuge System. Volume III: Description of Detailed (Tier 2) Assessment Process. Prepared for U.S. Fish and Wildlife Service. Vancouver, Washington. Prepared by MacDonald Environmental Sciences Ltd., Nanaimo, British Columbia and United States Geological Survey, Columbia, Missouri.
- MacDonald, D.D., C.G. Ingersoll, M. Crawford, H. Prencipe, J.M. Besser, W.G. Brumbaugh, N. Kemble, T.W. May, C.D. Ivey, M. Meneghetti, J. Sinclair, and M. O'Hare. 2010. Advanced screening-level ecological risk assessment (SLERA) for aquatic habitats within the Tri-State Mining District, Oklahoma, Kansas, and Missouri. Draft Final Technical Report. Submitted to United States Environmental Protection Agency (USEPA). Region 6, Dallas, Texas, Region 7, Kansas City, Kansas, and US Fish and Wildlife Service, Columbia, Missouri. Submitted by MacDonald Environmental Sciences Ltd., Nanaimo, British Columbia. United States Geological Survey, Columbia, Missouri. CH2M Hill, Dallas, Texas

PRESENTATIONS

Effects of Wetland Inundation on Hydrologically Connected Aquatic Ecosystems

Society of Canadian Limnologists Annual Meeting, 2007

Montréal, QC