



RIVERSTONE

ENVIRONMENTAL SOLUTIONS INC.

Beverley J. Wicks, Ph.D.
Senior Aquatic Ecologist / Principal

CAREER AND ACADEMIC HISTORY

2008 – Present	Senior Aquatic Ecologist/Principal, RiverStone Environmental Solutions Inc.
2002 – 2008	Aquatic Biologist, Michalski Nielsen Associates Limited
2001	Research Assistant, Simon Fraser University, Burnaby, BC
1998 – 2001	Ph.D., University of British Columbia, Aquatic/Fisheries Toxicology Research Assistant, University of British Columbia, Vancouver, BC
1997	Fisheries Biologist, Department of Environment, Lands and Parks, Vancouver, BC
1994 – 1996	M.Sc., University of Guelph, Guelph, ON
1990 – 1992	Ontario Ministry of Natural Resources, Muskoka Lakes Fisheries Assessment Unit
1989 – 1994	Honours B.Sc. (Agr.) University of Guelph, Guelph, ON
1993	Fisheries Technician, Trout Unlimited/Ontario Ministry of Natural Resources

Professional Experience

The following is a partial list of consulting-based project experience for 2008 – 2010.

Ecological Site Assessments & Environmental Impact Studies/Statements

- Natural Environment Level 1 and Level 2 Technical Report in the **City of the Kawartha Lakes**; *for private client*; **Key Tasks**: project management, fish habitat assessment, impact analysis, assessment of policy compliance, and development of mitigation plan to facilitate licensing of quarry under *Aggregate Resources Act* and avoidance of habitat protected under *Endangered Species Act, 2007*
- Natural Environment Level 1 and Level 2 Technical Report in the **Township of Lake of Bays**; *for private client*; **Key Tasks**: project management, fish habitat assessment, impact analysis, assessment of policy compliance, development of mitigation plan to facilitate licensing of quarry under *Aggregate Resources Act* and avoidance of habitat protected under *Endangered Species Act, 2007*
- Environmental Impact Study for island property (Georgian Bay) in the **Township of The Georgian Bay**; *for private client*; **Key Tasks**: project management, identification of fish habitat and significant natural heritage features, assessment of policy compliance, analysis of impacts potentially resulting from proposed multiple lot severance
- Site Evaluation Report for property on Big Island (Georgian Bay) in the **Township of The Georgian Bay**; *for private client*; **Key Tasks**: project management, identification of fish habitat and significant natural heritage features, assessment of policy compliance, analysis of impacts potentially resulting from proposed single-lot severance

- Ecological Site and Impact Assessment on Kyle Island (Georgian Bay) in the **Township of The Archipelago**; *for private client*; **Key Tasks**: project management, identification of fish habitat and significant natural heritage features, assessment of policy compliance, analysis of impacts potentially resulting from proposed single-lot severance
- Site Evaluation Report for property on Drag Lake in the **Township of Dysart et al**; *for private client*; **Key Tasks**: project management, identification of SAR and fish habitat and significant natural heritage features, assessment of policy compliance, analysis of impacts potentially resulting from proposed multi-lot severance
- Site Evaluation Report for property on Taylor Island (Lake Muskoka) in the **Town of Gravenhurst**; *for private client*; **Key Tasks**: project management, identification of fish habitat and significant natural heritage features, assessment of policy compliance, analysis of impacts potentially resulting from proposed rezoning
- Environmental Screening and Site Plan in the **Township of Seguin**; *for private client*; **Key Tasks**: project management, identification of significant natural heritage features, assessment of policy compliance, analysis of impacts potentially resulting from proposed land use as a result of re-zoning
- Site Evaluation Report for property on Kawagama Lake in the **Township of Havelock**; *for private client*; **Key Tasks**: project management, identification of fish habitat and significant natural heritage features, aquatic impact assessment, assessment of policy compliance, analysis of impacts potentially resulting from proposed single-lot severance
- Significant Natural Heritage Feature Assessment for the **Town of Bracebridge** Official Plan Review; *for Town of Bracebridge*; **Key Tasks**: project management, review existing significant natural heritage feature information in urban and near urban area for Town of Bracebridge
- Environmental Impact Statement for property on Harris Lake in the **Township of The Archipelago**; *for Township of The Archipelago*; **Key Tasks**: project management, identification of fish habitat and significant natural heritage features, assessment of policy compliance, analysis of impacts potentially resulting from proposed single-lot severance
- Environmental Impact Statement for property on Georgian Bay in the **Township of The Archipelago**; *for Township of The Archipelago*; **Key Tasks**: project management, identification of fish habitat and significant natural heritage features, assessment of policy compliance, analysis of impacts potentially resulting from proposed single-lot severance
- Environmental Impact Study for property on Rathlyn Island (Georgian Bay) in the **Township of The Archipelago**; *for private client*; **Key Tasks**: project management, identification of fish habitat and significant natural heritage features, assessment of policy compliance, analysis of impacts potentially resulting from proposed single-lot severance
- Environmental Impact Study for property on Middle Muldrew Lake in the **Town of Gravenhurst**; *for private client*; **Key Tasks**: project management, identification of fish habitat and significant natural heritage features, assessment of policy compliance, analysis of impacts potentially resulting from proposed single-lot severance
- Site Evaluation Report for property in the **Town of Huntsville**; *for private client*; **Key Tasks**: project management, identification of fish habitat and significant natural heritage features, assessment of policy compliance, analysis of impacts potentially resulting from proposed development and application for zoning by-law amendment
- Environmental Impact Statement for property on the Oro Moraine in the **Township of Oro-Medonte**; *for private client*; **Key Tasks**: identification of significant natural heritage features, assessment of policy compliance, analysis of impacts potentially resulting from proposed severance

Environmental Assessments

- Class Environmental Assessment Screening Report on the Severn River in the **Township of Severn**; *for private client*; **Key Tasks:** project management, fish habitat assessment, impact analysis of application to dredge, and assessment of compliance with federal policy to facilitate dredging of marina

Aquatic Habitat and Fisheries Assessments

- Fish Habitat and Species at Risk Level 1 Assessment on Cole Lake in the **Township of Carling**; *for private client*; **Key Tasks:** project management, identification of fish habitat and significant natural heritage features, assessment of policy compliance, analysis of impacts potentially resulting from proposed single-lot severance
- Fish Habitat Assessment on Georgian Bay, in the **Township of Georgian Bay**; *for private client*; **Key Tasks:** project management, fish habitat assessment, assessment of policy compliance
- Fish Habitat Assessment on Rebecca Lake, in the **Township of Lake of Bays**; *for private client*; **Key Tasks:** project management, fish habitat assessment, assessment of policy compliance, and impact analysis, development of mitigation plan to facilitate shoreline development
- Fish Habitat Assessment on Joe River, in the **Township of Muskoka Lakes**; *for private client*; **Key Tasks:** project management, fish habitat assessment, assessment of policy compliance, and impact analysis, development of mitigation plan to facilitate shoreline development
- Environmental Evaluation Report in the **Town of East Gwillimbury**; *for private client*; **Key Tasks:** identification of fish habitat and significant natural heritage features, assessment of policy compliance, and analysis of impacts potentially resulting from subdivision development

Fisheries Mitigation and Compensation/ DFO/MNR/CA Permit Applications

- Muskoka Wharf Shoreline Assessment/Compensation Project at the Muskoka Wharf on Lake Muskoka in the **Town of Gravenhurst**; *for The Town of Gravenhurst*; **Key Tasks:** project management, fish habitat assessment, design of rehabilitated shoreline, and construction mitigation measures development and monitoring protocol
- Fish habitat restoration on Buck Lake, in the **Township of Seguin**; *for private client*; **Key Tasks:** project management, fish habitat assessment, design of rehabilitated shoreline, and construction mitigation measures development and monitoring protocol
- Fish Habitat Compensation, on the Mill Pond in the **Town of Parry Sound**; *for Crofter's Food Ltd*; **Key Tasks:** project management, fish habitat assessment, obtain permits and develop compensation plan
- Kearney – Un-named Creek Rehabilitation, in the **Township of Perry**; *for private client*; **Key tasks:** project management, fish habitat assessment, obtain permits and develop restoration and compensation plan
- Culvert Replacement, Mitigation and Compensation, in the **Town Parry Sound**; *for private client*; **Key Tasks:** project management, fish habitat assessment, obtain permits and develop restoration and compensation plan
- Fisheries permitting and compensation for Behemoth Coaster in the **City of Vaughn**; *for Canada's Wonderland*; **Key Tasks:** project management, fish habitat assessment, permitting, compensation plan, construction mitigation measures and monitoring protocol
- County Road 28 Reconstruction near Minesing Swamp in the **County of Simcoe**; *for R.J. Burnside and Associates*; **Key Tasks:** project management, fish habitat assessment, permitting, compensation plan, construction mitigation and monitoring

Limnology, Water Quality/Sediment Quality Investigations

- Muskoka Lakes Association Water Quality Initiative Program in various townships of the **District of Muskoka**; *for the Muskoka Lakes Association* **Key Tasks**: project management, science and technical advisor, directed analysis of yearly water quality program and making scientific recommendations, and educational support
- Aquatic Study in Lake Couchiching in the **County of Simcoe**; *for Totten Sims Hubicki Associates*; **Key Tasks**: project management, aquatic monitoring and benthic invertebrates assessment, impact analysis for Westshore Water and Sewage project
- Bond Head – Environmental Monitoring, Holland River in the **Township of East Gwillimbury**; *for Geranium Homes*; **Key Tasks**: project management, collection and analysis of water quality data, background conditions report
- Muskoka River Benthic and Water Quality Analysis in the **District of Muskoka**; *for the Town of Hunstville*; **Key Tasks**: project management, water monitoring and benthic invertebrates assessment, impact analysis
- Phase 1 and Phase 2 Water Quality Impact Assessment on Lake Joseph in the **Township of Muskoka Lakes**; *for private client*; **Key Tasks**: project management, identification of significant natural heritage features, locate suitable development envelopes, and analysis of impacts and mitigation measures for single lot severance and development on identified over-threshold waterbody
- Phase 2 Water Quality Impact Assessment on Medora Lake in the **Township of Muskoka Lakes**; *for private client*; **Key Tasks**: project management, identification of significant natural heritage features, locate suitable development envelopes, and analysis of impacts and mitigation measures for single lot severance and development on identified over-threshold waterbody
- Phase 2 Water Quality Impact Assessment on Three Mile Lake in the **Township of Muskoka Lakes**; *for private client*; **Key Tasks**: project management, identification of significant natural heritage features, locate suitable development envelopes, and analysis of impacts and mitigation measures for single lot severance and development on identified over-threshold waterbody

Relevant Certification or Training Courses

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| 2009 | Ontario Benthos Biomonitoring Network participant, Ontario Ministry of the Environment |
| 2006 | Fisheries Assessment and Fisheries Contract Specialist, as per Ministry of Transportation / Department of Fisheries and Oceans / Ontario Ministry of Natural Resources, fisheries protocol training |
| 2003 | Ichthyology course, Royal Ontario Museum Centre of Biodiversity and Conservation Biology |
| 2001 | Electrofishing Certification – British Columbia |

Publications

Wicks, B.J. and D.J. Randall. 2002. The effect of sub lethal ammonia exposure on fed and unfed rainbow trout: the role of glutamine in the regulation of ammonia. *Comparative Biochemistry and Physiology*.

Wicks, B.J. and D.J. Randall. 2002. The effect of feeding and fasting on ammonia toxicity in juvenile rainbow trout, *Oncorhynchus mykiss*. *Aquatic Toxicology*. 59:71-82.

- Wicks, B.J., Q. Tang, R. Joensen, D.J. Randall. 2002. Swimming and ammonia toxicity in salmonids: the effect of sub lethal ammonia exposure on the swimming performance of coho salmon and the acute toxicity of ammonia in swimming and resting rainbow trout. *Aquatic Toxicology*. 59:55-69.
- Rosenfeld, J.S., M. Porter, M. Pearson, B. Wicks, P. Van Dishoeck, T. Patton, E. Parkinson, G. Hass, and J. D. McPhail. 2001. The influence of temperature and habitat on the distribution of chiselmouth, *Acrocheilus alutaceus* in British Columbia. *Env. Biol. Fish.* 62: 401-413.
- Val, A.L., B.J. Wicks and D.J. Randall. 2001. Anaemia and polycythaemia affect levels of ATP and GTP in fish red blood cells. Proceeding of the Sixth International Symposium on Fish Physiology, Toxicology, and Water Quality. Baja, Mexico.
- Randall, D.J. and B.J. Wicks. 1999. Fish ammonia production, excretion and toxicity. Paper presented in the Fifth International Symposium on Fish Physiology, Toxicology and Water Quality, 9-12 November 1998, City University of Hong Kong.
- Wicks, B.J., L.A. Barker, B.J. Morrison and F.W.H. Beamish. 1998. Gonadal variation in Great Lakes sea lamprey larvae. *J. Great Lakes Res.* 24(4) 962-968.
- Barker, L.A. B.J. Morrison, B.J. Wicks and F.W.H. Beamish. 1998. Potential fecundity of landlocked sea lamprey larvae, *Petromyzon marinus*, with typical and atypical gonads. *Copeia*.
- Barker, L.A., B.J. Morrison, B.J. Wicks and F.W.H. Beamish. 1997. Age discrimination and statolith diversity in sea lamprey from streams with varying alkalinity. *Trans. Am. Fish. Soc.* 126:1021-1026.