



RIVERSTONE

ENVIRONMENTAL SOLUTIONS INC.

ROB WILLSON, M.Sc., B.Sc.

Senior Terrestrial Ecologist; Species at Risk Specialist; Principal

CAREER AND ACADEMIC HISTORY

2008 – Present	Senior Terrestrial Ecologist and Species at Risk (SAR) Specialist / Principal, RiverStone Environmental Solutions Inc.
2007 – 2008	Terrestrial Ecologist/Species at Risk Specialist, Michalski Nielsen Associates Limited, Bracebridge, ON
2002 – 2007	Private Ecological Consultant
2000 – 2002	Director of Research – The Wilds of Pelee Island, Outdoor Centre for Conservation, Pelee Island, ON
1997 – 1999	M.Sc., University of Guelph, Department of Zoology, Guelph, ON
1997 – 1999	Teaching Assistant, Ornithology, Animal Behaviour, University of Guelph, Guelph, ON
1992 – 1996	B.Sc., University of Guelph, Pure and Applied Ecology, Guelph ON

PROFESSIONAL EXPERIENCE

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

Ecological Site Assessments & Environmental Impact Studies/Statements

- Development of 17(2)(c) Permit under the *Endangered Species Act, 2007* for proposed quarry in the **City of Kawartha Lakes (Sebright)**; *for private client*; **Key Tasks:** identification of Species at Risk habitat on lands proposed for quarrying; development of avoidance, overall benefit, and associated monitoring plans for Blanding's Turtle and Whip-poor-will, and Eastern Hog-nosed Snake
- Development of 17(2)(c) Permit under the *Endangered Species Act, 2007* for proposed mining activities on property in the **City of Greater Sudbury**; *for private client*; **Key Tasks:** identification of Species at Risk habitat on lands proposed for mining-related activities, development of avoidance, overall benefit, and associated monitoring plans for Whip-poor-will
- SAR Assessment for access road across crown land in the **Township of Georgian Bay**; *for the Town of MacTier*; **Key Tasks:** identification of SAR habitat and significant natural heritage features; analysis of impacts potentially resulting from road proposed to access municipally owned pit; development of mitigation plan to demonstrate avoidance of habitat; development of Agreement 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:** identification of SAR habitat and significant natural heritage features; terrestrial fauna assessment, impact analysis; development of mitigation plan to facilitate licensing of quarry under *Aggregate Resources Act* and avoidance of habitat protected under *Endangered Species Act, 2007*

- Assessment of habitat potential for Whip-poor-will and Eastern Hog-nosed Snake to assess concerns under the *Endangered Species Act, 2007* in the **Township of Muskoka Lakes**; *for private client*; **Key Tasks:** conduct nocturnal surveys for Whip-poor-will; conduct habitat assessment for Eastern Hog-nosed Snake; submit recommendations to client for approval by MNR; approved October 2010
- Site Evaluation Report for property on the Severn River in the **Township of Muskoka Lakes**; *for private client*; **Key Tasks:** identification of SAR habitat and significant natural heritage features; analysis of impacts potentially resulting from proposed single-lot severance
- SAR and Significant Natural Heritage Feature Assessment for the **Town of Bracebridge** Official Plan Review; *for the Town of Bracebridge*; **Key Tasks:** review existing SAR and 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 the Township of The Archipelago*; **Key Tasks:** identification of SAR habitat and significant natural heritage features; 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 the Township of The Archipelago*; **Key Tasks:** identification of SAR habitat and significant natural heritage features; analysis of impacts potentially resulting from proposed single-lot severance
- Environmental Impact Statement for property in the **Town of Huntsville**; *for private client*; **Key Tasks:** identification of SAR habitat and terrestrial fauna assessment; impact analysis and development of mitigation plan to facilitate 26-lot plan of subdivision
- Natural Environment Level 1 and Level 2 Technical Report in the **Town of Bracebridge**; *for private client*; **Key Tasks:** identification of SAR habitat and significant natural heritage features; terrestrial fauna assessment, ELC, impact analysis; development of mitigation plan to facilitate licensing of pit under *Aggregate Resources Act* and avoidance of habitat protected under *Endangered Species Act, 2007*
- SAR Assessment for property in Humphrey, the **Township of Seguin**; *for private client*; **Key Tasks:** identification of SAR habitat and significant natural heritage features, analysis of impacts potentially resulting from proposed development
- Habitat-use assessment for Massasauga on **Rathlyn Island (Georgian Bay)**; *for private client*; **Key Tasks:** two-year study of potential Massasauga gestation sites to evaluate use of these habitats, as per the requirements set out in Guidelines for the Massasauga by the species recovery team
- Environmental Impact Statement for property in the **Town of Gravenhurst**; *for private client*; **Key Tasks:** identification of SAR habitat, terrestrial fauna, ELC, impact analysis, development of mitigation plan to facilitate multi-unit condominium unit
- Environmental Impact Study for property on Middle Muldrew Lake in the **Town of Gravenhurst**; *for private client*; **Key Tasks:** identification of SAR habitat, analysis of impacts potentially resulting from proposed Zoning By-law amendment to reduce setbacks on a single lot
- Site Evaluation Report for property in the **Town of Gravenhurst**; *for private client*; **Key Tasks:** identification of SAR habitat and significant natural heritage features, analysis of impacts resulting from development on an undersized lot
- Assessment of SAR Habitat (Eastern Foxsnake) on island in Georgian Bay in the **Township of The Archipelago**; *for Private Client*; **Key Tasks:** identification of Eastern Foxsnake habitat on small island, development of mitigation and site plan to facilitate removal of “no building” condition by MNR

Species at Risk Habitat Modeling

- Identification of Massasauga Habitat and Assessment Of Habitat Quality (2009), in **Carling, Archipelago, and Seguin Townships**; for *Ontario Ministry of Natural Resources, Parry Sound Office*; **Key Tasks**: evaluation of potential for rock barren and wetland communities to function as habitat for Massasauga based on size, orientation, and proximity to other key habitats, evaluation based on 2004 orthophoto interpretation

Peer Reviews

- Review of Environment Impact Study for Planning Application in **Parry Sound**; for *Seguin Township*; **Key Tasks**: evaluation of site assessment and impact analysis submitted as part of a rezoning application
Review of Environment Impact Study for Planning Application in **Orillia**; for *the City of Orillia*; **Key Tasks**: evaluation of issues pertaining to adjacent lands and Provincially Significant Wetlands
- Review of Requirements for Port Severn Plan of Subdivision (Oak Bay) in the **Township of Georgian Bay**; for *District Municipality of Muskoka*; **Key Tasks**: assessment of rationale for installation of an eco-passage under Muskoka Rd Five

Research-focused Experience

The following is a partial list of research-focused project experience.

- | | |
|---------------|--|
| May 06–Nov 06 | <p>Evaluation and Validation of Eastern Foxsnake and Eastern Hog-nosed Snake observation records in the Natural Heritage Information Centre’s database—Contract with the Eastern Foxsnake and Eastern Hog-nosed Snake Recovery Team</p> <ul style="list-style-type: none"> • Evaluated spatial accuracy and reliability of observation records for spatial analysis and habitat modelling using ArcGIS 9 and knowledge of species’ distribution and habitat requirements • Evaluated the data’s potential to identify Significant Habitat and Critical Habitat |
| Jun 02–Oct 05 | <p>Radiotelemetry, mark-recapture, and road mortality study of Eastern Massasauga rattlesnake and Eastern Hog-nosed Snake populations along Hwy 400—Ministry of Natural Resources; Species at Risk Technician (4 field seasons; Parry Sound Office)</p> <ul style="list-style-type: none"> • Radiotracked ≈ 60 eastern massasaugas and eastern hog-nosed snakes over four years • Assessed road mortality along newly constructed section of highway using road surveys, culvert monitoring via infrared cameras, and drift fence trapping • Conducted site inspections at several locations within the Georgian Bay region for presence of Species at Risk: Massasauga, Hog-nosed Snake, Eastern Foxsnake, Five-lined Skink, Spotted Turtle, Blanding’s Turtle, and Eastern Musk Turtle |
| Dec 03–Jan 04 | <p>GIS Spatial evaluation and presentation of the Endangered Blue Racer snake radiotelemetry and mark-recapture data—preparation for Ontario Municipal Board hearing (OMNR contract; Aylmer District)</p> <ul style="list-style-type: none"> • Evaluated and prepared 3 years of radiotracking data and 4 years of mark-recapture data for OMB hearing preparations |
| Jan 01–Jun 01 | <p>Data Evaluation, Literature Compendium, and Species Reporting set-up for Species at Risk in Georgian Bay; the Georgian Bay Reptile Awareness Program (OMNR Contract, Parry Sound Office)</p> |

- Sep 00–Jun 02 **Wilds of Pelee Island, Outdoor Centre for Conservation—Director of Research**
- Organized research and restoration projects for multiple species at risk
 - Restored degraded habitats via artificial microhabitat creation for egg-laying snakes and seed collection of rare prairie flora for future plantings
- Apr 00–Sept 02 **Endangered Blue Racer Snake - Spring Survey (OMNR Contract, Chatham Office) – Project Leader**
- Organized research team of 8 biologists to conduct a systematic survey to determine the distribution and abundance of the endangered blue racer snake on Pelee Island; all snake species were recorded
 - Field work – captured blue racers and eastern foxsnakes and marked individuals with passive integrated transponders continuing long term mark-recapture study
 - Data incorporated into mark-recapture and GIS databases
 - Synthesis – yearly final reports incorporating collected and historical data
- Feb 00 **Pelee Island Spatial Database (WWF Canada c/o Pelee Island Conservation Plan) – Contracted Technician**
- Georeferenced property boundary maps incorporating them into GIS database (ArcView 3.1)
- Nov 99 **Pelee Island Spatial Database (WWF Canada c/o B. D. Porchuk’s Pelee Island Conservation Plan) – Contracted Technician**
- Georeferenced 1994 aerial photos (1:10000) incorporating them into GIS database (ArcView 3.1)
- March 98 – Sept 00 **M.Sc. Dept. of Zoology - investigated the reproductive ecology of the Eastern Foxsnake on Pelee Island**
- surgically implanted and removed radiotransmitters into/from female eastern foxsnakes to investigate reproductive ecology; primarily thermoregulation and nesting behaviour
 - investigated the utility of artificially created nest sites by monitoring incubation temperatures and nesting success
 - accurately mapped snake locations (radiotelemetry and GPS) and habitat features incorporating them into a spatial database (ArcView 3.1)
- June 94 – Sept 97 **Eastern Massasauga Rattlesnake Research in Killbear Provincial Park—Field Technician**
- assisted M.Sc. student during 4 field seasons; radiotracked >30 eastern massasaugas over 3-year period
 - Quantified habitat use and movement using GPS and ArcView
 - Communicated research results to members of the public and fellow staff through educational displays, newsletter articles, on-the-spot interpretation, and Natural Heritage Education programs

Relevant Certification or Training Courses

- 2009 Ecological Land Classification, Ontario Ministry of Natural Resources
- 2008 Ontario Wetland Evaluation System (OWES) certification, Ontario Ministry of Natural Resources

Reports and Articles

- Rouse, J.D., Willson, R.J., Black, R., and Brooks, R.J. 2010. Movement and spatial dispersion of *Sistrurus catenatus* and *Heterodon platirhinos*: Implications for interactions with roads. *Copeia*. *In Press*.
- Willson, R.J., 2008. Update COSEWIC status report on the Eastern Foxsnake, *Elaphe gloydi*, in Canada, in COSEWIC assessment and update status report on the Eastern Foxsnake, *Elaphe gloydi*, in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa.
- Willson, R.J., Brooks, R.J., 2006. Thermal biology of reproduction in female Eastern Foxsnakes (*Elaphe gloydi*). *Journal of Herpetology* 40, 285-289.
- Willson, R.J., 2003. Invasive procedures protocol for snakes. Snake and Lizard Advisory Group (SLAG), Unpublished report for the Ontario Ministry of Natural Resources.
- Willson, R. J. 2002. A systematic search for the blue racer (*Coluber constrictor foxii*) on Pelee Island (2000–2002): Final Report. Unpublished report for the Ontario Ministry of Natural Resources.
- Willson, R. J., Rouse, J. D. 2002. Update COSEWIC status report on the blue racer *Coluber constrictor foxii* in Canada, in COSEWIC assessment and update status report on the blue racer (*Coluber constrictor foxii*) in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa.
- Rouse, J.D., Willson, R.J., 2002. Update COSEWIC status report on the massasauga *Sistrurus catenatus* in Canada, in COSEWIC assessment and update status report on the massasauga *Sistrurus catenatus* in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa.
- Willson, R.J. 2000. A systematic search for the blue racer snake (*Coluber constrictor foxii*) on Pelee Island. Unpublished report for the Ontario Ministry of Natural Resources.
- Willson, R.J. 2000. The thermal ecology of gravidity in eastern fox snakes (*Elaphe gloydi*). M.Sc. Thesis, University of Guelph, Guelph, Ontario.
- Willson, R.J., Porchuk, B.D., and Brooks, R. J. 2000. The dangers of living on Pelee Island: a survey of snake road mortality. Unpublished Report.
- Rouse, J.D., Willson, R.J. 1999. Status of the northern water snake (*Nerodia sipedon sipedon*) in Canada. Status Report. COSEWIC. 24 pp.
- Willson, R.J., Prior, K.A. 1998. Status of the eastern fox snake (*Elaphe vulpina gloydi*) in Canada. Status Report. COSEWIC. 35 pp.
- Willson, R.J., Brooks, R.J. 1996. Thermoregulation in free-ranging eastern massasauga rattlesnakes (*Sistrurus catenatus catenatus*). Honours Thesis, University of Guelph.
- Willson, R. J. 1995. A two-year (1993,1994) survey of roadkills on Pelee Island. In B. D. Porchuk and R. J. Brooks (eds.), Conservation and Biology of The Endangered Blue Racer Snake (*Coluber constrictor foxii*) on Pelee Island, pp. 21-30. Progress report for the Ontario Ministry of Natural Resources.