

# Species Lists





1		OESA Status
1	END	<b>Endangered</b> . Any native species that is at risk of extinction or extirpation throughout all or a significant portion of its Ontario range if the limiting factors are not reversed. Protected under the Endangered Species Act.
1	EXP	<b>Extirpated</b> . Any native species no longer existing in the wild in Ontario, but existing elsewhere in the wild.
1	EXT	<b>Extinct</b> . Any species formerly native to Ontario that no longer exists.
1	IND	<b>Indeterminate</b> . Any native species for which there is insufficient scientific information on which to base a status recommendation.
1	NIAC	<b>Not In Any COSSARO Category</b> . Any native species evaluated by COSSARO which does not currently meet criteria for assignment to a provincial risk category.
1	THR	<b>Threatened</b> . Any native species that is at risk of becoming endangered throughout all or a significant portion of its Ontario range if the limiting factors are not reversed.
1	VUL	<b>Vulnerable</b> . Any native species that, on the basis of the best available scientific evidence, is a species of special concern in Ontario, but is not a threatened or endangered species.

1		SARA Status
1	END	<b>Endangered</b> . A species facing imminent extirpation or extinction throughout its range.
1	EXP	<b>Extirpated</b> . A species no longer existing in the wild in Canada, but occurring elsewhere in the wild.
1	EXT	<b>Extinct</b> . A species that no longer exists.
1	IND	<b>Indeterminate</b> . A species for which there is insufficient information to support a status designation.
1	NAR	<b>Not At Risk</b> . A species that has been evaluated and found to be not at risk.
1	SC	<b>Special Concern</b> . A species of special concern particularly sensitive to human activities or natural events. Does not include an extirpated, endangered or threatened species.
1	THR	<b>Threatened</b> . A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.



## Staff Qualifications



## Profession

Environmental Planner, Ecological Restoration Specialist

## Education

M.Sc. (PI), University of Guelph, 2010

Diploma, Ecosystem Restoration, Niagara College, 2001

B.Sc. (Env.), University of Guelph, 2000

## Certificates

Ontario Wetland Evaluation for Southern Ontario, 2006

Ecological Land Classification, 2004

Low Complexity Prescribed Burn Workers Course, 2004

Electrofishing, 2001

BioMAP, 2000

## Employment Record

Environmental Planner, R.J. Burnside & Associates Limited (2006-Present)

Generic Regulations Assistant, Upper Thames River Conservation Authority (2005-2006)

Stewardship Assistant, Ontario Ministry of Natural Resources (2003-2004)

Surface Water Monitoring Officer, Ontario Ministry of Natural Resources (2002-2003)

Eco-Tourism Consultant, CIDA/Cerro Blanco Protected Forest, Ecuador (2001)

## Citizenship

Canadian

## Languages

English

## Tricia Radburn, M.Sc.(PI), MCIP, RPP

Tricia is experienced in assessing and analyzing development impacts on environmental and natural heritage features. Certified in Ecological Land Classification and Wetland Evaluation, Tricia has conducted field studies and analyzed environmental conditions for Environmental Impact Studies under the Planning Act, Greenbelt Plan, Oak Ridges Moraine Conservation Plan, Niagara Escarpment Plan and a variety of class environmental assessment processes. She is knowledgeable of a wide variety of permitting processes and has experience with approvals under the Public Lands Act, Endangered Species Act, Species at Risk Act, Fisheries Act and Conservation Authority regulations. Prior to working at Burnside, Tricia worked for the Upper Thames River Conservation Authority where she helped to incorporate O.Reg. 97/04 – Development, Interference with Wetlands and Alterations to Shorelines and Watercourses into UTRCA policies and guidelines.

She recently completed a Masters Degree in First Nation Energy Planning under Ontario's new Green Energy Act, Renewable Energy Approval Regulation and various incentive programs.

## Energy Projects and Renewable Energy Approvals

### Preliminary Wind Farm Planning, Wabaseemoong and Ginoogaming First Nations, Whitedog and Longlac, Ontario (2009-Present)

Conducted a preliminary assessment of environmental constraints associated with proposed wind farms in the Ginoogaming and Wabaseemoong First Nations. Conducted initial interviews with community leaders to identify concerns, resources and areas of importance within the communities that will require additional study and discussion as the projects progress.

### Grand Bend Wind Farm 100 MW Renewable Energy Approval, Northland Power Inc., Grand Bend, Ontario (2011-Ongoing)

Coordinated all fieldwork and prepared documentation for all components of the Natural Heritage Assessment portion of the Renewable Energy Approval as well as Endangered Species Act permitting. Worked closely with the Ministry of Natural Resources and coordinated changes in the work program to correspond with ongoing updates and amendments to the provincial guidelines as the project progressed. Attended Public Information Centres to answer questions about the project and its potential impacts on the environment with local landowners. Coordinated all required field surveys and reporting with respect to Species at Risk.

### Uxbridge Goodwood 20 MW Solar Farm Renewable Energy Approval, Pacific Power Inc., Uxbridge, Ontario (2011-Ongoing)

Coordinated fieldwork associated with the Natural Heritage Assessment and identified preliminary environmental constraints which could affect the feasibility of the project.

### Aboriginal Renewable Energy Fund Pre-Feasibility Studies for Various First Nation Communities, Ontario (2011-Ongoing)

Assisted in coordinating funding applications. Prepared a questionnaire for communities to address Aboriginal Traditional Knowledge and Interested Person portions of the pre-feasibility studies. Provided QA/QC for the pre-feasibility reports.

### **Festival Hydro Transformer Station Class Environmental Assessment for Minor Transmission Facilities, Stratford, Ontario (2010-2011)**

Prepared a Class EA for a new transformer station in the City of Stratford. Conducted all required public notifications and assessments potential impacts associated with noise, construction and operation of the facility.

### **Westerhout Class 2 Wind Facilities Renewable Energy Approval Applications, Huron County, Ontario (2009-2010)**

Consulted with agencies to confirm approval application requirements under the new Renewable Energy Approval Regulation, O.Reg. 359/09 for 2 wind facilities. In particular, discussions were held regarding the need for archaeological assessments. Different agencies interpreted the new regulations in different ways. Ensured that a consensus was achieved and all parties agreed to the same conclusion. Ensured that all consultation requirements with agencies and stakeholders were completed.

### **Elgin Grovlea Class 2 Wind Facility Renewable Energy Approval Application, Elgin County, Ontario (2010)**

Prepared a Renewable Energy Approval Application under O.Reg. 359/09 for a Class 2 wind facility. Considered how the construction and operation of turbines could impact adjacent natural heritage features. Ensured that all neighbours, stakeholders and agencies were consulted as required under the regulation.

### **Honeywood Wind Power Constraints Analysis and Environmental Assessment, Mulmur Township, Ontario (2006-2008)**

The first stage of this project was to prepare preliminary environmental constraints analysis, including a compilation of all relevant municipal, provincial and federal policies in effect in the study area. A search of background data sources was conducted to identify potential environmental constraints and list all the necessary approvals required for the project. Based on this review, the project moved forward into the Environmental Assessment process. Conducted fieldwork and data reviews to document natural heritage features to support the EA and requirements of the Niagara Escarpment Commission.

### **East Garafraxa and Marsville Wind Farm Environmental and Regulatory Constraints Screening, East Garafraxa, Ontario (2006-2007)**

Environmental and regulatory constraints were assessed for 2 potential wind farm sites. Natural heritage features were identified through a desktop review and consultation with applicable agencies. The report was used by the client to assist in making a decision about whether to proceed with the project.

### **South River Wind Farms Environmental and Regulatory Constraints Screening, Nipissing and Parry Sound Districts, Ontario (2007)**

Four proposed wind farm sites were assessed for environmental and regulatory constraints that could limit energy development. Sites spanned organized and unorganized municipalities which included Crown and private lands. Results allowed the client to make an informed decision about whether to proceed with wind farm development on the sites.

### **Captus Energy Wind Farm Environmental Assessment, Huron County, Ontario (2006)**

Initiated preparation of a natural heritage report to supplement the Environmental Assessment. Identified natural heritage features and described preliminary protection measures to minimize impacts. Project did not move forward due to constraints in transmission line capacity.

## **Advisory Services**

### **Peer Review of the Duntroon Quarry Natural Environment Report, Clearview Township, Ontario (2006-Present)**

Reviewed the Natural Environment Report prepared in support of the proposed Duntroon Quarry expansion on behalf of the Township of Clearview. Consulted the PPS, Township of Clearview, County of Simcoe and Niagara Escarpment Plan to determine if a proposed quarry expansion conformed to all applicable natural heritage and aggregate resources policies. Advised the Township on how to proceed with the application and requirements for additional information and detailed studies.

### **Peer Review of the Sargeant-Waverley Pits #1 and #2 Natural Environment Report, Tiny Township, Ontario (2006)**

Reviewed the Natural Environment Report relative to the policies of the PPS, Aggregate Resources Act, Township of Tiny and County of Simcoe Official Plans to determine if 2 new proposed aggregate extraction pits, 1 involving below water table extraction, met natural heritage and aggregate resource policies.



### **Peer Review of Amaranth Estates Environmental Impact Assessment, Amaranth Township, Ontario (2006)**

Provided advisory services to the Township of Amaranth with respect to an Environmental Impact Assessment for a proposed subdivision. Recommended an approach to appropriately resolve concerns with a wetland on the property that had inadvertently been left off Greenlands mapping in a recent update to the Township's Official Plan.

### **First Nations Planning and Advisory Services**

#### **Review of Amendments to the Bruce County Official Plan on behalf of the Saugeen Ojibway First Nations, Wiarton, Ontario (2009-Present)**

Reviewed major amendments proposed to the Bruce County Official Plan. Identified which were relevant to the rights and interests of the Saugeen Ojibway First Nation (SON), including policies for the identification and protection of cultural resources, policies for shoreline areas with the potential to affect water quality and fisheries resources as well as policies for large scale wind power developments and boundary mapping of significant natural heritage features. Recommended appropriate responses for the SON to ensure that their rights and interests are considered and incorporated into planning documents.

#### **Sheshatshiu Innu Community Commercial Zoning and CEAA Screening, North West River, Labrador (2010-Ongoing)**

The community is interested in designating a portion of its reserve lands for leasing to non-First Nation commercial development. Prepared materials for, and assisted in organizing and facilitating a community workshop to help the community identify where commercial development should be located. The workshop was used to help community members consider types of existing development are compatible or incompatible with the proposed commercial development. Reviewed Indian and Northern Affairs Canada's land use policies to understand the process for designating reserve lands and writing a Head Lease to allow reserve lands to be leased to non-First Nation developers and business owners. Coordinated with land surveyors and land appraisers and staff associated with a Phase 1 Environmental Site Assessment.

#### **Cape Croker Recreational and Cultural Master Plan, Chippewas of Nawash Unceded First Nation, ON (2010-2012)**

Undertook consultation with the community to identify a "wish list" for improvements to community recreational and cultural facilities. Lead focus groups with representative sample of community groups and segments, including youth, Elders, parents, participants in cultural arts and recreation programs. Managed a local youth who was hired to assist with community consultation. Summarized findings from focus groups, comment cards and long questionnaires. Identified community priorities and recommended measures for implementation.

#### **Territorial Planning Concepts, Grand Council Treaty #3, Kenora, Ontario (2010)**

The overall goal of the project was to initiate discussions that may eventually lead to a consultation agreement between the Grand Council Treaty #3 (GCT3), Ministry of Natural Resources and Ministry of Northern Development, Mines and Forests that will clarify how the GCT3 wishes to be consulted on land use and resource management applications and how the GCT3 may use consultation opportunities to create new economic partnerships and economic development opportunities. Summarized legislation associated with land use and resource management in Northern Ontario. Identified policies in the Public Lands Act, Mining Act, Crown Forest Sustainability Act that allow for participation of the Grand Council Treaty #3 and its member communities in land use planning decisions. The Proposed Growth Plan for Northern Ontario was also reviewed for strategies and objectives that could provide new economic opportunities for the GCT3. Surveyed member communities by phone to understand community concerns with their relationship with the MNR and MNDMF. Prepared materials for, organized and assisted in delivering a presentation and community workshop to further understand the GCT3's interests in land use planning. Suggestions were made to resolve misunderstandings and challenges that were limiting the current relationship between all parties.

#### **Land Use Planning Guide for Northern Ontario for the Métis Nation of Ontario (2010)**

Created a planning guide for the Métis Nation of Ontario (MNO). The guide included summaries of planning legislation and policies including the Planning Act, Public Lands Act and Crown Forests Sustainability Act among others. Particular attention was paid to new or recently updated legislation such as the Mining Act, Proposed Growth Plan for Northern Ontario and Bill 191, draft Far North Act. Recommendations were then made to increase the MNO's involvement in planning and resource management in Northern Ontario.

#### **Review of Amendments to the Township of Pelee Official Plan on behalf of the Walpole Island First Nation (2010)**

Reviewed draft updates to the Township of Pelee Official Plan. Identified which were relevant to the rights and interests of the Walpole Island First Nation (WIFN), including policies for the identification and protection of natural and cultural resources. It was found that the Official Plan did not appropriately identify the WIFN's existing land claim to portions of the Township or known WIFN archaeological sites on Pelee Island. Recommended appropriate responses for the WIFN to ensure that their rights and interests are considered and incorporated.

#### **Review of Coast Guard Proposal to Store Dredged Material from the St. Clair River at the Walpole Island High Banks Pit Site, Walpole Island First Nation, Ontario (2007)**

Provided review and analysis of existing documentation, inventories and previous studies documenting the significance and sensitivity of natural heritage features on, and adjacent to, the Walpole Island High Banks lands. Prepared a community questionnaire to identify the cultural uses of plants, recreational opportunities and cultural significance of the property. Assisted with organization of a Public Information Centre to provide information and collect community opinion on the project. Provided advice to the community regarding the suitability of the borrow pit to store the dredged material. Identify the permitting requirements needed to proceed with the project, i.e., Environmental Assessment, Fisheries Act authorization and Species at Risk Act permits.

#### **Matawa First Nation Winter Road Realignment Preliminary Environmental Assessment (2007)**

Prepared a preliminary INAC CEAA Screening to identify opportunities and constraints related to the realignment and potential upgrading to all-season roads for the winter road system servicing 5 First Nation communities in northern Ontario.

#### **Species at Risk Surveys and Permitting**

#### **Detroit River International Crossing Individual Environmental Assessment and Endangered Species Act Permit Review, Windsor, Ontario (2008-Present)**

Reviewed Natural Heritage background reports, Environmental Assessment documents, Endangered Species Act permits and Management Plans for Rare Species on behalf of the Walpole Island First Nation (WIFN) to determine if Aboriginal interests and rights associated with traditional use of the area were appropriately addressed. WIFN's primary interests related to rare tallgrass prairie habitat and species, given the presence of similar habitats on Walpole Island.

#### **Species at Risk Project Biologist, XTEC, Former Camp Ipperwash, Ipperwash, Ontario (2007-2009)**

Worked in conjunction with the unexploded ordnance clearing team and the Stony and Kettle Point First Nation on the Former Camp Ipperwash, Military Training Center. Ensured adherence to the Canadian Wildlife Services (CWS) Species at Risk Permit required for vegetation clearing. Worked with the local community for several months over 2 field seasons to identify and avoid Federal and Provincial Species at Risk and culturally important species and sites during site operations. Attended an Aboriginal Cultural Awareness Training sessions presented by the Stony and Kettle Point First Nation.

#### **Species at Risk Act and Endangered Species Act Permitting, Moose Deer Point First Nation, Mactier, Ontario (2009)**

Prepared and coordinated permit applications under provincial and federal species at risk legislation in association with construction of a new water treatment and distribution system in proximity to the habitat of several protected reptiles and amphibians. Developed mitigation and monitoring plans to ensure potential impacts were minimized.

#### **Environmental Impact Studies**

#### **Lake Simcoe Aeropark Environmental Impact Study, Oro-Medonte, Ontario (2008-Present)**

Identified impacts to natural heritage features associated with a proposed industrial subdivision located adjacent to the Lake Simcoe Regional Airport. Work involved staking boundaries of natural features with the local Conservation Authority and coordinating a number of sub consultants to conduct detailed vegetation and wildlife inventories, including a study of bird hazards to aviation safety at the airport in relation to habitat areas on the subject lands.

#### **Preliminary Environmental Constraints Analysis of the Proposed YMCA Cedar Glen Camp Expansion and Redevelopment, King Township, Ontario (2010-2012)**

The YMCA was interested in preparing a Master Plan for the Cedar Glen camp to plan future expansion and redevelopment of the site. Met with the client to clarify their needs and the scope of work required. Identified all applicable natural heritage policies and identified potential development constraints associated with the Natural Heritage System of the Greenbelt Plan and Natural Linkage policies of the Oak Ridges Moraine Conservation Plan. Identified and recommended future study and work requirements in order to move the development forward.



#### **Winifred Woods Trail Environmental Impact Study, City of Kitchener, Ontario (2011-2012)**

Coordinated Ecological Land Classification, breeding bird surveys and wetland delineations for an Environmental Impact Study of a proposed trail joining the Pioneer Park subdivision with the Walter Bean Trail through the Winifred Woods Environmentally Sensitive Policy Area. The trail traversed lands owned by the City of Kitchener and Grand River Conservation Authority (GRCA) and included a number of Significant Wildlife Habitats and natural hazard lands. Various trail routes and trail designs were assessed. Undertook negotiations with the GRCA regarding portions of the trail on their lands.

#### **Environmental Impact Study of the Balzer Creek Trail, Kitchener, Ontario (2009-2010)**

An Environmental Impact Study was prepared at the request of the Grand River Conservation Authority (GRCA) because the proposed trail was located within the GRCA's regulation limit. The EIS considered how the trail would be constructed, where it was to be located and how it would be used in order to assess potential impacts on the adjacent Balzer Creek. During the EIS, several Butternut trees and endangered species were identified in close proximity to the trail. Discussions were held with the Ministry of Natural Resources to determine how to proceed, including the process under the Endangered Species Act. Negotiations were successful in avoiding the need for a permit based on trail routing.

#### **Humber College Orangeville Campus Environmental Impact Study, Town of Orangeville, Ontario (2006-2008)**

Identified natural heritage features, analyzed potential impacts and recommended mitigation measures for the proposed Humber College Orangeville Campus in the Town of Orangeville. Field studies including Ecological Land Classification and amphibian monitoring were conducted in order to determine the significance and sensitivity of environmental features. The analysis included implications of the development on wildlife corridors, valleylands, wetlands and a coldwater stream.

#### **Veteran's Way Residential Subdivision Environmental Impact Study, Town of Orangeville, Ontario (2006-2008)**

Identified natural heritage features, analyzed potential impacts and recommended mitigation measures for a proposed residential subdivision and commercial development in the Town of Orangeville. Field studies including Ecological Land Classification and amphibian monitoring were conducted in order to determine the significance and sensitivity of environmental features. The analysis included implications of the development and stormwater management proposal.

### **Secondary and Master Servicing Plans**

#### **Community of Colgan Master Servicing Plan, Township of Adjala-Tosorontio, County of Simcoe, Ontario (2008-Present)**

Identified land use and natural heritage policies of relevance to infrastructure planning and recommended measures to incorporate natural heritage protection into the Master Servicing Plan.

#### **Churchville Planning and Heritage Study, City of Brampton, Ontario (2007)**

Inventoried existing natural heritage and natural hazard conditions and reviewed land use policies in the City and Regional Official Plans, PPS, Secondary Plan and Subwatershed Study. Developed comprehensive land use guidelines for the Churchville planning area to protect natural heritage features and provide clarity with respect to natural hazard lands.

#### **North West Fergus Secondary Plan Environmental Impact Assessment, Fergus, Ontario (2007)**

Identified all natural heritage and hazard land constraints, recommended lands for protection, recreation and trail development as part of the West Fergus Secondary Plan.

### **Environmental Assessments**

#### **Detroit River International Crossing Individual Environmental Assessment Review, Windsor, Ontario (2008-2012)**

Reviewed Natural Heritage background reports and Environmental Assessment documents on behalf of the Walpole Island First Nation (WIFN) to determine if their interests and rights associated with traditional use of the area were appropriately addressed.

#### **Dissette Street Schedule C Municipal Class Environmental Assessment, Bradford-West Gwillimbury, Ontario (2008-2010)**

Reviewed Official Plan policies and Conservation Authority policies with respect to their impact on wetland, floodplain and woodlots being affected by the proposed road widening of 8<sup>th</sup> Line and Dissette Street, Bradford. Consulted with the Conservation Authority and proposed a compensation strategy to deal with features lost, partially or entirely during construction. Attended a Public Information Centre, summarized public comments associated with land acquisitions, encroachment into a natural area and increased traffic and noise.

#### **GO Transit Hamilton to Niagara Rail Expansion Environmental Assessment, Ontario (2009-2011)**

Reviewed Official Plan policies for all municipalities along the proposed rail line route. Identified environmental and land use constraints in areas proposed for new GO transit rail stations as part of the Environmental Assessment for the proposed expansion.

#### **Rumble Pond Stormwater Management Pond Retrofits, Schedule B Municipal Class Environmental Assessment, Town of Richmond Hill, Ontario (2010-2011)**

Completed an Environmental Assessment to evaluate a number of alternatives associated with upgrades to a stormwater management pond. The preferred alternative included measures to improve passage for Redside Dace, an Endangered species which are known to be present in the area.

#### **Creemore Drainage Project File Report, Schedule B Municipal Class Environmental Assessment, Clearview Township, Ontario (2009-2010)**

Prepared an Environmental Assessment to identify and assess alternative solutions to improve drainage and resolve ongoing flooding issues in the Creemore Village Core as well as on lands designated for future development. The preferred solution was identified based on environmental impacts, effectiveness in managing flooding, economics and its consistency with the Official Plan.

#### **GO Transit Georgetown to Kitchener Rail Expansion Environmental Assessment, Ontario (2008-2009)**

Reviewed Official Plan policies for all municipalities along the proposed rail line route. Identified environmental and land use constraints in areas proposed for new GO transit train stations and layover sites.

#### **Policy Planning and Strategy Development**

#### **Comprehensive Review and Overhaul of Barbados' Groundwater Protection Zoning Policy and System, Barbados (2007-Present)**

Reviewed zoning bylaws, land use restrictions and incentive programs designed to protect groundwater resources in 4 jurisdictions including the Regional Municipality of Waterloo; Miami-Dade County, Florida; the US Virgin Islands; and the State of Western Australia. Analyzed policies for their relevance and applicability to environmental, economic and social conditions in Barbados. Recommended policies, including legal and incentive-based instruments that could be used by Barbados to protect groundwater resources.

#### **Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation Development, London, Ontario (2005-2006)**

Assisted with the incorporation of O.Reg. 97/04 – Development, Interference with Wetlands and Alterations to Shorelines and Watercourses into Upper Thames River Conservation Authority policies and guidelines. Included preparation of a submission for approval of the regulation by the Province of Ontario, public information documents and public consultation materials.

#### **Review and Updates to Ontario's Low Water Response Program, Peterborough, Ontario (2002-2003)**

Coordinated and facilitated a workshop to evaluate the success and challenges associated with the first version of Ontario's Low Water Response Program. Updated the program document to reflect new policies and clarify protocols. Coordinated posting of the program changes on Ontario's Environmental Bill of Rights Registry.

#### **Eco-Tourism and Park Planning Strategy, Cerro Blanco Protected Forest, Guayaquil, Ecuador (2001)**

Developed a park planning strategy to increase tourism potential for a 6,000 ha protected forest while protecting significant natural features and rare species. Identified locations for a new trail systems, butterfly garden, aviary and tourist accommodations as well as areas requiring environmental protection, restoration and enhancement.

## Profession

Terrestrial Ecologist

## Education

Bachelor of Environmental Studies,  
University of Waterloo, 2003

Memberships and Affiliations

Ontario Field Ornithologists (OFO)

American Birding Association (ABA)

Bird Studies Canada (BSC)

Nature Conservancy of Canada (NCC)

Hamilton Naturalists' Club (HNC)

## Employment Record

Terrestrial Ecologist, R.J. Burnside &  
Associates Limited (May 2013-Present)

Terrestrial Ecologist, Ecoplans (a  
member of MMM Group Ltd.) (March  
2009-May 2013)

Terrestrial Planning Ecologist,  
Conservation Halton (March 2008-  
March 2009)

Terrestrial Biologist, Natural Resource  
Solutions Inc. (NRSI) (September 2006-  
March 2008)

Environmental Technician, AMEC Earth  
& Environmental (January 2005-  
September 2006)

## Citizenship

Canadian

## Languages

English

## Hannah Maciver

Hannah Maciver is a terrestrial ecologist with over 8 years of experience in the ecological and environmental field. Prior to joining Burnside in May 2013, Hannah gained experience through public and private sector consulting in the following areas: field biology, terrestrial ecology with a focus on understanding and recommending the implementation of road ecology principles in transportation design, environmental policy review and application (municipal, provincial and federal), planning and permit applications, as well as Species at Risk (SAR) wildlife assessments in support of the Endangered Species Act (2007) and federal Species at Risk Act (SARA).

Hannah has also gained experience conducting Class Environmental Assessments, including the collection and review of background information, agency consultation, evaluation of route alternatives, and preparation of technical reports (including identification of potential impacts, protection of sensitive features and mitigation of effects).

Ms. Maciver has strong visual and auditory identification skills for surveying avifauna, herpetofauna, and mammals and is familiar with MNR species-specific Species at Risk survey protocols (e.g., Barn Swallow, Eastern Whip-poor-will, Bobolink/Eastern Meadowlark, Blanding's Turtle, Eastern Massasauga, American Badger), MNR Bat Maternity Colony Training protocols, as well as Bird Studies Canada Marsh Monitoring Program protocols, Ontario Breeding Bird Atlas Breeding Bird and Nocturnal Owl Survey protocols.

## Provincial Class Environmental Assessments

### Highway 400 Median Barrier Replacement, MTO, North of Canal Road to Innisfil Beach Road, Ontario (2012-2013)

Responsible for collection of background natural heritage data; conducting targeted Species at Risk surveys for Barn Swallow (nest inventory for over 30 culverts to be replaced or rehabilitated) and Eastern Meadowlark/Bobolink surveys. Providing photographic documentation and summary of findings, and ensuring compliance with MNR's Letter of Advice (Barn Swallow) on MTO projects.

### QEW Credit River Bridge Class EA and Preliminary Design, MTO, Mississauga, Ontario (2011-2012)

Conducted reptile surveys (hibernation/basking) including Northern Map Turtle, Eastern Milksnake; Species at Risk surveys; breeding bird surveys. Participated in consultation with review agencies, including Credit Valley Conservation Authority and MNR. Involved in evaluation of alternative designs and completion of Terrestrial Report.

### Highway 11/17 North Bay to Mattawa/Highway 17 Mattawa Route Planning Studies, Ministry of Transportation (MTO), North Bay, Ontario (2010-2013)

Responsible for collection of background natural heritage data; extensive agency consultation; conducting Species at Risk and wildlife assessments; working with engineering/ecology team on evaluation of alternative routes/corridors; input in to selection of Preferred Route; providing recommendations for wildlife passage; composition of Draft Terrestrial Impact Assessment Report (North Bay Route Planning Study).



#### **Highway 69, MTO, Parry Sound District, Ontario (2009-2013)**

Conducted turtle hibernation emergence, nesting and road mortality surveys. Conducted Species at Risk surveys and habitat assessments (including implementing Eastern Whip-poor-will survey protocols developed by MNR for Highway 69); breeding bird surveys; general wildlife assessments; and evaluation of excess material management areas (EMMA). Results of these surveys involved extensive documentation and liaison with MNR to ensure compliance with the ESA, 2007.

#### **Highway 401 Hespeler Road to Halton Region Class EA and Preliminary Design, MTO, Cambridge to Halton Region (2009-2011)**

Conducted wildlife habitat assessments; assisted in aquatic surveys. Assisted in completion of Terrestrial Impact Assessment Report.

#### **Highway 60 Twinning from Highway 11 to Highway 35 Preliminary Design Study, MTO, District of Muskoka, Ontario (2009-2011)**

Responsible for collection of background natural heritage data. Involved in agency consultation with respect to Species at Risk. Conducted turtle hibernation emergence, nesting and road mortality surveys; conducted Species at Risk surveys and habitat assessments and breeding bird surveys. Involved in evaluation of route alternatives and selection of Preferred Route. Provided recommendations for wildlife passage and reptile exclusion fencing. Completion of Terrestrial Impact Assessment Report.

### **Regional, Municipal and Private Sector Class Environmental Assessments/Environmental Impact Studies**

#### **Seaton Lands Investigative Report – Species at Risk, Pickering, Ontario (May 2013-Present)**

Conducted Species at Risk breeding bird surveys and wildlife habitat assessments. Currently co-ordinating the O.Reg. 176/13 process with the Client and MNR to ensure provincial compliance with Barn Swallow nest removal including identifying habitat compensation options, maintaining a mitigation and restoration record, conducting a 3 year monitoring program.

#### **Orb-Belfountain Caledon Country Club Environmental Impact Study, Belfountain, Ontario (May 2013-Present)**

Conducted breeding bird surveys and wildlife habitat assessments, including Species at Risk. Assisting with completion of EIS reporting, liaison with project staff and review agencies.

#### **North Leslie Environmental Impact Study, Mattamy Homes, Richmond Hill, Ontario (May 2013-Present)**

Conducted breeding bird surveys and wildlife habitat assessments, including Species at Risk. Currently coordinating the O.Reg. 176/13 process with the Client and MNR to ensure provincial compliance with presence of Eastern Meadowlark. Assisting with completion of EIS reporting.

#### **Lambda Site Development Environmental Impact Study, Puslinch (May 2013-August 2013)**

Conducted breeding bird surveys and wildlife habitat assessments, including Species at Risk. Assisted with completion of EIS reporting.

#### **Carson-Reid Homes Hillsburgh Site Species at Risk Permit, Hillsburgh (May 2013-August 2013)**

Conducted Species at Risk surveys for Eastern Meadowlark and Bobolink. Provided input in to interpretation of O.Reg. 176/13 with respect to presence of Bobolink confirmed on the property.

#### **Bayview Avenue Widening from Elgin Mills Road to Stouffville Road Municipal Class Environmental Assessment, Regional Municipality of York, Ontario (2012)**

Conducted targeted Species at Risk surveys for Eastern Meadowlark and Bobolink and provided input into avoidance measures given presence of Bobolink within the study area. Assisted in submission of MNR Information Gathering Form (IGF).

#### **Wellington Road 50 Widening Municipal Class Environmental Assessment, Wellington County, Ontario (2012)**

Conducted targeted Species at Risk surveys for Eastern Meadowlark and Bobolink and provided input into avoidance measures given presence of both species within the study area.

**Rideau Canal Multi-Use Crossing at Clegg and Fifth Avenue Environmental Assessment Study, City of Ottawa, Ontario (2011-2012)**

Conducted terrestrial field surveys, including breeding birds and herpetofauna. Participated in evaluation of alternatives, selection of Recommended Concept, completion of Natural Environment Impact Assessment Report.

**Mississauga BRT from Renforth Drive to Eglinton Avenue, GO Transit, a division of Metrolinx, Environmental Assessment and Preliminary Design, Ontario (2010-2011)**

Conducted terrestrial field surveys. Participated in evaluation of alternatives, selection of Preferred Route, input in to Terrestrial Impact Assessment Report.

**West Transitway Extension from Bayshore Station to Moodie Drive, Environmental Assessment and Preliminary Design Study, City of Ottawa, Ontario (2009)**

Conducted background natural heritage data review and terrestrial field surveys, input in to Terrestrial Impact Assessment Report.

**Environmental Inspection and Monitoring**

**Doon South Community Plan, Environmental Monitoring, City of Kitchener, Ontario (2009-2013)**

Conducted amphibian calling/road mortality surveys, including Jefferson Salamander monitoring (pitfall trapping/pond trapping, road mortality surveys), reptile coverboard surveys. Assisted in completion of reporting/documentation of existing conditions and findings.

**Cambridge West Master Environmental Servicing Plan (MESP), City of Cambridge, Ontario (2009-2012)**

Conducted targeted Species at Risk surveys including Jefferson Salamander (pitfall trapping/pond trapping), American Badger, reptile coverboard surveys; marsh bird monitoring, breeding bird surveys, turtle basking and hibernation surveys; amphibian call surveys; nocturnal owl monitoring. Assisted in completion of reporting/documentation of existing conditions and findings.

**North Waterloo Scoped Subwatershed Study, City of Waterloo, Ontario (2009-2012)**

Conducted targeted Species at Risk surveys including American Badger, reptile coverboard surveys; breeding bird surveys, turtle basking and hibernation surveys; nocturnal owl monitoring. Assisted in completion of reporting/documentation of existing conditions and findings.

**Greenough Harbour Community on Lake Huron, Species at Risk Monitoring, Bruce Peninsula, Ontario (2009-2011)**

Managed and conducted annual Eastern Massasauga monitoring and snake coverboard surveys. Responsible for agency consultation; successfully obtaining ESA Permit for EMR monitoring and coverboard surveys; managing community concerns and providing training materials for encountering SAR on private properties.

**Phase 1 & 2 Environmental Site Assessments, AMEC Earth & Environmental, Brantford, Ontario (2005-2006)**

Worked on a wide variety of private site developments conducting Phase 1 and 2 Environmental Site Assessments for brownfield remediation projects. Tasks included site inspections, supervising installation of monitoring wells and boreholes, and ground water and soil sampling.

**Contractor for Toyota Motor Manufacturing Canada (TMMC) Environmental Monitoring Program, AMEC Earth & Environmental, Cambridge, Ontario (2005-2006)**

Conducted storm water sampling and stack testing for TMMC as part of their company-wide environmental monitoring program to ensure compliance with environmental standards and practices.

**Canadian Wildlife Service Wood Thrush and Rose-breasted Grosbeak Studies – Monitoring Nesting Success in Kitchener-Waterloo, Ontario (2001)**

Searching for and recording nesting success during breeding bird season, including adult capture and banding using mist nets, banding nestlings. Data collected to assess effects of forest fragmentation and encroaching development on forest songbirds, including nest predation and Brown-headed Cowbird parasitism.

## Renewable Energy Projects

### **Whitesand First Nation Cogeneration and Pellet Mill Project, Armstrong, Thunder Bay District, Ontario (2013-Present)**

Whitesand First Nation is proposing to develop, construct and operate a biomass fueled electric power and heat cogeneration plant, and wood pellet facility, making it a Class 1 Thermal Facility under O.Reg. 359/09 of the Environmental Protection Act. Ms. Maciver conducted wildlife/terrestrial surveys as part the required component of the Natural Heritage Assessment Report that is to be submitted as part of the Renewable Energy Act (REA) for a Class 1 Thermal Facility. Tasks also included a records review and an evaluation of significance (i.e., Significant Wildlife Habitat under the MNR's Significant Wildlife Habitat Technical Guide) of field findings, and completion of a Draft Natural Heritage Assessment Report.

### **Prince Wind Energy Project Environmental Assessment, Brookfield Renewable Power, Sault Ste. Marie, Ontario (2006-2008)**

Conducted post-construction bat and avian mortality surveys at existing turbines; avian migration monitoring.

### **Other Wind Energy Projects Environmental Assessments, Ontario (2006-2008)**

Participated in smaller wind energy projects in Southern Ontario involving operation of bat radar, acoustic and weather instrumentation and software on behalf of wind farm proponents; analysis of post-field survey results to identify species and abundance.

## Advisory Services

### **Third Party Review on behalf of Walpole Island First Nation of Environmental Impact Statement for the Ambassador Bridge Enhancement Project (ABEP) prepared by Avalon Consulting Professionals of Ontario, Windsor, Ontario (2013)**

Provided advisory services to Walpole Island First Nation (WIFN) with respect to an Environmental Impact Statement for the Ambassador Bridge Enhancement Project. Reviewed and commented on the EIS and associated documents to ensure that studies conducted as part of this project were adequate to address issues considered significant to WIFN traditional rights and territories.

### **Peer Review of Simcoe Kathryn Estates Scoped Environmental Impact Study, Town of Bradford West Gwillimbury, Ontario (2013)**

Provided advisory services to the Town of Bradford West Gwillimbury with respect to a Scoped Environmental Impact Study for a proposed subdivision. Reviewed and commented on the EIS to ensure that the proposed development is consistent with natural heritage policies of the Town of Bradford West Gwillimbury Official Plan.



## Profession

Environmental Technologist

## Education

Environmental Technologist, Sir Sandford Fleming College, School of Natural Resources, 2002

Forestry Technician, Sir Sandford Fleming College, School of Natural Resources, 2000

## Certificates

Ecological Land Classification for Southern Ontario, 2011

Ontario Wetland Evaluation System, 2011

Butternut Health Assessor, 2010, Revised 2013

## Employment Record

Environmental Technologist, R.J. Burnside & Associates Limited (2009-Present)

Environmental Technologist, AMEC Earth & Environmental, Mississauga, Ontario (2003-2009)

Environmental Specialist (Secondment), Toyota Motor Manufacturing Canada, Cambridge, Ontario (2004)

Forestry Technician, Grand River Conservation Authority, Cambridge, Ontario (1999-2002)

## Citizenship

Canadian

## Languages

English

## Dominique Evans

Dominique Evans has been responsible for the collection, management and analysis of a broad range of environmental data associated with various project assignments. These projects have included infrastructure development in municipal sectors, mining, transportation and industrial power as well as natural resource based studies. Undertakings have involved technical support with and application of: the Forest Ecosystems Classification (FEC) and Ecological Land Classification (ELC) as well as, air photo interpretation and, database management and maintenance. Ms. Evans has also been involved with the coordination of public awareness meetings, Rural Water Quality Programs and land owner liaison, forest inventory, planting survival census, and tree planting restoration planning and programs.

Dominique has been involved in various aspects of natural resource inventory for over the past 10 years. This has principally included the inventory of terrestrial resources through the application of the Ecological Land Classification. Responsibilities included the air photo interpretation of vegetation units, the assessment of units including field identification of vegetation communities, stand delineation, field inventory records, database management, and mapping. She is also conversant with the FEC, providing support to senior ecologists in field inventory programs and management of resulting databases.

Ms. Evans has been involved in the critical aspects of database management. Her responsibilities have included the organization of field data, the creation of appropriate databases, management and maintenance of the databases and quality assurance / quality control. The database management has also involved the integration with Geographic Information Systems (GIS) in order to efficiently apply the inventory data for assessment and graphic representation. Dominique is familiar with ArcView for such GIS applications.

## Environmental Impact Studies

### The Faith Mission Scoped Environmental Impact Study, Milton, Ontario (2012-Ongoing)

Completed Ecological Land Classification and wetland delineation for a Scoped Environmental Impact Study for a proposed building expansion and new septic bed design liaising with staff from the Town, Conservation Authority, Region and The Faith Mission to ensure that all appropriate policies are met.

### Winifred Woods Trail Environmental Impact Study, City of Kitchener, Ontario (2011-2012)

Coordinated Ecological Land Classification, breeding bird surveys and wetland delineations for an Environmental Impact Study of a proposed trail joining the Pioneer Park subdivision with the Walter Bean Trail through the Winifred Woods Environmentally Sensitive Policy Area. The trail traversed lands owned by the City of Kitchener and Grand River Conservation Authority ("GRCA") and included a number of Significant Wildlife Habitats and natural hazard lands. Various trail routes and trail designs were assessed. Undertook negotiations with the GRCA regarding portions of the trail on their lands.

## **Preliminary Environmental Constraints Analysis of the Proposed YMCA Cedar Glen Camp Expansion and Redevelopment, King Township, Ontario (2010- 2012)**

The YMCA was interested in preparing a Master Plan for the Cedar Glen camp to plan future expansion and redevelopment of the site. Aided in the identification all applicable natural heritage policies and potential development constraints associated with the Natural Heritage System of the Greenbelt Plan and Natural Linkage policies of the Oak Ridges Moraine Conservation Plan. Identified and recommended future study and work requirements in order to move the development forward.

## **Environmental Assessment and Database Management / Geographic Information Systems**

### **Municipal Class Environmental Assessment (Schedule B) for Mono Sideroad 7 culvert replacement, Town of Mono, Orangeville, Ontario (Ongoing)**

Assisted with the completion of the environmental, and approvals and permitting processes associated with the design and construction of the Mono Sideroad 7 culvert replacement.

### **Municipal Class Environmental Assessment, Schedule B for the Niska Road and Bridge Improvements, City of Guelph, Ontario (2013-Ongoing)**

Terrestrial environment lead responsible for managing field efforts including review of background documents, coordination of environmental field studies, well also assisting in the facilitation of public consultation and coordination of studies by environmental sub consultants.

### **GO Transit Class Environmental Assessment, Group B for the Proposed Expansion of the Stouffville Rail Corridor, GO Transit, Ontario (2012-Ongoing)**

EA Lead currently managing EA efforts including public consultation, liason with GO Transit project staff and review agencies, inventories of the existing natural, social and economic environmental conditions within the study area and studies by environmental sub consultants (cultural heritage, archaeology, air quality, and noise/vibration).

### **Municipal Class Environmental Assessment, Schedule B for the Streetsville Watermain Improvements, Region of Peel, Ontario (2012-Ongoing)**

Responsibilities included assisting the EA Coordinator with efforts including preparation of public consultation materials, liaison with Region staff and coordination of studies by environmental sub consultants and writing of Project File Report (PFR).

### **Municipal Class Environmental Assessment, Schedule B for the Gore Road Widening (Patterson Sideroad to Highway 9), Region of Peel, Ontario (2011-Ongoing)**

EA Coordinator responsible for managing EA efforts including preparation of public consultation materials, liaison with Region staff and review agencies and coordination of studies by environmental sub consultants. Primary author of the PFR.

### **Municipal Class Environmental Assessment Addendum (Schedule C) for County Road 90 Improvements, County of Simcoe, Midhurst, Ontario (2011-2012)**

Aided the Environmental Assessment co-coordinator with the preparation of the EA Addendum report. Ms. Evans completed the Ecological Land Classification for the proposed improvements.

### **GO Transit Class Environmental Assessment, Group B for the Proposed Rail Expansion from Hamilton to Niagara Region, GO Transit, Ontario (2009-2011)**

EA Coordinator responsible for managing EA efforts including public consultation, inventories of the existing natural, social and economic environmental conditions within the study area, and studies by environmental sub consultants.

### **Erosion and Aquatic Assessment, Upper Rouge River and Beaver Creek, Town of Richmond Hill, Ontario (2010-2011)**

Preparation of mapping of site and baseline study data using ArcView GIS. Involved in mapping various levels of watershed delineation, aquatic erosion areas and field survey data,

### **Municipal Class Environmental Assessment (Schedule B) for South Arterial Road, County of Dufferin, Ontario (2010-2011)**

Aided the Environmental Assessment co-coordinator with the preparation of the Project file Report (MEA 2000, as amended 2007) for the proposed extension of the South Arterial Road.

**Municipal Class Environmental Assessment (Schedule B) for 27th Sideroad Structure, Town of Halton Hills, Ontario (2009-2011)**

Assisted the Environmental Assessment co-coordinator with the finalization of the Project File Report for the proposed improvements to the 27th Sideroad Structure.

**Master Servicing Plan, Town of Beeton, Ontario (2009-2011)**

Assisted the Project Manager in the completion of the Master Servicing Plan (MSP) for water, wastewater, transportation and storm water management.

**Master Servicing Study for Planned Service Area, Town of Bradford West Gwillimbury, Ontario (2009-2011)**

Assisted the Project coordinator with the Bradford West Gwillimbury Master Servicing Study (MSS) for water distribution and sewage collection. Serviced lands will require appropriate connection to the Town's existing sanitary sewer and water supply system (the Town is considering the optimal design and location for these facilities).

**Walter Bean Trail and Pedestrian Footbridge Design and Approvals, City of Kitchener, Ontario (2009-2011)**

Assisted with the completion of the environmental, and approvals and permitting processes associated with the design and construction of the Walter Bean Trail and Pedestrian Footbridge over the Grand River in Kitchener. Facilitated and organized public consultation regarding the construction of the Project. Responsible for coordinating the agency consultation and completing the Public Information Centre Summary Report for the project.

**Erosion and Aquatic Assessment, German Mills Creek, Town of Richmond Hill, Ontario (2009-2010)**

Assisted the Aquatic Resources with the erosion and aquatic conditions assessment for 10 km of German Mills Creek. Assisted in identifying areas of erosion that may cause impacts to municipal infrastructure, public and private land. Collected information was used to determine a level of potential hazard.

**GO Transit Class Environmental Assessment, Group B for the Proposed Rail Expansion from Georgetown to Kitchener, GO Transit, Ontario (2009-2010)**

Environmental Assessment Support - Assisted with the Public Information Centre's (PIC), and finalization of reporting.

**Municipal Class Environmental Assessment, Schedule B for the Creemore Sewage Treatment Plant Equalization Tank, Clearview Township, Ontario (2009-2010)**

Assisted the EA Coordinator, while being responsible for the public consultation program, communications with stakeholders, and coordination of sub-consultants.

**Victor Diamond EA / Baseline Study, DeBeers Canada, Attawapiskat, Ontario (2003-2009)**

Preparation of mapping of site and baseline study data using ArcView GIS. Utilized GIS for radio collared caribou tracking and monitoring. Involved with mapping of Important Bird Areas for the James Bay Region, muskeg monitoring well location mapping, noise monitoring mapping, site plan analysis and various levels of watershed delineation. Also provided support for environmental permits and approval applications with appropriate graphics.

**Energy Projects and Renewable Energy Approvals for Renewable Energy**

**Grand Bend Wind Farm 100 MW Renewable Energy Approval, Northland Power Inc., Grand Bend, Ontario (2011-Ongoing)**

Using aerial photography, Ontario Base mapping and other publicly available data Ms. Evans assisted in the delineation of vegetation units for preliminary reporting and field program development. Once Ms. Evans completed the field observations, the data was summarized as per ELC methodology, transposed for GIS application and queried using ArcView Spatial Analyst. Ms. Evans also assisted in the completion of fieldwork related to Species of Concern including Bat Maternity Colony Habitat Surveys and preparation of documentation for all components of the Natural Heritage Assessment portion of the Renewable Energy Approval as well as Consultation Plan Reporting. Attended Public Information Centre's, as well as First Nation Community meetings to answer questions about the project and its potential impacts on the environment with local landowners.

**Festival Hydro Transformer Station Class Environmental Assessment for Minor Transmission Facilities, Stratford, Ontario (2010-2011)**

Assisted in the preparation a Class EA for a new transformer station in the City of Stratford. Conducted all required public notifications and assessments potential impacts associated with noise, construction and operation of the facility.



## Profession

Terrestrial Ecologist

## Education

Environmental Management Post Degree (EMPD), Dean's Honor List, Niagara College, Centre for Environmental Training, St. Catherine's, Ontario, 1997

Bachelor of Arts: College of Social Science - Geography and Environmental Science, University of Guelph, 1996

## Employment Record

Terrestrial Ecologist, R.J. Burnside & Associates Limited (2013-Present)

Terrestrial Ecologist/Project Manager, Golder Associates Ltd., Mississauga, Ontario (2004 to 2013)

Terrestrial Ecologist – Project Manager, ESG International-Stantec Consulting Ltd, Guelph, Ontario (June 2002-August 2004)

Natural Heritage Ecologist, Credit Valley Conservation, Mississauga, Ontario (July 1997-June 2002)

Environmental Youth Corps Supervisor, Town of Caledon, Caledon, Ontario (Summers 1993-1996)

## Citizenship

Canadian

## Languages

English

## Nicholle Smith, B.A., EMPD

Nicholle Smith, B.A., EMPD is an Ecologist and Project Manager with over 15 years of experience in both the public and private sectors. The first 5 years of her career were spent in the public sector as a Natural Heritage Ecologist at Credit Valley Conservation and the remainder of her career has been spent in consulting. Nicholle has extensive knowledge of the policies applicable to her area of expertise including local, municipal and regional planning policies within the Ontario multi-tier system, including the Provincial Policy Statement and Planning Act.

Nicholle has completed a number of Subwatershed and Settlement and Servicing Master Plans as well as numerous Environmental Impact Statements, Environmental Implementation Reports, Natural Heritage evaluations within the Oak Ridges Moraine Planning area and Greenbelt Planning area and Level 1 and 2 Natural Environment Reports for applications under the Aggregate Resources Act. She has been a member on the Ontario Stone, Sand and Gravel Land Use and Rehabilitation committees over the past 9 years. In addition, she has acted as the terrestrial ecology lead on several Environmental Assessments under the Canadian Environmental Assessment Act over the past 5 years. Nicholle was part of the pilot project team that developed the field methodologies for the Ecological Land Classification System for Southern Ontario and is certified by OMNR to complete Wetland Evaluations.

Nicholle's field skills include both floral and faunal inventories and natural community classification and delineation and mapping. More recently Nicholle has had specific experience with the Endangered Species Act permit application and approvals process, including field surveys and compliance applications.

## Project Experience

### Terrestrial Ecologist/Project Manager (2004-2013)

Project Manager and component lead for projects ranging from \$5,000 to \$500,000 in the land development, aggregate, manufacturing, mining, energy and oil and gas sectors, including all levels of project development and management from proposal to submission and approvals. Management and participation in large multi disciplinary projects including biosciences, hydrology, hydrogeology, atmosphere and cultural sciences.

Extensive knowledge of land use, development and natural heritage policies at the local, regional, municipal, provincial and national levels. Application of these policies to guide development proposals, impact assessment, mitigation plans and monitoring programs.

Lead staff member responsible for preparation of Environmental Impact Studies related to private and public sector land development applications, Level 1 and 2 Natural Environment reports for the aggregate industry and terrestrial and aquatic ecology portions of Environmental Assessments for the energy industry, including wind, solar, nuclear, oil and gas, biomass and gas fuelled generating projects.

Species at Risk screenings and assessments for existing and proposed development sites. Including background review, agency liaison, data analysis and assessment for habitat potential. Habitat mapping for individual sites, large scale projects and corridors. Species specific field data collection for

various SAR. Creation of site specific mitigation plans for development sites and corridors.

Creation of rehabilitation plans for development and aggregate sites and enhancement plans for residential and commercial development sites in numerous watersheds in southern Ontario. Coordination and implementation of terrestrial inventories and vegetation community classifications as related to biophysical inventories and broad-scale land use studies.

Preparation of data for and briefing of Principals and Associates for OMB hearings related to projects listed above. Development of presentation materials for public open houses and PICs. Representation at open houses for development and energy sector projects. Representation on industry specific committees for the aggregate industry including members from the private and consulting sectors.

Development and implementation of project specific technical procedures, specific work instructions and health and safety plans. Work under both general Golder confidentiality agreements and project-specific or client specific agreements.

#### **Terrestrial Ecologist/Project Manager (June 2002-August 2004)**

Responsible for management and delivery of Environmental Impact Studies, Environmental Implications Reports, Level 1 and 2 Ecological Studies, and peer reviews for development applications, aggregate resource extraction expansions and new applications. Development and completion of terrestrial monitoring programs (post construction) for areas falling within the Oak Ridges Moraine planning area, the Greenbelt and various local and regional planning jurisdictions. Terrestrial field data collection including wetland evaluations, botanical inventories, Ecological Land Classification, wildlife habitat use assessments and inventories including deer wintering surveys, amphibian call count surveys, salamander sampling and monitoring, raptor surveys and breeding bird data collection. Co-management of aggregate sector including chairing meetings. Membership in OSSGA (APAO) and production of promotional materials.

#### **Natural Heritage Ecologist (July 1997-June 2002)**

Key member of pilot project for the Ecological Land Classification System for Southern Ontario (ELC), including development of field protocol and manual. Terrestrial field data collection, analysis and database management and design for 8 Subwatershed Studies and 3 Settlement and Servicing Master Plans. Authored or co-authored natural heritage sections of aforementioned subwatershed studies and SSMPs. Key participant in the development and authoring of the CVC Natural Heritage Strategy. Development and completion of Species of Conservation Concern and Species of Interest projects for flora and fauna within the watershed and the Region of Peel. Management of amphibian monitoring programs and coordination of volunteer wildlife monitoring throughout watershed. Community level ELC and watercourse classification mapping of the watershed including air photo interpretation, image transfer and GIS. Analysis of watershed scale mapping for corridors and examining opportunities for linkages and enhancement throughout the watershed. Training and supervision of University of Toronto interns and summer field staff for four years. Development and production of materials and presentation of findings at subwatershed study open houses. Landowner contact for natural heritage component of subwatershed studies, including production of information packages of data collected on individual properties as part of subwatershed studies. Volunteered for electrofishing days and various community events and festivals throughout watershed, including the Peel Children's groundwater festival.

#### **Additional Training and Certifications**

St. Johns Ambulance, First Aid and CPR Certification, 2011

Golder U – Project Management, Health and Safety I, II and III, Project Accounting, Liability and Contracts, BST training, 2004-2011

Golder Ecology Field Camp, 2012

Surface Miner Training, 2003

PSMJ, Project Management Training, 2003

OMNR Southern Ontario Wetland Evaluation Course, 2001

Advanced Microsoft Access Training, Sheridan College, 2000

Soils and Silviculture Course, Williams Forestry, 1999

Monitoring Ecosystems Protocols, Ecological Monitoring and Assessment Network (EMAN), 1998

OMNR Ecological Land Classification Site Assessment and Community Classification Training, 1997

# Habitat Use Survey by Northern Bioscience Ecological Consulting





# Species at Risk Habitat Use Survey

Whitesand First Nation Cogeneration and Pellet Mill Project



July 15, 2014

**Prepared for:**

Craig Tose  
The Whitesand First Nation  
PO Box 68  
Armstrong, ON  
P0T 1A0

**Prepared by:**

Dr. Robert F. Foster  
Northern Bioscience  
363 Van Horne Street  
Thunder Bay, Ontario  
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## 1 INTRODUCTION

The Sagatay Cogeneration Limited Partnership has proposed the Whitesand First Nation Cogeneration and Pellet Mill Project approximately 2 km southeast of Armstrong, Ontario (Figure 1). The draft Natural Heritage Assessment (Neegan Burnside 2013) recommended that habitat use surveys for Eastern Wood-pewee (*Contopus virens*) and Olive-sided Flycatcher (*Contopus cooperi*) be conducted at the project sites and adjacent lands. These two species were observed near the project site during 2013 fieldwork, albeit outside the breeding season and near ponds outside the current 120 m buffer for the project. Both species are listed as Special Concern under Ontario's Endangered Species Act (2007). The Eastern Wood-pewee was also assessed as Special Concern federally, and the Olive-sided Flycatcher was assessed as nationally Threatened by the federal Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Northern Bioscience was engaged in 2014 by the Whitesand First Nation to conduct habitat use surveys for these two Species at Risk (SAR) on the proposed Project site to confirm the significance of habitat for species of conservation concern



Figure 1. General location of proposed Project (Neegan Burnside 2013b).

## 2 METHODS

As recommended in the draft Natural Heritage Assessment, the field survey generally followed approaches outlined in *Birds and Bird Habitats: Guidelines for Wind Power Projects* (OMNR 2011) and used methodology consistent with those used for the 2001-2005 Atlas of the Breeding Birds of Ontario (Cadman et al. 2007). A total of 17 point counts were conducted between 5:45 and 8:30 am on June 9 and June 28, 2014. As in the Breeding Bird Atlas, point counts were of 5 minutes duration with all birds heard or seen at distances of <50m, 50-100m, and >100 m were recorded. During each visit, stations were located approximately 250 m apart to prevent double-counting of individual birds. Any birds observed during travel between stations were also noted. Weather conditions were cloudy, 10°C, with no wind (Beaufort 0) and intermittent drizzle on June 9 (Stations 1-7) and 13-15°C, with 100% cloud cover and light breeze (Beaufort 1-2) during the second survey. All point counts were conducted by R. Foster, who has approximately 20 years experience conducting bird surveys in northwestern Ontario. The survey had to be prematurely discontinued on June 9 due to a bear incident, and a second observer (Therin Rhaintre) accompanied R. Foster on June 26 for safety purposes.



Figure 2. Location of point counts during species at risk survey.

### 3 RESULTS AND DISCUSSION

A total of 175 birds of thirty species were observed on or near the project site (Table 1). The most common species observed were White-throated Sparrows, Nashville Warblers, Hermit Thrushes, and Chesnut-sided Warblers. Species observed were generally typical species found in coniferous or mixedwood habitats in northwestern Ontario. No Eastern Wood-pewee, Olive-sided Flycatcher or other bird SAR were observed during the 2014 surveys on the Project site or adjacent lands.

**Table 1. Number of birds observed by species at each of 17 point counts conducted at or near the Project site.**

Species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
Alder Flycatcher	3	1	1	1	2	1	1			1	1			1				13
American Crow									1									1
American Robin		1																1
Black and White Warbler			1															1
Cedar Waxwing								1	1	1	1							4
Chestnut-sided Warbler	1			2	1		2	1				1				1	1	10
Chipping Sparrow	1	1	1	1	1		2											7
Clay-coloured Sparrow															1	1		2
Dark-eye Junco								1							1		1	3
Hermit Thrush									1	1	1	2		1		2	2	10
Least Flycatcher								1					2			3	2	8
Lincon Sparrow		1	1				1											3
Magnolia Warbler			1	1	2	1	1			1								7
Mourning Warbler					1	1	1	1	2	1	1				1			9
Nashville Warbler	1	2	2	1	2	1	1	2	1		1	1			1		1	17
Northern Flicker								1	1			1		1			3	7
Ovenird												1						1
Palm Warbler		1				2												3
Philadelphia Vireo					1													1
Pileated Woodpecker							1											1
Red-breasted Nuthatch						1												1
Red-eyed Vireo			1			1	1		2	1			1	1	2		1	11
Ring-necked Duck															3			3
Rub-crowned Kinglet												1						1
Ruffed Grouse				1						1								2
Swainson's Thrush	1							1										2
Veery		1																1
White-throated Sparrow	3	4	2	2	4	3	2	3	3		2	2	2	1	1	1	3	38
Winter Wren			1				1			1	1	1						5
Yellow-rumped Warbler				1			1											2
<b>TOTAL</b>	<b>10</b>	<b>12</b>	<b>11</b>	<b>10</b>	<b>14</b>	<b>11</b>	<b>15</b>	<b>12</b>	<b>12</b>	<b>8</b>	<b>8</b>	<b>10</b>	<b>5</b>	<b>5</b>	<b>10</b>	<b>8</b>	<b>14</b>	<b>175</b>



General mitigation measures identified in the draft Natural Heritage Report (Neegan Burnside 2013a), such as conducting vegetation clearing outside the breeding season, should be conducted for the Project. However, no additional post-construction monitoring for these two species is proposed given the lack of documented use of the project site or adjacent lands (i.e., within 120 m).

Pellets of woodland caribou (*Rangifer tarandus*) were observed at 354757E 5571666N (NAD83, Zone UTM Zone 16) along a former forest access road approximately 270 m east of the project sties (Figure 3). As discussed in the draft Natural Heritage Report (Neegan Burnside 2013a), this area is considered Category 3 woodland caribou habitat, which is the least sensitive to development. This area is dominated by regenerating jack pine and trembling aspen forest, that supports alternate prey (i.e., moose) and predators such as black bear and gray wolf. In addition, its close proximity (< 2 km) to the community of Armstrong and heavily disturbed condition (e.g., numerous linear disturbances) suggest that is not critical habitat for woodland caribou, and that negative effects on woodland caribou habitat can likely be addressed through appropriate mitigation.



**Figure 3. Woodland caribou pellets observed along former forest access road to the east of the Project site.**

#### **4 LITERATURE CITED**

Cadman, M.D., D.A. Sutherland, G.> Beck, D. Lepage, and A.R. Couturier (eds). 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706 pp.

Neegan Burnside. 2013a. Draft Natural Heritage Assessment: Whitesand First Nation Cogeneration and Pellet Mill Project, Sagatay Cogeneration LP. December, 2013. 92 p.



Neegan Burnside. 2013a. Draft Project Description Report: Whitesand First Nation Cogeneration and Pellet Mill Project, Sagatay Cogeneration LP. June 2013. 48 p.

Ontario Ministry of Natural Resources (OMNR). 2011. Birds and Bird Habitats: Guidelines for Wind Power Projects. Queens Printer for Ontario. 34 p.

# MNR Confirmation



Ministry of Natural Resources  
and ForestryMinistère des Richesses naturelles  
et des ForêtsTel: 807- 475-1471  
Fax: 807- 475-1527

October 8, 2014

Chief Allan Gustafson  
Sagatay Economic Development LP  
4A Whitesand Road  
P.O. Box 68  
Armstrong, Ontario  
P0T 1A0

Dear Chief Gustafson:

RE: Natural Heritage Assessment Confirmation for the Whitesand First Nation Cogeneration and Pellet Mill Project

In accordance with the Ministry of the Environment and Climate Change (MOECC) Renewable Energy Approvals (REA) Regulation (O.Reg.359/09), the Ministry of Natural Resources and Forestry (MNRF) has reviewed the Whitesand First Nation Cogeneration and Pellet Mill Project Natural Heritage Assessment, dated August 2014 and submitted by Neegan Burnside Ltd. on September 12, 2014.

In accordance with Section 28(2) and 38(2)(b) of the REA regulation, MNRF provides the following confirmations as a result of our review of the natural heritage assessment:

1. that determination of the existence of natural features and the boundaries of natural features was made using applicable evaluation criteria or procedures set out in the Natural Heritage Assessment Guide for Renewable Energy Projects, Second Edition November 2012
2. that the evaluation of the significance or provincial significance of the natural features was conducted using applicable evaluation criteria or procedures set out in the Natural Heritage Assessment Guide for Renewable Energy Projects, Second Edition November 2012
3. that the project location is not in a provincial park or conservation reserve
4. that the environmental impact assessment report has been prepared in accordance with the Natural Heritage Assessment Guide for Renewable Energy Projects, Second Edition November 2012

In accordance with Section 28(3)(c) and 38(2)(c) of the REA regulation the MNRF also offers the following comments in respect of the project:

MNRF is providing this confirmation letter based on the review of the information provided in your natural heritage assessment reports. This confirmation letter is valid for the project as proposed in the natural heritage assessment and environmental impact study. Should any changes be made to the proposed project that would alter the natural heritage assessment, MNRF may need to undertake additional review of the natural heritage assessment.



Where specific commitments have been made by the applicant in the natural heritage assessment with respect to project design, construction, rehabilitation, operation, mitigation, or monitoring, MNRF expects that these commitments will be considered in the MOECC Renewable Energy Approval decision and, if approved, be implemented by the applicant.

This confirmation does not address any requirements and authorizations that may be required under the *Endangered Species Act, 2007*.

In accordance with section 28(3) and 38(2) of the Renewable Energy Approvals Regulation, this letter must be included as part of your application submitted to the MOECC for a Renewable Energy Approval.

If you wish to discuss any part of this confirmation or additional comments provided, please contact Jeff Black, Management Biologist at 807-475-1452 or email: [jeff.black@ontario.ca](mailto:jeff.black@ontario.ca).

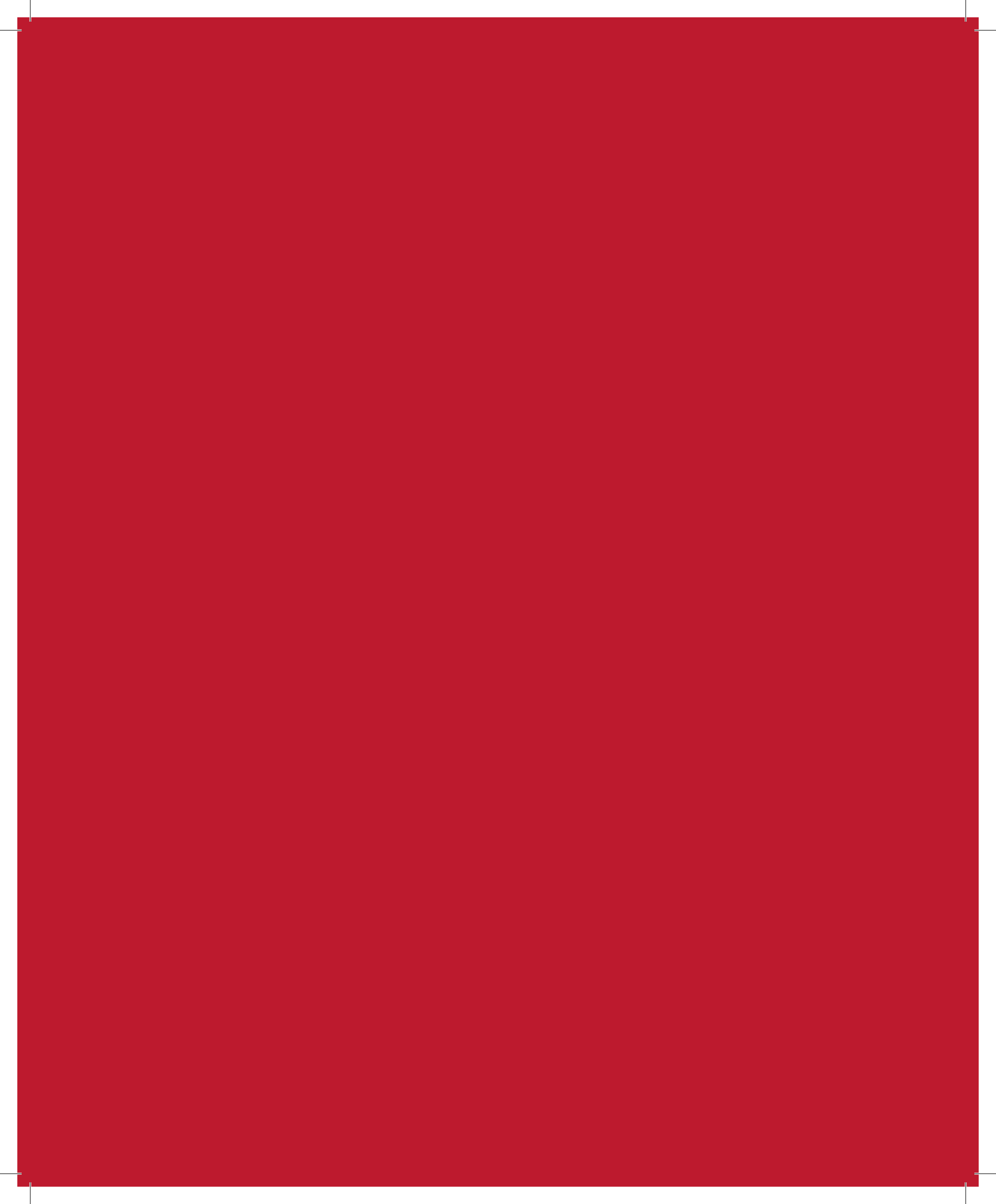
Sincerely,



Frank Miklas  
District Manager  
Thunder Bay District Office

cc. Emily Hawkins, NWR Renewable Energy Coordinator, MNRF  
Craig Tose, Sagatay Economic Development LP  
Chris Shilton, Neegan Burnside Ltd.







Neegan Burnside Ltd.