



Muncaster
Environmental
Planning



Thomas Phillips
7301 Flewellyn Road
Stittsville

December 6, 2023

DETERMINATION OF WETLAND BOUNDARY GOULBOURN WETLAND COMPLEX PROVINCIALLY SIGNIFICANT WETLAND: Part of Lot 14 and 15, Concession 9, City of Ottawa (7301 Flewellyn Road)

As requested by Thomas Phillips the determination of the wetland boundary was conducted at Part of Lot 14 and 15, Concession 9, City of Ottawa (7301 Flewellyn Road). The purpose of this study was to determine the soil moisture regime for lands in question and to delineate the wetland boundary (Figure 1). The wetland in question currently forms part of the Goulbourn Wetland Complex Provincially Significant Wetland.

METHODOLOGY

Soil sampling and analysis followed the methods described in the Field Manual for Describing Soils in Ontario, 4th Edition (OCSRE 1993) which is the method utilized by the Ecological Land Classification for Southern Ontario (Lee et al. 1998).

Upland vegetation communities were described utilising the Ecological Land Classification Southern Manual (Lee et al. 1998), while wetland communities if present were delineated and described utilising the Ontario Wetland Evaluation System Southern Manual (MNR 2022).

The soil samples and wetland delineation as per OWES were collected/determined on October 20, 2023 through field work completed by BCH Environmental Consulting Inc. (S.St.Pierre & C. Fontaine) and through consultation with Muncaster Environmental Planning Inc. (B. Muncaster). Staff qualifications are available in Appendix B.

RESULTS

As observed within the City's mapping tool, imagery from 1999 seems to indicate that the system was backed up by beaver dams, this was also corroborated by the proponent. Removal of the beaver dam and dredging of the creek appear to have occurred by 2002, which has significantly reduced the amount of water within the site.

Dredging, channelization and the removal of beaver dams appear to be contributing to the lowering of the water table. This system now drains very rapidly.

Coniferous Forest (FOC)

This community was present just north of the wetland. This community was dominated by coniferous trees with deciduous trees being present. Species observed include white cedar, trembling aspen, white spruce and tamarack. Portions of this community contained solely white cedar.



Soils analysis determined the moisture regime within portions of the forest to be Moderately Dry (0), which may be a function of the bedrock being so close to the surface. The Ontario Wetland Evaluation System (OMNR 2022) classifies wetlands as those areas with hydric soils, which have a Moisture Regime of 6 or higher, and nearly hydric soils which have a Moisture Regime of 5. Under this classification this forest did not contain hydric or nearly hydric soil, which under the Ontario Wetland Evaluation System would not be considered wetlands.

The presence of tamarack within this forest could potentially be remnant from before drain improvements were completed (removal of beaver dams and dredging), and/or a function of the shallow soil and bedrock.



Photo 1: Coniferous Forest (October 20, 2023)



Photo 2: Coniferous Forest (October 20, 2023)

Tall Shrub Swamp (ts)

This community is present along Flewellyn Road. This wetland presented two forms: tall shrub (glossy buckthorn) and dead deciduous tree. This wetland does not represent fish habitat and turtle habitat is fairly unlikely as surface water wasn't present and shrub cover limits basking opportunity. Fish and turtle habitat would be limited to the dredged creek.

Soils analysis determined the moisture regime within the marsh to be Moist (5) (two soil sites were located within this community). The Ontario Wetland Evaluation System (OMNR 2014) classifies wetlands as those areas with hydric soils, which have a Moisture Regime of 6 or higher, and nearly hydric soils which have a Moisture Regime of 5. Under this classification this marsh did contain hydric or nearly hydric soil, which under the Ontario Wetland Evaluation System would be considered wetlands.



Photo 3: Tall Shrub Swamp (October 20, 2023)

Robust Emergent Marsh (re)

This community is present along the access road to the west. This wetland presented two forms: robust emergent (cattails) and herbaceous (spotted joe-pye-weed, purple loosestrife and grass-leaved goldenrod). This wetland does not represent fish habitat and turtle habitat is fairly unlikely as surface water wasn't present and cover limits basking opportunity. As this community is not hydraulically connected to the Tall Shrub Swamp, and is very small, it will not be included in the PSW.



Photo 4: Robust Emergent Marsh (October 20, 2023)



DISCUSSION

The wetland was delineated within this portion of the site by utilising the soil information and other physical characteristics present (see figure 1). It is the opinion of BCH Environmental Consulting Inc. and Muncaster Environmental Planning Inc. that the provincially significant wetland boundary be updated, and the result forwarded to MRNF.

Thank you for the opportunity to work with you should you have any questions or comments please do not hesitate to contact me at 613.571.8883 or shaun@bchenviro.ca

A handwritten signature in black ink, appearing to read "Shaun St. Pierre".

Shaun St.Pierre, B.Sc. Biology

BCH Environmental Consulting Inc.

A handwritten signature in black ink, appearing to read "Bernie Muncaster".

Bernie Muncaster, M.Sc.

Muncaster Environmental Planning Inc.



REFERENCES

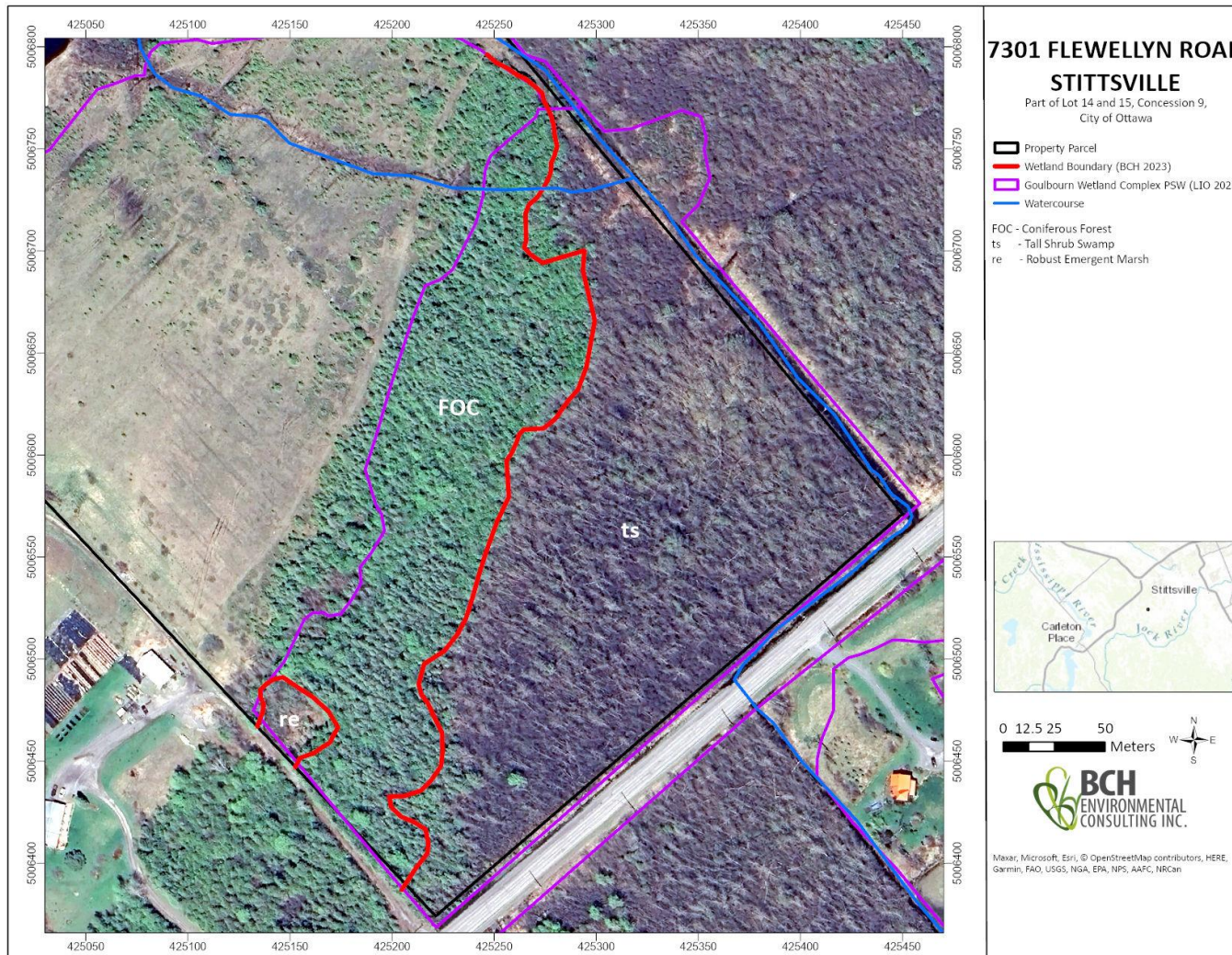
Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCS Field Guide FG-02

Ontario Centre for Soil Resource Evaluation (OCSRE). 1993. Field Manual for Describing Soils in Ontario. 4th Edition. Ontario Centre for Soil Resource Evaluation. Publication No. 93-1.

Ontario Ministry of Natural Resources (OMNR). 2022. Ontario Wetland Evaluation System: Southern Manual.



Figure 1





Appendix A: Soil Samples (Effective Layer Highlighted)

SITE	SAMPLE DEPTH (cm)	DEPTH TO WATER (cm)	DEPTH TO MOTTLING (cm)	DEPTH TO GLEY (cm)	HORIZON	DEPTH OF HORIZON	SOIL TYPE	MOISTURE REGIME	SOIL DRAINAGE
1	65	29	40	N/A	A	0	Loam	Moist (5)	Imperfect/Poor
					B	32	Very Fine Sandy Clay Loam		
2	20	N/A	N/A	N/A	A	0	Silt Loam	Moderate Dry (0)	Rapid
3	14	12	N/A	N/A	A	0	Silt Loam	Moist (5)	Imperfect/Poor



APPENDIX B: QUALIFICATIONS

SHAUN M. ST.PIERRE, B.Sc. Biology

EDUCATION

B.Sc. Biology, Trent University 2007

Fisheries and Wildlife Technology, Frost Campus, Sir Sandford Fleming College, 2005

Fisheries and Wildlife Technician, Frost Campus, Sir Sandford Fleming College, 2004

LANGUAGES

Fluent in French and English

POSITIONS HELD

2018 - : BCH Environmental Consulting Inc., Biologist / Owner

2006-2017: Bowfin Environmental Consulting Inc., Biologist / GIS Specialist / Environmental Site Inspector

2005: St. Lawrence River Institute of Environmental Sciences, Field Research Assistant

2004: MNR Kawartha Lakes, Field Research Assistant

2003: DFO- Experimental Lake Area, Field Research Assistant

2001: Resource Stewardship S, D &G, Stewardship Ranger

CERTIFICATIONS / PROFESSIONAL AFFILIATIONS

MTO/DFO/OMNR Fisheries Protocol, Ecological Land Classification (ELC), Certified in Inventory and Identification Methods for Ontario's Reptiles and Amphibians, North American Benthological Society (NABS) Certified Family Level Taxonomist, Ontario Benthos Biomonitoring Network (OBBN), Ontario Stream Assessment Protocol (OSAP), Certified Ontario Wetland Evaluator (OWES), Butternut Health Assessor/Expert (BHA/BHE), first aid, CPR, Pleasure Craft Operator Card, Marine Radio Operator, WHMIS, WHSA, Hazard Identification, Assessment and Control, All Terrain Vehicle Riders Course (issued by the Manitoba Safety Council), Water Safety Training (Bronze Cross), Possession / Acquisition Firearms Licence, Ontario Hunter Education Course Certificate, Ontario Trapper Education Course Certificate, Wildlife Chemical Immobilization, Vaccination, and Euthanasia- Certificate of Knowledge, South Lancaster/South Glengarry Fish and Game Club (SLFGC; president 2012 and 2013; executive member 2014-2023), Ontario class G driver's license, and Snowmobile License.

EXPERIENCE

Experience in environmental impact assessments/studies, environmental monitoring, environmental assessments, terrestrial habitat assessment, species at risk surveys, amphibian surveys, avian surveys, freshwater habitat assessment, collection and identification of plants, collection and identification of aquatic invertebrate, collection and identification of fish, fish salvage, fish behavioral studies, winter bat hibernaculum inventories and fisheries inventories including habitat mapping, electroshocking, FWIN and RIN. Other experience include GIS mapping.

Environmental and Fisheries Inspections

- Provided environmental and fisheries inspections for the construction of the Cataraqui Crossing HWY 401-MTO (Kingston, ON).
- Provided environmental and fisheries inspections for the construction of the Three Nations Bridge including surveys for nesting species at risk (Cornwall, ON).
- Provided environmental and fisheries inspections for construction (Ottawa, ON).
- Conducted nest surveys (Kemptonville, ON.; Stittsville, ON.; Cornwall, ON.)
- Conducted environmental inspections for the construction of the Clarkson WWTP outfall, Lake Ontario.
- Conducted environmental inspections for the construction of a new bridge crossing Bearbrook Creek along the 417.



- Provided environmental and fisheries inspections for the blasting and drilling operation for the Burloak Water Purification Tunnel project (Burlington, ON).
- Provided environmental and fisheries inspections for the construction of the Poole Creek Re-alignment/Huntmar Drive Crossing.

Environmental Impact Assessments/Studies

- Conducted the field work and authored multiple EIA/EIS throughout Ontario.

Wetland Evaluations and Delineation

- Conducted multiple Wetland Evaluations and Delineation as per OWES (Ottawa, Rideau Lakes, United Counties of SDG, United Counties of Leeds and Grenville and many other locations).

Species at Risk Inventories / Monitoring

- Has over 15 years' experience of conducting butternut assessments. I am a butternut health assessor (BHA #281, a butternut health expert, and has aided for the Forest Gene Conservation Association of Ontario to assess the archivability of Category butternut 3 trees.
- Butternut survey and assessment for proposed developments (Brockville, Carleton Place, Carp, Clarence-Rockland, Cornwall, Munster, Hawkesbury, Kemptville, Ottawa, South Lancaster, Smith Falls, Stittsville, Prospect, Vars, Moose Creek, Prescott, Westminster, Renfrew, Battersea, Jones Falls, and Millbrook).
- American Eel surveys using the boat electrofisher on the Mississippi River (Almonte, ON), South Nation River (Casselman, ON) and Ottawa River (Renfrew, ON; Ottawa, ON; Shawville, QC)
- American Eel collection on the St. Lawrence River for the St. Lawrence River Institute (Cornwall, ON)
- American Ginseng survey for proposed development (Kanata, South Lancaster and Renfrew).
- Whip-poor-will survey for proposed development (Navan, ON; Kemptville, ON; Stittsville, ON; Prescott, ON; Alexandria, ON) and quarries (Avonmore, Moosecreek, Prospect, Stittsville, Kanata, Ottawa)
- Assisted in a Least Bittern survey (Avonmore, ON)
- Conducted turtle surveys: Blanding's turtle, Eastern musk turtle (Carleton Place, ON; Ottawa, ON; Stittsville, ON; Kanata, ON, Prospect, ON)
- Conducted rapid clubtail surveys (Almonte, ON)
- Bat maternal nesting site surveys (Prescott, ON; Battersea, ON; Prescott, ON; Hawkesbury, ON; Russell, ON)

Aquatic Inventories

- Boat electrofishing along the shoreline of the Ottawa River (Chat Falls, ON) along the shoreline of the Cataraqui River (Kingston, ON), downstream of the Carillion Dam (Pointe-Fortune, QC), Lake St. Francis (South Lancaster, ON), South Nation River (Casselman, ON), Raisin River (Lancaster, ON), and the St. Lawrence River (Cornwall, ON)
- Collecting and data entry for benthic macroinvertebrate community surveys on several watercourses within Ontario including: Bonnechere River (Renfrew, ON), Montreal River (Latchford, ON), Jock River (Ottawa, ON), tributaries of the Bonnechere River (Renfrew, ON), tributaries to Feedmill Creek (Ottawa, ON), tributary to Chippewa Creek (North Bay, ON) and tributary to the Beaudette River (Alexandria, ON).
- Collecting and data entry for several fish community surveys including: Black Creek (Westminster, ON), Bonnechere River (Renfrew and Douglas, ON), Butler's Creek (Brockville, ON), East Branch of Little Cataraqui Creek (Kingston, ON), Kehoe Ditch (Greely, ON), Lac Opemisca (Ouje-Bougoumou, QC), Marshall Seguin Municipal Drain (Vars, ON), Montreal River (Latchford, ON), tributaries of Laval Creek (Carleton Place), tributaries to Feedmill Creek (Ottawa, ON), tributaries to Lafontaine Creek (Clarence-Rockland), tributaries to Shirley's Brook (Kanata, ON), tributaries to the Beaudette River (Alexandria, ON), tributaries to the Bonnechere River (Renfrew, ON), tributaries to the Ottawa River (Carp, ON; Ottawa, ON; Wendover, ON; Clarence-Rockland, ON), tributaries to the South Nation River (Casselman, ON), tributaries to the South Nation



- River (Jessup Falls, ON), tributary to Hawkesbury Creek (Hawkesbury, ON), Hawkesbury Creek (Hawkesbury, ON), tributary to the St. Lawrence River (Prescott, ON) and tributary to the North Castor River (Greely, ON).
- Mapped fish habitat in many watercourses including: Black Creek (Westminster, ON), Bonnechere River (Renfrew and Douglas, ON), Butler's Creek (Brockville, ON), Kehoe Ditch (Greely, ON), Lac Opemisca/Lac Barlow Bypass channel (Ouje-Bougoumou, QC), Marshall Seguin Municipal Drain (Vars, ON), McKinnons Creek (Navan, ON), Montreal River (Latchford, ON), tributaries of Lavelle Creek (Carleton Place), tributaries of the Bonnechere River (Renfrew, ON), tributaries to Lafontaine Creek (Clarence-Rockland), tributaries to McKinnons Creek (Navan, ON), tributaries to Shirley's Brook (Kanata, ON), tributaries to the North Castor River (Greely, ON), tributaries to the Ottawa River (Ottawa, ON; Wendover, ON), tributaries to the South Nation River (Casselton, ON), tributaries to the South Nation River (Jessup Falls, ON), tributary to the St. Lawrence River (Prescott, ON) and tributary to Hawkesbury Creek (Hawkesbury, ON).
 - Assisted in YOY sampling on the Raisin River (Lancaster, ON).
 - Conducted riverine index netting on the Bonnechere River (Renfrew, ON).
 - Assisted in gill netting on Bonnechere River (Renfrew, ON), Lac Barlow (Ouje-Bougoumou, QC), Lac Opemisca (Ouje-Bougoumou, QC), Montreal River (Latchford, ON), and Raisin River (Lancaster, ON).
 - Assisted in conducting larvae surveys on Bonnechere River, Hoople Creek, Montreal River and Raisin River,
 - Collected walleye eggs from the spawning grounds on the Bonnechere River, Montreal River, Raisin River and Hoople Creek.
 - Assisted in the monitoring of a new wetland channel created in the Little Cataraqui River.
 - Marsh monitoring program breeding amphibian survey at Stittsville, ON; Cornwall, ON; Kanata, ON; Hoople Creek and the Bonnechere River.
 - Assisted in conducting fall walleye index netting for the MNR in Kawartha Lakes
 - Conducted turtle surveys (Carleton Place, ON; Ottawa, ON)
 - Conducted headwater waters assessment (Kanata, ON; Navan, ON, Ottawa, ON)

Terrestrial Inventories

- Multiple Environmental Impact Assessments across Ontario
- Tree Inventory for construction of the light rail (LRT; Ottawa, ON)
- Winter white-tailed deer survey (Edwardsburgh, ON)
- Plant community inventories for proposed developments, quarries, sand pits and road extensions (Brockville, Carleton Place, Carp, Casselman, Elgin, Griffith, Hamilton, Jessup Falls, Navan, Ottawa, Stittsville, Rockland, Simcoe, Cornwall, Kemptville, Hawkesbury, Smith Falls, Wendover, Moosecreek, Westminster, Prescott, Renfrew, Jones Falls, Michipicoten Island and in Ouje-Bougoumou in QC)

Aquatic Habitat Mapping for Municipal, City Roads and Provincial Highways

- Conducted MTO habitat assessments at Galetta Side Road, Torbolton Road, Kinburn Side Road (Ottawa, ON)
- Conducted MTO habitat assessments at Prince of Wales, Fernbank Road, Fallowfield Road, HWY 115, Arbuckle drain, the Carp river, tributaries to the Carp river and tributaries to Mud creek (Ottawa, ON)
- Conducted MTO habitat assessments at Innes Road, Ottawa, ON.
- Conducted MTO habitat assessments at MacLaren Side Road, Ottawa, ON.

Other

- Fish salvage: Mississippi River (Almonte, ON), Monaghan Drain (Ottawa, ON), tributary to the Rideau Canal (Kemptville, ON), and tributary to Feedmill Creek (Ottawa, ON), Bonnechere River (Renfrew, ON)
- Assisted in conducting a winter bat hibernaculum inventory (Plantagenet, ON)
- Field research assistant for the Metalicous study and EDC study (Experimental Lakes Area, ON)
- Captured, pit tagged, telemetry tagged and tracked Northern Pike (Experimental Lakes Area, ON)
- Construction and maintenance of nature trail (the Cornwall Outdoor Recreational Area, ON)



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- Conducted frog deformities surveys (Glengarry, ON)
- Organized youth fishing derbies through SLFGC (2011-2013; South Lancaster)
- Organized the St. Francis Walleye Tournament through SLFGC (2012-2013; South Lancaster)



CODY J.C FONTAINE, Fisheries and Wildlife Technologist

EDUCATION

Fisheries and Wildlife Technology, Frost Campus, Sir Sandford Fleming College, 2012
Fisheries and Wildlife Technician, Frost Campus, Sir Sandford Fleming College, 2011

LANGUAGES

Fluent in English

POSITIONS HELD

2022: BCH Environmental Consulting Inc., Fisheries and Wildlife Technologist
2014: Bowfin Environmental Consulting Inc., Fisheries and Wildlife Technologist
2009: Raisin Region Conservation Authority, Field Research Assistant

CERTIFICATIONS / PROFESSIONAL AFFILIATIONS

MTO/DFO/OMNR Fisheries Protocol, Environmental Monitoring For Construction Projects Practitioner (EMCPP), Ontario Stream Assessment Protocol (OSAP), Class 2 Electroshocking, first aid, CPR, Pleasure Craft Operator Card, WHMIS, WHSA, Hazard Identification, Assessment and Control, Ice Safety Training, Possession / Acquisition Firearms License, Fish Identification Certificate, Radio Telemetry Certificate, Fish Hatchery Operations Certificate, Ontario Hunter Education Course Certificate, Ontario trapper Education Course Certificate, Ontario class G driver's license.

EXPERIENCE

Experience in environmental monitoring, environmental assessments, terrestrial habitat assessment, species at risk surveys, amphibian surveys, freshwater habitat assessment, collection and identification of plants, collection and identification of fish, fish salvage, bat hibernaculum inventories and fisheries inventories including netting and electroshocking. Other experiences include GIS mapping.

Aquatic Inventories

- Assisted with boat electrofishing along the shoreline of the Ottawa River (Chat Falls and Ottawa, ON), Lake St. Francis (South Lancaster, ON), Bonnechere (Renfrew, ON), Raisin River (Lancaster, ON), Buckhorn Lake (Peterborough, ON) and the St. Lawrence River (Cornwall, ON)
- Assisted in collecting and data entry for several fish community surveys including: Bonnechere River (Renfrew, ON), tributaries to Feedmill Creek (Ottawa, ON), tributaries to Shirley's Brook (Kanata, ON), tributaries to the Ottawa River (Ottawa, ON), tributaries to the Rideau River (Manotick, ON), tributaries to the Castor River (Vars, ON), tributaries to the Otonabee River (Lakefield, ON), tributary to the Madawaska River (Arnprior, ON), tributaries to Kemptville Creek (Kemptville, ON), tributary to Blairs Creek (Clarence Creek, ON), tributaries to South Indian Creek River (Russell, ON) tributaries to the South Nation River (Casselman, ON), tributaries to Fraser Clarke Drain (Nepean, ON), tributaries to the Raisin River (Long Sault, ON), Oliver-Magee drain (South Glengarry, ON) and tributary to Hawkesbury Creek (Hawkesbury, ON).
- Assisted in collecting walleye eggs from the spawning grounds on the Raisin River.
- Marsh monitoring program breeding amphibian surveys (Stittsville, Lakefield, Cornwall, Long Sault, South Glengarry, Bourget, Manotick and Kanata, ON).
- Conducted turtle surveys (Carleton Place, Ottawa, Cornwall and Lancaster, ON)
- Conducted Headwater Assessments (Ottawa, Stittsville and Manotick, ON)
- Invasive Species Survey (Ottawa, ON)

Species at Risk Inventories / Monitoring



- Assisted in butternut surveys, inventories and assessments for proposed developments (Carleton Place, Casselman, Cornwall, South Glengarry, Long Sault, Kemptville, Smiths Falls, Ottawa, Stittsville, Peterborough, Lakefield, Brockville, Alfred, Orleans, Kanata and Prescott, ON).
- American Eel surveys using the boat electrofisher on the Ottawa River (Ottawa, ON)
- American Eel collection on the St. Lawrence River for the St. Lawrence River Institute (Cornwall, ON)
- Conducted tailrace surveys for hydro facilities regarding American eel and lake sturgeon fatalities (Almonte, Renfrew, Ottawa and Fitzroy Harbour, ON)
- Whip-poor-will survey for proposed development (Ottawa, Kemptville, Bourget, Stittsville, Alfred, South Glengarry and Alexandria, ON) and quarries (Ottawa and Cornwall, ON)
- Surveyor for Little Brown bat, Eastern Small Footed Bat and Northern Long Eared Bat surveys at Ernestown Windpark (Ernestown, ON)
- Gray Ratsnake Survey (Smiths Falls and Lakefield, ON)
- Bat Cavity Survey (Lakefield, Smiths Falls, Bourget, Clarence Creek, Casselman, Orleans, Kanata, South Glengarry and Embrun, ON)
- Conducted Least Bittern surveys (Prospect, Alexandria, and Lancaster, ON)
- Conducted Black Tern nest surveys (Alexandria, and Cornwall, ON)
- Conducted turtle surveys: Blanding's turtle, Musk turtle and Northern Map turtle, Painted turtle and Snapping turtle (Carleton Place, Ottawa, Stittsville, Kanata, Rockland, Cornwall, Lakefield, Alfred, Clarence Creek and Lancaster, ON)
- Conducted American Ginseng Survey (Alfred, ON)
- Conducted rapid clubtail surveys (Almonte, ON)
- Conducted Osprey nest surveys (Cornwall, ON)

Terrestrial Inventories

- Assisted plant community inventories for proposed developments (Ottawa, Cornwall and Prescott, ON)
- Assisted in ELC inventories (Ottawa, Lakefield, Alfred, Kanata, Long Sault, South Glengarry and Peterborough ON)
- Nesting Bird Survey (Stittsville and Brockville ON)
- Large Tree Survey (Carp, Kanata and Orleans, ON)
- Deer and Moose Overwintering Survey (Alfred, ON)

Environmental and Fisheries Inspections

- Assisted in providing environmental and fisheries inspections for construction (Ottawa, ON)
- Assisted in turtle salvage during construction at the Cavanagh Snow Dump (Kanata, ON)

Fish Salvage

- Highway 401 Fish Salvage – Brockville, ON and Prescott, ON (Cruikshank, MTO Contract)
- Other fish salvages: Cardinal Creek (Ottawa, ON), Monaghan Drain (Ottawa, ON), tributary to the Rideau Canal (Kemptville, ON), tributary to Feedmill Creek (Ottawa ON), Bonnechere River (Renfrew, ON), Mississippi River (Almonte, ON), Ottawa River (Ottawa, ON), Tributary to Fraser Clarke Drain (Nepean, ON), tributary to St.Lawrence River (Newington, ON), Davidson Pond (Ottawa, ON), Hazeldean tributary (Ottawa, ON), tributary to Jock River (Richmond, ON), culvert on Thunder Road (Gloucester, ON), culvert on Dunning Road (Cumberland, ON)

Other

- Organized fishing derby through RRCA (2008-2012; Cornwall, ON)
- Conducted environmental education presentations to many school groups (Cornwall, and Lancaster, ON)
- Tree Planting (2008-2012; Cornwall, ON)