

ENVIRONMENTAL REVIEW TRIBUNAL

IN THE MATTER OF sections 38 to 48 of the *Environmental Bill of Rights, 1993*, S.O. 1993, c. 28, as amended, and section 34 of the *Ontario Water Resources Act*, R.S.O. 1990, c. O.40, as amended;

AND IN THE MATTER OF an Application by the Sierra Club of Canada and the Greenspace Alliance of Canada's Capital for leave to appeal the decision of the Director under section 34 of the *Ontario Water Resources Act*, to issue Permit to Take Water No. 8130-7HNPVW dated April 27, 2009, to Findlay Creek Properties Ltd. and 1374537 Ontario Limited for the purposes of construction dewatering at Lot 18, 19 & 20, Concession IV, former Township of Gloucester, Ottawa, Ontario.

**SIERRA CLUB OF CANADA
AND
GREENSPACE ALLIANCE OF CANADA'S CAPITAL**

- and -

DIRECTOR, MINISTRY OF THE ENVIRONMENT

**AFFIDAVIT OF SHAUN THOMPSON
DISTRICT ECOLOGIST
MINISTRY OF NATURAL RESOURCES**

(Sworn June 4, 2004)

I, **Shaun Thompson**, of the Township of Merrickville-Wolford, in the Province of Ontario, AFFIRM AND SAY AS FOLLOWS:

1. I am currently employed as the District Ecologist for the Kemptville District of the Ontario Ministry of Natural Resources (MNR). I have been employed by MNR since 1981 holding a number of positions over those years including: Fish and Wildlife Technician, Park Warden, Assistant Park Superintendent, Park Superintendent, Deputy Conservation Officer and Area Biologist. I have been in my current position as District Ecologist for 15 years.

2. In this position I am responsible for assisting Area Managers and the District Manager in incorporating ecologically sustainable management practices within the district by providing expertise on issues of ecosystem management, landscape ecology, species at risk, wetlands and other natural heritage area ecology. I am responsible for issue management regarding wetland and ANSI boundary identification and resolution for municipal planning and Conservation Land Tax Incentive Program purposes. I provide advice regarding the assessment of impacts associated with site development activities and land use changes upon wetlands, species at risk and other natural heritage features to other MNR staff, municipalities, consultants and others.

QUALIFICATIONS

3. My educational background and professional experience are described in detail in my curriculum vitae attached to my affidavit as Exhibit #1.
4. I have testified before the Ontario Municipal Board as an expert witness on four separate occasions, twice as an expert on wetlands and wetland evaluation, the other times an expert in rare species ecology and on Loggerhead shrike biology.
5. I have testified before the Environmental Review Tribunal as an expert witness in wetland evaluation and ecology and the impacts of changes to hydrology on wetland vegetation.
6. I have personal knowledge of the matters to which I depose in this affidavit. Where I do not have personal knowledge, I have indicated the source of my information and I believe such information to be true.

The Leitrim Wetland

7. The Leitrim wetland was originally evaluated in 1989 and re-evaluated in 1991 and 1992. The Leitrim Wetland has been approved by the Ontario Ministry of Natural Resources as a provincially significant wetland (PSW). The approved, current boundary of the Leitrim

PSW defines an area of approximately 246 ha. A map depicting the current wetland boundary as established in 1992 is attached to my affidavit as Exhibit #2

8. The Ontario Wetland Evaluation System (OWES) uses a scoring system to evaluate wetlands and the resulting score determines its significance. The scoring is broken down into four major components: Biological, Social, Hydrology and Special Features. Each of these components is scored out of a maximum 250 points. Leitrim wetland scored a total of 730 points which includes 202 points under the Special Features component as documented in the 1992 re-evaluation. A wetland was considered at this time to be a Class 1 wetland if it scored over 700 hundred points in total. Later policies (1993) equated wetlands evaluated under the 2nd Edition of OWES of Classes 1 to 3 to be provincially significant. Under the current edition of OWES if a wetland scores over 600 points in total it is considered provincially significant. Further, the current scoring dictates that a wetland that scores over 200 in either the Biological or Special Features component of the evaluation, regardless of total score, is provincially significant.
9. The wetland evaluation system in Ontario recognizes four major types of wetlands. These are bog, fen, marsh and swamp. Leitrim wetland is comprised primarily of swamp (92%) with a relatively small amount of marsh (6%) and an even smaller amount of fen (2%) habitat. There was therefore very little open water in the wetland at the time of the evaluation and based on air photos going back to 1953 that I have reviewed, this has been the case for some time. The wetland is dominated by conifer forest (swamp), mixed (deciduous-conifer) forest (swamp) and various shrub dominated swamp communities.
10. There are records for a significant number of locally, regionally and provincially rare plant species including vascular plants, mosses and lichens. Leitrim wetland is unique as a natural area in a landscape of moderate urban development, agriculture and aggregate extraction activity.
11. I conducted a review of several sources of information including that provided by

consultants, the leave to appeal applicants and available from the Natural Heritage Information Centre (NHIC) and have found no documented occurrences of any Threatened or Endangered species as covered by Ontario's *Endangered Species Act (2007)* or Canada's *Species At Risk Act* for the Leitrim wetland or within one kilometre of the wetland.

12. Fens are very sensitive wetland communities. Alterations or disturbances to water supply and/or quality can cause fens to shift to other community types that are comprised of more common and disturbance-tolerant species. Simple examples of changes are: drying out (less water received – shifting to a swamp community), flooding (greater water received or held – shifting to a marsh community) or nutrient enrichment (shift to more common species communities). The fen in Leitrim wetland is located at the upper, northeast corner of the current wetland adjacent to the berm and is considered one of the more significant features of the wetland due to the rarity of fen habitats in eastern Ontario generally and the significant species of plants associated with it.

History

13. I have reviewed the information on file with the Ministry of Natural Resources and based on that review and interpretation of wetland evaluation reports and air photos from 1953 to 2008, I can provide the following information regarding the history of the wetland. Air Photos from 1953, 1971, 1978, 1987, 1991, 2002, 2005 and 2008 are attached to my affidavit as Exhibit 3.
14. Circa 1989, the land use surrounding the Leitrim wetland was mostly agricultural fields – both active and retired. There was a combination of residential and light commercial/industrial development on all sides in close proximity and at some distance (less than 2 km). The Rideau-Carleton Race track was in existence at the time to the south as well. There were active aggregate extraction operations within 2 km of the wetland. The majority of the land close to the wetland was agriculture and much of this on the east side was abandoned or retired.

15. Notable within 1 km of the wetland for the period between 1987 (available air photo date close to 1989 evaluation) and 2005 (City of Ottawa air photograph) are:
1. Naturalization of retired/abandoned agricultural land southeast of the wetland. This area was in a more natural state due to re-growth of old fields in 2005 than it was at the time of the 1989 evaluation, or in 1953 for that matter (based on air photo).
 2. The south end, southwest and west sides have seen little change since 1989.
 3. On the west side of Albion Road, the north end of the Leitrim Wetland remains unchanged.
 4. The biggest changes to the landscape surrounding the Leitrim wetland occurred during the period between 1987 and 2005 have been along the northern edge and northeast corner, east of Albion Road: i) the creation of a large ditch and associated side ditches that run through the northeast corner, ii) the creation of the berm (circa 2005) which currently defines the wetland boundary at this part of the wetland and iii) subsequent residential development outside of the 1992 wetland boundary to the immediate northeast.
16. Based on air photos, sometime between 1987 and 1991 a large ditch was established through the wetland at the north end and through the fen flowing west to east into Findlay Creek. It is my opinion that this would have had a major impact on the fen ecology, serving to pull water from it and alter its hydrology resulting in a change in plant species composition. Prior to this event the fen was relatively well buffered from direct drainage effects by surrounding swamp and marsh communities. Historically (based on air photo interpretation), there were efforts at agriculture including drainage and clearing to within 100m of the fen, but overall there is no evidence based on air photos that the fen was ever directly impacted by any ditching.
17. I visited the northeast portion of the wetland in June 2004 with the objective of viewing the fen. The approach was from Albion Road north of the current berm location and prior to its establishment there. At the time of this visit the fen was heavily impacted by glossy buckthorn (*Rhamnus frangula*), so much so that it took considerable checking of air photos

and a GPS in the field to ascertain that I was actually in the fen. I observed a dense thicket of mature buckthorn shrubs with remnant, scattered cedars and a sparse representation of fen species on the ground. The ground was quite dry for a fen and was sparsely vegetated, due to the heavy shade cast by the buckthorn shrubs, with the exception of thousands of buckthorn seedlings that were prevalent in the understory. Given the extent and size of the buckthorn shrubs in this fen area, I would estimate that this species had been present in the fen area for a decade or two. I observed a large ditch which was relatively dry at the time of my visit that had a series of what appeared to be plugs or beaver dams. They were not holding much water back at the time. The ditch ran through the fen area in a west-east direction and was quite deep at the east end near the east boundary of the wetland. This feature was useful in determining my location in the fen because it was visible on air photos.

18. It is my opinion that the change to the fen can be tracked through time using a series of air photos dating back to 1953. Up until about 1978 the fen is visibly distinct as an open area with some woody species visible. Sometime between 1978 and 1987 changes started to occur that caused a minor increase in the amount of woody vegetation and a subsequent decrease in the amount of open fen. By 1991 the large ditch was in the fen and a significant change in the appearance of the fen is detectable through the use of air photos. Further increases in the amount of woody vegetation appear to have occurred and the loss of visible open fen habitat was almost complete. It is not possible for me to determine the species of trees and shrubs invading the fen from air photo interpretation. I am able to distinguish a difference between the original woody species in the fen which were reported to be cedar and tamarack (larch) in the 1989 evaluation and the species filling in the open fen areas visible in later air photos. The placement and patterning or shapes of the original conifers are recognizable and somewhat consistent from air photo to air photo through time. The native conifers (cedar and tamarack) have a lighter colour or tone than the invading species suggesting that they are of a different type of tree or shrub - possibly deciduous in nature. As well, given the conditions of the fen in 2004 during my site visit it is logical to assume that the majority of this woody species invasion seen in post 1987 photos was comprised of

buckthorn. Glossy buckthorn was noted in the fen area in the 1989 wetland evaluation under the vegetation community description for F1 as 'black buckthorn'.

19. In addition there have been direct losses of wetland (marsh and swamp) that had existed to the north and east of the bermed area due to land use changes. This is based on air photo interpretation, the original 1989 wetland mapping and my site visit in 2004 and subsequent visit to the site in the late winter of 2009. In other words the wetland lost in this area would have originally been included within the 1989 and 1991 wetland boundary at the northeast portion of the wetland but not within the area defined in the 1992 boundary.
20. There are also significant changes to ditching in the northeast end and north of the wetland between 1978 and 1991 based on air photos. Numerous new ditches were installed or possibly older ones improved during this period. These changes are clearly visible on photos taken in both of these years. It is not clearly understood by me what the impact would be exactly on the wetland, but my experience would lead me to surmise that drainage of this extent and placement would have an overall drying affect on the adjacent portions of the wetland.

MNR Participation in Managing the Wetland

21. I have been a member of the Leitrim Wetland Advisory Committee since 2000. The committee was established then at the invitation of South Nation Conservation (SNC). Its main objective was to manage and preserve the integrity of the wetland and the focus was for those lands (approximately 100 ha) under ownership of SNC. A management plan was completed November, 2004.
22. I recently (January 2009) joined the Leitrim Monitoring Technical Advisory Committee and have attended two meetings to date. This committee was established to oversee the implementation of the environmental management plan, post construction monitoring of water levels in the Leitrim wetland and any associated mitigation measures as a requirement under the 2003 Fisheries Act authorization.

23. A key aspect of wetland ecology is that wetlands are sensitive to changes in water levels. Water levels must be maintained within historic fluctuations in order to ensure that the wetland ecology is not adversely affected.
24. I first became involved in providing input into the PTTW in late November, 2008. I was asked to participate and provide input on aspects of wetland ecology as they might relate to the PTTW so that the consideration of a PTTW application could include an assessment of potential impacts to the wetland and if approved could, if appropriate, develop and include conditions that would allow for monitoring of changes to the wetland ecology.
25. I understood there were monitoring wells in place within the wetland as part of previous studies and authorizations related to the development and that there was some data collected to date from these wells. I also was aware that it was the intention of the applicants to maintain a program using these wells to further monitoring any effects that the activities of the proposed dewatering might have on the ground water of the wetland.
26. I determined that it would be beneficial to have conditions that would add vegetation monitoring of the wetland to the PTTW. This would allow for data to be collected prior to the activities under the permit commencing and to be continued at regular intervals until the expiration of the permit. The vegetation monitoring would be established at the northeast area of the wetland for the following reasons:
1. accessibility – the wetland is difficult to traverse and a monitoring plan should be implementable. This part of the wetland will be one of the most accessible in the future.
 2. the fen and its associated species is one of the most significant features of the wetland.
 3. the fen area is the most sensitive to changes and is located proximal to the proposed dewatering activities. The vegetation in the fen and any adjacent marshes will respond more quickly to changes in hydrology and presumably be detectable here more than in

any other part of the wetland.

4. there are a number of existing monitoring wells with associated data in this area to take advantage of.
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27. In consultation with other MNR wetland biologists, a monitoring schedule was proposed that would allow for the current vegetation to be described and track changes in vegetation in this portion of the wetland. Two main sampling techniques were proposed. Vegetation community boundaries would be mapped in order to establish a baseline condition and monitored for change through time by the use of a transect plot. Detailed vegetation description including species presence, abundance, dominance and structure would be accomplished by establishing and monitoring vegetation at several plots in quadrats offset from the transect. This would allow for establishing baseline conditions and recording data annually to check for changes in community boundaries such as a shift (positive or negative) in the boundary of fen/swamp/marsh communities or changes to species composition or diversity . The quadrat plots would sample vegetation in sufficient detail to detect changes in species abundance and dominance and structural changes at the plot level. Photo monitoring would be continued and enhanced with new standards to take advantage of the small amount of information obtained to date using this technique in the wetland. As well, existing air photos would be obtained and new photos taken to help detect and interpret changes to the wetland at a larger scale. The latter would be supplemental in nature and used to support information gathered at a finer, more detailed scale.
 28. The location of the vegetation monitoring transect and plots were strategically located near existing monitoring wells with the intention of being able to relate any findings from one monitoring effort to the other. In other words the assumption is that changes to vegetation in this part of the wetland can best be compared to water level readings from monitoring wells in closest proximity to vegetation monitoring plots.
 29. The schedule for collecting data and reporting was established recognizing that changes in hydrology in a wetland can take some time to be detectable as changes in vegetation.

However, in order to take a precautionary approach data collection and reporting were designed to be frequent enough to catch changes in vegetation early in order to act appropriately. The collection of data is to be carried out annually during the height of the growing season and standardized as to timing for comparability of data.

30. The elements and design of the vegetation monitoring were developed in consultation with other wetland ecologists in MNR and with the applicant's consultants (Golder) as well as hydrogeologists with MNR, MOE and Golder. There was consensus amongst the group on the layout and merit of the vegetation monitoring plan and the potential to link results from it to monitoring well data to provide a responsive monitoring program that would detect changes in a timely manner to wetland vegetation in what is considered one of the most sensitive parts of the wetland and the one that is most proximal to the activities to be covered under the PTTW.
31. The vegetation monitoring component as part of the conditions of the PTTW was felt to be detailed enough, strategically located and monitored frequently enough to ensure a precautionary approach and would allow for quick responses to negative impacts, if detected, and adaptive management to be engaged.
32. One added feature of the vegetation monitoring established for the purposes of the PTTW activities is that once in place it can be continued to track changes in wetland in this part of the wetland indefinitely and be useful as a tool in the future for intended wetland restoration efforts as part of the Leitrim Wetland Advisory Group's objectives. Both the data collected over the 10 year period of the PTTW and the use of established plots will be beneficial to understanding the dynamics of the wetland and possibly guide restoration activities in the fen.

Blanding's turtle

33. There are no documented occurrences for this species in or adjacent to the Leitrim wetland that I am aware of. To my knowledge the nearest documented occurrence of Blanding's

turtle to Leitrim wetland is 3 kilometers away from the nearest open water habitat within the Leitrim wetland. The referenced observation was in 2006 along Lester Road to the north.

- 34. Blanding's turtles prefer quiet wetlands with a mix of abundant vegetation, structure such as logs, stumps and hummocks and open water. At the landscape level they prefer a mosaic of natural terrestrial habitats interspersed with a series of large and small ponds as described previously. There is little remaining habitat for this species in the surrounding landscape. There is very little open water available within the Leitrim wetland since it is primarily (over 90%) treed swamp. There are significant barriers to travel such as busy roads, residential and commercial development between any remaining, potentially suitable habitat patches.

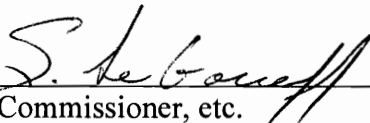
- 35. Save for the occurrence at Lester Road there are no other documented occurrences for Blanding's turtle within over 10km of Leitrim wetland and these are on the other side of the Rideau River and over 12 km away in the Mer Bleu area. These occurrence records date from 1973 to 1985.

- 36. I make this affidavit in response to the Applicants' Leave to Appeal application and for no other or improper purpose.

AFFIRMED BEFORE ME
at the Municipality of North Grenville in
the Province of Ontario

this *4th* day of *June*, 2009

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A Commissioner, etc.

Shelley Lee LeGoueff, a Commissioner, etc.,
United Counties of Leeds and Grenville, for the
Government of Ontario, Ministry of Government
Services.
Expires September 14, 2010


Shaun Thompson

CURRICULUM VITAE

SHAUN THOMPSON, DISTRICT ECOLOGIST

ONTARIO MINISTRY OF NATURAL RESOURCES
KEMPTVILLE DISTRICT
1 CONCESSION ROAD
KEMPTVILLE, ONTARIO
K0G 1J0

EDUCATION

B.Sc., Biology, Carleton University, Ottawa, Ontario, 1978

Fish and Wildlife Technician, Technical Diploma Course, Sir Sandford Fleming College, Lindsay, Ontario, 1982

WORK EXPERIENCE

Ministry of Natural Resources, Kemptville District Office, Kemptville, Ontario
District Ecologist/ Area Biologist, November 1993 to present

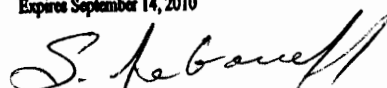
Provide ecological services in support of the district and area resource management programs. Such services include identification, conservation, protection and sound management of unique or representative physical and biological features of the district, species at risk, and the provision of expertise on issues of ecosystem management, wetland and landscape ecology. I have a significant amount of experience in air photo interpretation starting with a course at Sir Sandford Fleming College in 1981 and followed by 28 years of applying and developing this skill on the job. Examples of how I have employed air photo interpretation include but are not limited to: identify and assess habitat for species of interest; detect and interpret changes to vegetation communities; identify habitat types; and determine wetland boundaries.

Past and current roles:

- Plan and implement the Natural Heritage program for the District
- Follow and implement related provincial program, policy and legislation
- Assist area managers and the district manager in incorporating ecologically sustainable management practices within the district by providing expertise on issues of ecosystem management, landscape ecology, species at risk, wetland and other natural heritage area ecology and program development
- Plan, organize and implement area related wildlife resource management programs
- Participating member on provincial Natural Heritage Forum
- Link district staff and managers to provincial programs and initiatives related to natural heritage
- Leader of district's Wetland Working Group, main wetland evaluator for district
- Issue management regarding wetland and ANSI boundary identification and resolution for municipal planning and CLTIP purposes

"This is exhibit 1 referred
to in the affidavit
of Shaun Thompson sworn before
me on this 4th day of June
A.D. 20 09."

Shelley Lee LeGoueff, a Commissioner, etc.,
United Counties of Leeds and Grenville, for the
Government of Ontario, Ministry of Government
Services.
Expires September 14, 2010



- Provide professional advice regarding the assessment of impacts associated with site activities and land use changes upon wetlands – to other MNR staff, municipalities, consultants, developers, landowners, etc.
- Leader of district's Natural Heritage Working Group
- support province's species at risk program within the district
- District contact for Conservation Land Tax Incentive Program (CLTIP)
- Member of Provincial Wetland Evaluation Technical Team for approximately 10 years
- Planning team member on Forest Management Planning Team (Mazinaw-Lanark Forest Management Area), ensure identification, consideration and protection planning for natural heritage values in crown forest management planning process, including development of wetland protection guidelines
- Environmental impact statement review
- Chair of recovery team for Eastern Prairie Fringed Orchid, Blunt-lobed Woodsia, Flooded Jellyskin, Deerberry, and co-chair for Eastern Ratsnake and American Ginseng recovery teams. Member of Butternut recovery team and Ontario Multi-Species Turtles at Risk Recovery Team (OMSTART).
- Participating member of working group developing forest management directives for the protection of ginseng habitat on crown land
- Member of Provincial Listing and Recovery Working Group for species at risk
- Member of Provincial Snake and Lizard Advisory Group
- Past Member of COSSARO (Committee on the Status of Species at Risk in Ontario)
- Review recovery plans for numerous species at risk in Ontario
- Project administration and field work for rare species inventory and monitoring
- Have attended OMB hearings and ERT as expert witness in wetland evaluation and ecology

Ministry of Natural Resources, Kemptville, Ontario

Park Superintendent, Rideau River Provincial Park, February 1990 to November 1993

Administered the management of a provincial park. Responsible for ensuring the park was operated in accordance with an existing management plan and that the provincial program objectives were met and relevant policies and legislation were adhered to. Ensured that the natural and physical resources of the park as well as those of the park visitor were protected.

Ministry of Natural Resources, Murphys Point Provincial Park and Carleton Place District Office

Park Warden/Assistant Park Superintendent and Fish and Wildlife Technician, April 1983 to February 1990

Duties were split seasonally between park work and district fish and wildlife technician. Park duties included:

- enforcement of related legislation, public relations, natural heritage protection and interpretation
- supervision of maintenance, enforcement and fee collection programs of the park
- staff hiring, supervision and training
- program development and scheduling
- public education and park representation
- natural environment protection, interpretation and research

As a Fish and Wildlife Technician carried out various resource management programs for the Carleton Place District:

- fisheries management
- wildlife management
- deer yard, lake and stream surveys
- population censuses
- fish stocking and fish habitat improvement projects
- Deputy Conservation Officer appointment from 1986 to 1999

Ministry of Natural Resources, Carleton Place, Ontario, May to December 1982
and Leitrim, Ontario, April to September 1981

Fish and Wildlife Technician

- General fish and wildlife management duties
- Population inventory and monitoring
- Stream and other habitat surveys
- Habitat monitoring and improvement

Selected Workshops and Training

Ecosystems Management, February 1994

Concepts of landscape ecology and applied management theories. Identification, evaluation and protection of representative and rare species and natural heritage areas. Concepts of biodiversity.

Vulnerable, Threatened and Endangered Species, March 1994

To understand the biology behind rarity and the definitions of rare, vulnerable, threatened and endangered. Introduction to the biology and identification of several species. Examples of monitoring programs and issues.

Wetland Evaluation Training – Southern Ontario – 3rd Edition, June 1994

A one week, intensive course designed to train evaluators under the Province's wetland evaluation system. Includes a complete, field evaluation of a wetland and plant ID training, field introduction to four major wetland types, rare species viewing, scoring system application. Concepts of wetland complexing, boundary determination and community description covered in class and in the field. I will be an instructor for this course June 2009.

Bill 163/ Bill 20 Training, February 1995, May 1996 and April 1997

Training session to introduce and understand the new Planning Act amendments and the policies made under the Act. Considerable time spent on the Natural Heritage Section of the policies which included dealing with provincially significant wetlands, adjacent lands and the complexing of wetlands. Learning about recent changes to the policies, sessions on the implications, transfer of information, technical guidelines, training and reference manuals.

Temperate Wetland Restoration Training Course, August 1997

One week, extremely intensive training on identifying wetlands on the landscape with a focus on historic or degraded/lost wetlands and their restoration planning and appropriate restoration techniques. Involved determination of current and previous boundaries and levels using environmental clues and various remote and onsite information. Determination and discussion of causative factors and potential, appropriate restoration steps.

Ecological Land Classification Training, May 2006 and May 2007

One week training course both years. This course was designed to teach the principles of classifying ecosystems at various levels through intense sampling of vegetation at four structural levels and sampling and classification of soils and interpretation of landscape and geological processes. Standard data collection methodology and strict recording protocols are learned and applied. Identification and field skills are required and learned as part of the process. I have been asked to assist with instruction of this course July 2009.

Relevant Wetland Work

Since 1994 have evaluated, or reviewed evaluations for, part or entire wetlands within the Kemptville District. This is a part of regular program administration or dispute resolution related to the municipal planning process or CLTIP. Such work has included field determination of boundaries and vegetation community mapping and descriptions and applying the scoring system. Review of consultant's evaluations for approval has been done through a document review and sometimes would include field checking. Kemptville District has over 300 wetland files for which I am responsible for maintaining.

In addition to the above I have been responsible for the selection of consultants to carry out re-evaluations of over 70 wetlands in the district and have been involved with the review of the resultant documents.

In the fall of 1999 and winter 2000 the Kemptville District developed a process to correct and refine digital wetland mapping through the use of existing wetland map data, remote sensing, Ontario Base Map hydrology layers, and air photos and ground knowledge. The area covered by this project included the southern portion of the district and included all of the wetlands within it. My role in this project was to provide wetland boundary and evaluation expertise in conjunction with the application of air photo/ remote sensing interpretation skills.

I developed a concept to translate current data for wetlands evaluated under OWES into terminology and descriptions consistent with the Ecological Land Classification (ELC) system used in Ontario for identifying and describing ecosystems. A consulting wetland ecologist was hired and supervised by me to translate over 800 wetland units derived from OWES evaluated wetlands into ELC language so that the data could be used in the development of a predictive vegetation community model for wetlands for the Frontenac Axis landscape. I collected data in the field using ELC methodology from 70 wetland sites to use in a statistical test of the model. This required identifying and describing plants and soils in detail. The results of this model were further used to develop habitat suitability models for species at risk in the same landscape.

One of the species for which a model was developed was the Blanding's turtle. I was part of a small group of experts that worked on developing the criteria and data needs for this model. This required an in-depth knowledge of the species, its habitat requirements and thorough knowledge of the landscape being modeled and related occurrence data and distribution of the species. I have recently been in the field assisting a PhD student with her field work I was asked to help demonstrate techniques for finding the species in the field and foster an understanding of its ecology and habitat requirements at the site and landscape levels. Further experience with Blanding's turtles includes membership and participation on the provincial multi-species turtle recovery team, radio-telemetry work on the species for 2 years in a provincial park.

"This is exhibit 2 referred to in the affidavit of Shelley LeVie-Oudiff sworn before me on this 24th day of April A.D. 20 09."

Shelley LeVie-Oudiff, a Commissioner, etc.,
 United Counties of Leeds and Grenville, for the
 Government of Ontario, Ministry of Government
 Services
 Expires September 14, 2010

S. LeVie-Oudiff

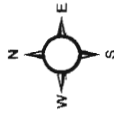
Leitrim Wetland

Legend

- Parcel Mapping
- Roads
- Railways
- Utility Lines
- Water Lines
- Evaluated Wetlands

Water Areas

- Water Area, Permanent
- Water Area, Seasonally Inundated
- Wetland Area, Permanent



1:20,000



Meters



This map is illustrative only. Do not rely on it as being a precise indicator of routes, locations of features, nor as a guide to navigation.

Designed and produced by: Information Management Section, Kemptville District, Ontario Ministry of Natural Resources.

Source of Information: MNR District NRVIS Database 2008 and external MNR coverages.

Projection: UTM NAD83, Zone 18, Metres

Published June 2009



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