

March 29, 2010

Dear Minister of the Environment:

I am writing to you regarding the Class C Environmental Assessment of provincially-owned land in the City of Hamilton (former City of Stoney Creek) which is a portion of the Eramosa Karst Area of Natural and Scientific Interest (ANSI) and that the Ontario Realty Corporation (ORC) designates as parcels E, F, G and H and wishes to sell for development.

I am requesting that the Minister of the Environment (the Minister) make an order for the project to comply with Part II of the Environmental Assessment Act (referred to as a Part II Order), which addresses individual environmental assessments.

This text document (karstfinal.doc) is my final submission regarding the Eramosa Karst ANSI class C environmental assessment. Please use this version to replace my previously submitted incomplete version (pleasereadme.doc). The earlier version was on a DVD mailed to your 135 St. Clair Avenue West address. That DVD arrived at your address at 11:59AM on March 26th, 2010. That DVD also contained photos and other computer files that are part of my submission and are referred to below. Please retain the DVD to view those photos and supporting documents.

I apologize in advance to any reviewers reading my submission for its rough and unpolished state. Unlike the paid consultants who have had at least 36 months to work on their EA, the comment period chosen for me as a volunteer was 2 months, during which time there have been illnesses in my family.

The notification of the completion of the study that I received from Ecoplans (see DVD: ea2010\karstea.pdf) is deficient in several respects. It says that a copy of my request "must" also be sent to "the project manager", but the project manager is not identified and no contact information is given. Since I do not have the time to try to guess what Ecoplans wants, I am hopeful that the Minister will be willing to share a copy of my submission with whoever the "project manager" is. Another deficiency in the notice is that nowhere in its two page length does it mention either the word "karst" or the words "Area of Natural and Scientific Interest". The "subject lands" are part of the Eramosa Karst ANSI, and the repeated failure of both Ecoplans and the ORC to make this clear during their communications about the EA has misled the public. Looking at the EA documentation, I also think that this lack of full disclosure about the nature of the proposed undertaking has also misled other agencies and the First Nations.

INTRODUCTION

The Eramosa Karst Conservation Area and Eramosa Karst Area of Natural and Scientific Interest are destined to become an isolated pocket of wildlife habitat stranded in a sea of development. Development has already occurred to the north and east, and is ongoing to the south. Development to the west is currently being planned. The only question is whether the final size of the Conservation Area will be 180 acres (as currently designated), or 260 acres (if the feeder ANSI lands are added). It is well known from island biogeography that the number of species an area can sustainably support increases greatly with increased size. This is due to a number of reasons, such as the need to maintain adequate resource (e.g., feeding) areas and stochastic (chance) events like local extinctions in isolated populations. The ecological functions and environmental integrity of the Eramosa Karst ANSI are best maintained if the plant and animal species in the

ANSI-subject lands are not destroyed by the razing that precedes the building of roads, buildings, and other hard structures. The best way to promote the long term ecological stability of the Eramosa Karst ANSI would be to add the 80 acres of the ANSI feeder area to the currently designated Eramosa Karst Conservation Area.

The karst ANSI contains hundreds of species of wildlife, most of which have been observed on the ANSI-subject lands. Four species at risk have been observed on ANSI lands (chimney swift, monarchs, milk snake, butternut), two of which were observed on the ANSI-subject lands (chimney swift, monarchs). Despite this, Ecoplans told the public at both Public Information Centres: “No federally or provincially designated species of conservation concern were observed.” (see files misc\pic1 and 2).

Species at Risk found in the Eramosa Karst Area of Natural and Scientific Interest

Butternut tree	<i>Juglans cinerea</i>	Endangered	ANSI-Core
Chimney swifts	<i>Chaetura pelagica</i>	Threatened	ANSI-Subject lands
Eastern milk snake	<i>Lampropeltis triangulum</i>	Special Concern	ANSI-Core
Monarch butterfly	<i>Danaus plexippus</i>	Special Concern	ANSI-Subject lands

The reasons for Ecoplans’ failure to report the species at risk that live in the Eramosa Karst ANSI during the public consultation process are likely varied. Two of the species at risk sightings (chimney swift, milk snake) are more recent than the Ecoplans faunal surveys, which are now more than two years stale. The failure of Ecoplans to see butternut trees is probably correlated with the inconsistent nature of the Ecoplans botanical inventory, which is discussed below. Amazingly, Ecoplans did detect monarchs on the ANSI-subject lands (see ea2008\Ecoplans85), but for some reason did not report this to the public.

There are several types of specialized and rare wildlife habitats present in the Eramosa Karst Area of Natural and Scientific Interest. Their importance for conservation of biodiversity is underscored by the fact that southern Ontario is Canada’s species at risk hotspot. This is because there are many species at risk in the area, and their small pockets of remaining available habitat are being destroyed by development (such as the razing being promoted as Alternative 5 of this EA). The ANSI contains many cave features that are clearly specialized wildlife habitat. Despite repeated requests that began over 2 years ago (September 2007), Ecoplans/ORC have refused to conduct any biological inventories of any of the cave habitats. This means that the identity and habitat needs of the cave fauna known to exist in the Nexus and Olmstead Caves is absent from this EA. It also means that other specialized wildlife use of the caves, such as cave nesting birds (see photos\ Lewis_PottruffCaveWindow), have had to be discovered by Boy Scouts rather than the ecological consultants paid to conduct this EA.

Other examples of specialized wildlife habitat include hawthorn-hedge shrike habitat (photos\shrike), long eared owl nesting habitat (photos\owl and Baker_owlet), migratory bird stopover habitat, and a monarch butterfly migration stopover site.

The lands that are the focus of this Class Environmental Assessment are all publicly owned and are all part of the Eramosa Karst Area of Natural and Scientific Interest (ANSI). Prior to the start of this Class EA, the Ontario Realty Corporation (ORC)

announced its intention to sell these lands for development. The ORC proposes razing this part of the ANSI and replacing it with roads, water supplies, sewers, storm sewers, single detached homes, and multiresidential units both on top of and under (by excavation) the Eramosa Karst Area of Natural and Scientific Interest (ANSI). I am concerned that the ORC has used large (but undisclosed) amounts of public money to pay consultants to advance its objective.

The consultants conducted an incomplete inventory of the plant and bird life found in the area, and made only incidental observations of other large groups of taxa (e.g., amphibians, mammals, lepidopterans) and no observations at all of other large groups of taxa (e.g., other Arthropods (Arachnids, Crustaceans), Lichens, Fungi, Mosses). Non-Ecoplans scientists entering area caves (both Olmstead and Nexus) have reported seeing cave fauna in 100% of the caves that were entered. Despite being informed of the presence of cave fauna more than two years ago (early September 2007), Ecoplans/ORC have steadfastly refused to conduct a biological inventory of the cave fauna, resulting in a major blind spot in this Environmental Assessment.

Throughout this process virtually all prepared poster boards, reports, maps, aerial photography, etc. have listed areas currently within the Eramosa Karst Conservation Area as “ANSI Core” and “ANSI Feeder Creek” while listing the areas that the ORC proposes to sell for razing as “Parcel H” (with no ANSI attached) (e.g., see Exhibit 2.1, page 9 of the EA on the DVD: ea2010/Chapters+1...). The “subject lands” (e.g., Parcel H) do not have “ANSI” attached to them even though they are part of the ANSI. It is particularly misleading to leave the “ANSI” off of Parcel H, while attaching “ANSI” to adjacent lands in either maps or charts in what appears to be an attempt to mislead the public into thinking that the lands that are the focus of this study are not part of the ANSI when in fact they are.

“Razing” is a carefully selected word that most accurately describes construction practice in the area and would be the almost certain consequences of approval of the Ecoplans/ORC plan to sell part of the Eramosa Karst Area of Natural and Scientific Interest for “development”.

Raze: 1) to destroy to the ground, demolish, 2) to scrape, cut, or shave off. (Webster’s Dictionary)

The standard construction practice of razing can be seen from space in Google Earth images of the area taken just seven months ago (see DVD: misc\ekdev.jpg). From the ground, the razing can be seen in photos (see DVD: photos\razed). For all photos in this submission, the location where they were taken is designated at the end of the file name by _X, where X is the location given in the location table at the end of this report. As can be seen both from space (ekdev) and from the ground (razed) is that the standard practice is to SCRAPE or SHAVE OFF the topsoil (with all of its associated life forms) and pile it to the side (all of those living things just impede progress...). There are good reasons to think this practice would be no different for the proposed construction in the karst ANSI endorsed by Ecoplans.

First, the Minister of the Environment should have been made aware of the conflict of interest apparent in this EA since one of the consultants hired by Ecoplans/ORC is also involved with much of the development occurring in this area.

The submitted documentation for this EA indicates that efforts will be made to contain piles of razed off topsoil with silt fencing. The lack of effectiveness of this practice can be seen in photo “fallensiltfence_DK”. When this silt fence failed, it released construction sediment onto the adjacent agricultural land. In photos razed_DL, mounds of piled soil release sediment directly into the street (no site control). In photos razed_DK, the lack of site control resulted in the storm sewer becoming totally plugged with sediment (hence the ponding). The excess eroded sediment then proceeded onto adjacent agricultural land.

If there is any inaccuracy involved with the use of the word “razed”, it is that it UNDERSTATES the damage that the proposed undertaking would do to the Eramosa Karst ANSI. That is because “razing” only describes the destruction “to the ground”. The development alternative “favored” by Ecoplans/ORC also includes EXCAVATION (below ground) of the Eramosa Karst ANSI, for both basements and infrastructure.

Throughout this submission “ANSI-to-be-razed” refers to the subject lands of this class C environmental assessment, namely parcels E, F, G and H of land in the City of Hamilton (former City of Stoney Creek) which is a portion of the Eramosa Karst Area of Natural and Scientific Interest (ANSI). If the Minister of the Environment approves the class C EA, these lands will be razed if the ORC’s preferred alternative (5) is implemented.

BIOLOGICAL INVENTORY COMMENTS (general)

Note to reviewers: Ecoplans makes use of many different types of lists of designations that I do not have access to. As a result, I have no way of knowing whether or not the statements Ecoplans makes based on these lists are accurate. However, based on the numerous factual errors and math errors scattered throughout this EA (only some of which are detailed below), it is probable that some of the statements Ecoplans makes with reference to these lists are also inaccurate. Caveat reviewer. I also do not know where the many species that I personally observed on the ANSI-Subject lands (but that Ecoplans missed) fall on these various lists. If the species I found were “NHIC, or Regionally rare, or rare nesting, or”, I just wouldn’t know. If any of these designations will matter in the ultimate decision process, I (a volunteer in this process) am asking the professionals to find out whether the species I found and list in this report belong on any of the various lists.

Throughout this EA, the nature of the ANSI-subject lands is misrepresented. There are repeated references to “active agricultural use”. For example: “The subject property is dominated by active and historical agricultural land use”. This is a factually incorrect statement. There is no “active agricultural use” on the subject lands, and there hasn’t been for many years. None of the subject lands have been farmed since 2003. Therefore the “active agricultural use” statement is simply factually incorrect. Please look at misc\ekandag, and at photos\groundcover. ANSI-Parcel H is entirely north of Rymal Road, and the difference between these non-farmed lands and the farmed lands south of Rymal road is evident from space. The EA should not be accepted with this false statement in place.

BOTANICAL INVENTORY COMMENTS

In order to understand my concerns with this part of the EA, it is important to understand the timeline of the public consultation process as it relates to the botanical inventory:

- 1) March 27, 2007: Ecoplans vegetation survey (listed in 2008 draft report)
- 2) June 19, 2007: Notice of Study Commencement.
- 3) August 3, 2007: Ecoplans vegetation survey (listed in 2008 draft report)
- 4) October 4, 2007: Ecoplans vegetation survey (listed in 2008 draft report)
- 5) June 11, 2008: Public Information Centre #1.
- 6) October 24, 2008: Ecoplans vegetation survey (not listed in 2008 draft report)
- 7) June 18, 2009: Public Information Centre #2. (Ecoplans draft report, dated August 2008, was “available for viewing” at this meeting but no copies made available for public review)
- 8) May 29, 2009: last Ecoplans vegetation survey
- 9) January 26, 2010: Notice of completion of EA (reports first available to public).

To begin, at both Public Information Centres Ecoplans/ORC stated on their poster boards that: “No uncommon or specialized vegetation types present. Dominated by tolerant, culturally influenced vegetation communities. Low botanical diversity.” Ecoplans/ORC further stated that: “No federally or provincially designated species of conservation concern were observed.” And “No federally or provincially designated species of conservation concern were recorded.”

These statements (and those at the first PIC in particular) were based on the three vegetation surveys conducted before the first PIC (dates 1, 3, 4). However, at the second PIC (June 18, 2009) Ecoplans had for “display purposes” some of the draft reports. There were literally hundreds of pages of reports “on display”, but with no way to take them away for reading (copies were not available, would not be made available, and I was told that I could not take away copies to make copies for myself and return them). Fortunately, I had a digital camera with me and was able to take photos of some of the reports (see ea2008). In particular, I would like to call the Minister’s attention to page 6 of the Ecoplans report (DVD: ea2008/Ecoplans09) which states: “ANSI lands adjacent to Parcel H were generally inventoried, but a comprehensive botanical inventory was not completed for these lands.” (Again, Ecoplans elected to fail to mention that Area H is also ANSI lands, but I will not be listing all of the many, many locations where this deception is repeated.) The more important point here is that Ecoplans went to the public with statements about the botanical character of the ANSI lands to be razed based on an incomplete survey of those lands. An analysis of how incomplete that survey was will follow below.

But, not only did Ecoplans go to the public with conclusions based on incomplete information, it also went to outside agencies with the same incomplete information. Before the incomplete botanical inventory was resumed in Oct.08, Ecoplans/ORC met with the following agencies-groups (many more than once): City of Hamilton, Hamilton Conservation Authority, Hamilton-Wentworth Catholic District School Board, Trinity Neighborhood Community Advisory Committee, Hamilton-Wentworth District School Board, Ministry of Natural Resources, Ontario Growth Secretariat, Environmental Commissioner’s Office, Ministry of the Environment, the City of Hamilton Environmentally Significant Areas Impact Evaluation Group, and First Nations. If these

groups were being fed the same information that the public was in the Public Information Centre, then these agencies were also being given conclusions on the environmental value of the lands based on incomplete survey work.

Based on the character of the final EA report, as well as the minutes from some of the consultations, it appears likely that all of these groups were misled about the fact that the most of the lands that Ecoplans/ORC wishes to raze are in fact ANSI lands.

The Ecoplans 2007 vegetation survey that was the basis for this massive public misinformation campaign can be seen on the DVD (ea2008/Ecoplans69-71). It lists a grand total of 90 species of vascular plants from the entire Core-ANSI and ANSI-to-be-razed subject area. This is an extremely poor survey that I will hereafter refer to as the “Ecoplans Public Consultation Standard (EPCS)”, since it was the basis for the majority of the public consultation work Ecoplans did with both the public and outside agencies. So just how bad is the EPCS? (see below)

Ecoplans completed its vegetation survey on May 29, 2009 (long after public and agency consultations ended) and released it to the public Jan.26, 2010. This “post consultation” survey lists 151 species of vascular plants, but it continues the deception of splitting the species in to “ANSI (Core/Buffer)” and “Parcels E - H”. This continues to obscure the fact that most of land that Ecoplans/ORC wishes to raze is in fact in the ANSI.

I’m not really a plant guy, but if I take either 1) a person with a passing interest in plants (e.g., the missus) or 2) plant experts for a short walk in the karst area, they are able to point out species missed even in the final Ecoplans survey. I do not think that these scattered and casual observations constitute “an inventory”, but they point out a small subset of the deficiencies that persist even in the final Ecoplans botanical inventory.

Table A: Species that exist in the ANSI but were not found anywhere by Ecoplans:

Serviceberry	<i>Amelanchier</i> sp	ANSI Area H hedgerow
Spike rush	<i>Eleocharis</i> sp	Area H ANSI fields, Area H ANSI woodlot
Wild lettuce	<i>Lactuca canadensis</i>	ANSI Area H hedgerow
Watercress	<i>Nasturtium officinale</i>	ANSI Core
Ninebark	<i>Physocarpus opulifolius</i>	ANSI Area H Woodlot
Willows	<i>Salix</i> sp	ANSI Core
Bulrush	<i>Scirpus</i> sp	Area H ANSI woodlot, ANSI Core
Giant goldenrod	<i>Solidago gigantea</i>	Area H ANSI fields
Rough stemmed goldenrod	<i>Solidago rugosa</i>	Area H ANSI fields
Hybrid cattail	<i>Typha glauca</i>	Area H ANSI wetland, ANSI

		Core wetland
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Table B: Species that exist in subsections of the ANSI but were not found in those areas by Ecoplans:

Bitternut Hickory	<i>Carya cordiformis</i>	ANSI Area H Woodlot, ANSI Area H hedgerows
Shagbark Hickory	<i>Carya ovata</i>	ANSI Area H isolated in fields, ANSI Area H hedgerow
Grey Dogwood	<i>Cornus racemosa</i>	ANSI Area H isolated in fields
Trout lily	<i>Erythronium americanum</i>	ANSI Area H hedgerow
Running strawberry bush	<i>Euonymus obovatus</i>	ANSI Area H West Hedgerow
Slender rush	<i>Juncus tenuis</i>	ANSI Area H hedgerows
Ironwood	<i>Ostrya virginiana</i>	ANSI Area H Woodlot
May Apple	<i>Podophyllum peltatum</i>	ANSI Area H hedgerow
Self heal	<i>Prunella vulgaris</i>	ANSI Area H hedgerow
Wild black cherry	<i>Prunus serotina</i>	ANSI Area H hedgerow
Bur Oak	<i>Quercus macrocarpa</i>	ANSI Area H isolated in fields
Narrow leaved cattail	<i>Typha angustifolia</i>	Area H ANSI wetland, ANSI Core wetland
Broad leaved cattail	<i>Typha latifolia</i>	Area H ANSI wetland, ANSI Core wetland

Plant location notes:

The failure of the Ecoplans botanical inventory (Appendix E) to include any of the wetlands that are within the Eramosa Karst ANSI is perplexing, and it results in both misrepresenting the ecological complexity of the ANSI and an underreporting of the number of species present both within the ANSI-Core and ANSI-to-be-raised. I am aware of three wetlands in the ANSI, and there are probably more. The three wetlands I observed in the ANSI include 1) the ANSI Area H wetland at location "Z" (see locations table 2) the Nexus connected wetland, replete with a 30m long boardwalk to keep your feet dry (location CAA), and, 3) the wetland that ends at watercress sink (location CAD).

These are all large landscape features that are visible from space (e.g., see misc\boardwalk_CAA and misc\willows_CAD).

The absence of wetlands from the botanical inventory table raises the question of whether these wetlands were surveyed at all. There are reasons to believe that they were not.

First, bulrush (*Scirpus*) occurs in at least three locations in the ANSI (DN, CAA, and CAC), but is not recorded as being present anywhere in the ANSI in the Ecoplans inventory. Photos of the *Scirpus* can be seen in photos\Scirpus. Since the species of *Scirpus* cannot be reliably identified from the photos, it is listed as “*Scirpus* sp” in Table A.

Willows (*Salix* sp) are not recorded anywhere in the Ecoplans botanical inventory. There are many large specimens, which are easily distinguishable from space (see misc\willows_CAD). A photo of one is in photos\Salix_CAD. Elsewhere in the Ecoplans report, there is even a reference to “Willow Spring”. When Ecoplans cannot identify large trees either in the real world or in their own written submission, it raises serious questions. If Ecoplans cannot identify large willow trees (genus *Salix*) at all, what is the likelihood that they can distinguish between two similar species within the same genus? One example that comes to mind is the two species within the genus *Juglans*: namely walnut (*J.nigrans*, recorded by Ecoplans), and butternut (*J.cinerea*, an Endangered species found BY OTHERS in the ANSI, but not found by Ecoplans).

One of the many things missing from this botanical inventory is a professional disclosure of its limitations: what was searched, what wasn't, how the search was done, etc. There is no analysis of what types of errors could creep into the inventory. Species (including Species at Risk) could have been missed due to either recognition failures or identification failures. There could be gaps of years between species appearances from seed banks. I see no reference to a seed bank analysis. Squirrels travel throughout the ANSI (including subject lands) and cache seeds (see photos\seedbank_J). This seed cache was under a stump in the west hedgerow of the ANSI-subject lands. The point is that for trees with edible seeds, such as the Endangered butternut *Juglans cinerea*, the entire ANSI (including the ANSI-subject lands woodlot-hedgerow complex) is one integrated habitat unit. In fact, the woodlot and deciduous hedgerows of the ANSI-subject lands could provide superior recruitment habitat to the ANSI-Core woodlands, because young butternut trees need more light than is available in forest interiors. The existing contiguous habitat of the ANSI (Core and Subject lands) is one integrated habitat unit for the butternut tree. This Environmental Assessment fails to mention that if Alternatives 4 or 5 are approved, the resulting razing of 31% of the habitat available to the Endangered species *Juglans cinerea* will put its continued existence in the ANSI in jeopardy.

Watercress (*Nasturtium officinale*) is not recorded anywhere in the Ecoplans botanical inventory. It occurs in the ANSI core. See photos\watercress. There is a large sign that marks their presence (see photo). The presence of watercress is noted elsewhere in the Ecoplans submission, but is absent from the botanical inventory table. The failure of Ecoplans staff to properly record plant species marked by signs is bad enough, but when Ecoplans fail to consider references to species in their own reports it raises questions about whether anyone at Ecoplans even bothers to read what Ecoplans is

writing. And if Ecoplans is not reading its own material, what confidence is there that Ecoplans is dealing properly with written material arriving from the public?

The willow and watercress are visible from the trails, but were still missed by Ecoplans.

The species diversity and spatial extent of cattails is underreported in the Ecoplans botanical inventory. I am a published author on the subject of cattail species in Ontario:

Kuehn, M.M., Minor, J.E., White, B.N., 1999. An examination of hybridization between the cattail species *Typha latifolia* and *Typha angustifolia* using random amplified polymorphic DNA and chloroplast DNA markers.

Molecular Ecology 8, 1981–1990.

It should be noted that the vast majority of the work was done by Dr.Kuehn and was conducted in Dr.White’s lab. But I can say with some confidence that Ecoplans is underreporting the cattails present in the ANSI. A quick summary of the above article is that three species of cattail are common in this area: *Typha angustifolia*, *T.glauca*, and *T.latifolia*. Due to phenotypic character overlap between the species definitive species identification requires a genetic (e.g., DNA) test. Frequently cattail stands are dominated by *T.glauca*, which in virtually all cases is an F₁ hybrid with a *T.latifolia* male parent and a *T.angustifolia* female parent. Since *T.glauca* is first generation hybrid, whenever more than one species of cattail is present usually all three species are present.

If you examine the cattails from the Area H wetland (photos\Typha_Z), it is likely that more than one species of cattail is present. If you examine the cattails for the ANSI Core (photos\Typha_CAD), it is likely that these are either *T.glauca* or *T.latifolia* (or both).

Considering that the three (or more) wetlands present in the ANSI are not listed in the botanical inventory, the inventory is likely deficient in the wetland species that are present there.

Ninebark (*Physocarpus opulifolius*) is in the Area H ANSI woodlot but appears nowhere in the Ecoplans botanical inventory (photos\Physocarpus_DW).

It is nice to see that Ecoplans was able to locate some *Euonymus obovatus* after I informed them it was present. (The species name is misspelled in Ecoplan’s botanical inventory table, and needs to be corrected.) However, Ecoplans was still unable to locate it in the ANSI-area-to-be-razed where I told them it was. The photo (Eobovatus_J) and the exact location (J, see locations table) are given to assist them in improving their survey. As previously noted by myself, and now by Ecoplans, this species is typically found in forest habitats. Its presence in the hedgerow indicates that the hedgerows are more complex ecosystems than perceived by Ecoplans. Ecoplans also failed to notice may apples and trout lilies in the hedgerows, but they are there. A photo of a may apple in a hedgerow: photos/mayapple_I. These three species are considered forest indicator species, which means that the hedgerows can be considered extensions of the woodlot (and that the woodlot is large enough to warrant protection).

The current Ecoplans botanical inventory continues to underestimate the species richness of the goldenrod species present in AreaH-ANSI. A quick look at the *Solidago* species present in the general area of “DU” (see Locations Table) revealed that the two

most numerous species there were: *S. rugosa* (rough stemmed goldenrod), and *S. gigantea* (giant goldenrod). The Ecoplans botanical inventory lists only 3 species of *Solidago*, none of which are amongst the 2 species listed above. This means that the Ecoplans botanical inventory for *Solidago* is at best only 60% complete. Since there are 3 *Solidago* species at risk in Ontario, there is a significant chance that such an incomplete survey could have missed one.

Spike rush (*Eleocharis* sp) exists in at least three locations in the ANSI-to-be – razed area. The locations are given in the locations table as N, L and T. Photos of the spike rushes from two of the locations are in photos\Eleocharis. Ecoplans failed to find any *Eleocharis* species anywhere in the area. Considering that there are two species at risk of *Eleocharis* in Ontario, a survey success rate of 0% for *Eleocharis* raises serious doubts about the value of conclusions Ecoplans makes based on their survey work.

The inability of Ecoplans to see and identify trees standing isolated in Area H fields is all the more distressing because I had informed Ecoplans of their precise identities and locations. Here, once again, is the table of those trees and their locations:

Table C: Trees standing in Area H ANSI fields and not listed in Ecoplans botanical inventory:

N 43°10'54.3"	W 79°47'55.3"	Bur Oak	<i>Quercus macrocarpa</i>
N 43°10'54.1"	W 79°47'54.5"	Bur Oak	<i>Quercus macrocarpa</i>
N 43°10'51.2"	W 79°48'04.7"	Shagbark Hickory	<i>Carya ovata</i>
N 43°10'57.7"	W 79°48'02.6"	Bur Oak	<i>Quercus macrocarpa</i>
N 43°10'57.5"	W 79°48'00.9"	Shagbark Hickory	<i>Carya ovata</i>
N 43°10'56.7"	W 79°47'57.8"	Bur Oak	<i>Quercus macrocarpa</i>
N 43°10'47.3"	W 79°47'54.9"	Bur Oak	<i>Quercus macrocarpa</i>
N 43°10'47.3"	W 79°47'55.3"	Grey Dogwood	<i>Cornus racemosa</i>
N 43°10'47.2"	W 79°47'54.4"	Bur Oak	<i>Quercus macrocarpa</i>
N 43°10'47.2"	W 79°47'54.8"	Grey Dogwood	<i>Cornus racemosa</i>
N 43°10'46.9"	W 79°47'53.9"	Bur Oak	<i>Quercus macrocarpa</i>

There are 10 cases in the 2010 Ecoplans survey where the species is not identified (e.g. *Carex* sp., *Rosa* sp.). What are those species? There are two *Carex* species at risk in Ontario and one *Rosa* species at risk in Ontario. Given Ecoplans' inability to identify many species past genus, the possibility exists that these unidentified species are in fact species at risk. This is particularly true of the *Carex* species complex, since it is likely that the number of unidentified "*Carex* sp" in the ANSI is greater than the one indicated in the Ecoplans botanical inventory table. There are also species of *Crataegus* that are candidates for listing as species at risk. Since the number of identified species of hawthorns from the hedgerows is probably low as listed in the Ecoplans table, there are probably more than one species of *Crataegus* hiding under the *Crataegus* sp listing.

There are general problems with the inconsistent way plant community designations are used in this environmental assessment. These include, but are not limited to: 1) the failure to recognize existing wetlands in their botanical inventory (discussed above), 2) the status of the woodlot in the ANSI-Area H, and 3) the status of the fields the ANSI-Area H.

In its first botanical inventory (see ea2008), Ecoplans designated the ANSI-Area H woodlot as “deciduous forest” (see ea2008\Ecoplans69-71). Ecoplans resurveyed this woodlot and found several species of trees it had “missed” in 2007. These include white pine, green ash, pear, quaking aspen, and bur oak. Despite the discovery of multiple large individuals of five previously unsurveyed species of trees in the 2009 survey this woodlot was redesignated “cultural thicket/cultural savannah” (see ea2010). In Ecoplans math “deciduous forest” plus “white pine, green ash, pear, quaking aspen, and bur oak” equals “savannah”. I suspect Ecoplans’ estimate of the canopy cover is low, based in part on the widespread occurrence of mushrooms, lichens, and mosses (photos\bryophyte and moss_fungus) in the woodlot. I believe this area is best described as oak-hickory woodland. At a minimum, the 2010 Ecoplans Environmental Assessment needs editing for consistency. What is described as “thicket/savannah” some places (e.g. Ch.4 and Ap.E) is described as “woodlot” (e.g., Ap.C) in others. It is incumbent upon the professionals in this process to eliminate inconsistencies in their Environmental Assessment so that reviewers do not have to waste time figuring out what they are referring to. It also inaccurate to describe this block as “small and isolated” (Chapter 4, page 41). The woodlot is in the middle of a continuous deciduous hedgerow that is 820m long (see misc\ekandag). In fact, it is possible that the “deciduous forest-deciduous hedgerow” unit as whole could qualify for protection either under provincial or municipal rules. The largest untreed gap between this hedgerow and the one to the west is only 22m, and the largest untreed gap between that hedgerow and the continuous cover of the ANSI-Core is only 42m. The grey squirrels, cottontails, coyotes, raccoons, turkeys, and deer that inhabit this woodlot do not view it as isolated, but rather view the Eramosa Karst ANSI as an integrated whole. Please compare the figure from this Environmental Assessment (ea2010\Ch.4, Exhibit 4.4) to an undoctored photo from Google Earth (misc\ekandag). The green dotted line does not exist in the real world. It cannot be seen from space, and it is not even marked on the ground. I have seen Threatened chimney swifts and Species At Risk monarchs cross it without knowing it. (Few people hiking in the karst ANSI know of its “existence”). This ANSI-Area H woodlot and its associated 820m long deciduous hedgerow are not “isolated”, but rather are part of the integrated whole of the Eramosa Karst ANSI. This Environmental Assessment neither accurately nor fairly represents the existing conditions of the ANSI-subject lands woodlot-hedgerow features.

There are inconsistencies with respect to how the ANSI-subject lands wildflower fields are described in this Environmental Assessment. In the botanical inventory, these fields are reasonably characterized as “old field regeneration” (Appendix E). However, in other places in the EA, the fields are described as “sparse vegetation and almost complete lack of ground cover” (e.g., Appendix E, page 33). This is not an accurate description of the existing conditions in the ANSI-Subject lands. Please see the photos on this DVD, particularly those labeled photos\groundcover. As can be seen, the current conditions of the ANSI-subject lands are a near total *presence* of groundcover: averaging waist high, frequently chest high, and occasionally more than head high. The cover is dominated by native wildflowers such as New England Aster (see photo\Anovaeangliae_DG). New England Aster is frequently associated with “tallgrass prairie habitats”. Another false description applied to the ANSI-Subject lands fields is the repeated description of them as “actively farmed” (e.g., multiple references in Appendix

C). None of the ANSI-subject lands fields have been farmed since 2003. Therefore the “agricultural uses” statements are simply factually incorrect. Please look at misc\ekandag. ANSI-Parcel H is entirely north of Rymal Road, and the difference between these non-farmed lands and the farmed lands south of Rymal road is evident from space. This Environmental Assessment does not either accurately or fairly represent the existing conditions of the ANSI-subject lands wildflower fields.

In summary, the Ecoplans survey prepared to the “Ecoplans Public Consultation Standard (EPCS)” listed 90 species of vascular plants. The post-public consultation survey (PPCS) listed 151 species of plants. Casual observations by volunteers easily found 10 species totally missed by Ecoplans, and a minimum of 38 cases where Ecoplans failed to identify a plant species in an area that they claimed to have surveyed. (Data for the 10 and 38 numbers is from Tables A, B, and C).

This means that the Ecoplans EPCS survey, is AT BEST, only 56% complete (90/161 species). Or, the Ecoplans Public Consultation Standard is to go to the public with conclusions about the nature of the karst ANSI based on a survey that missed A MINIMUM of 44% of the species present in the karst ANSI. That means that Ecoplans is comfortable going to the public and outside agencies with conclusions about the character of the Eramosa Karst ANSI based on a survey that had coin toss odds of being correct.

The Ecoplans PPCS is, AT BEST, only 94% complete (151/161 species). That is to say that final Ecoplans survey missed A MINIMUM of 6% of the plant species present in the karst ANSI. The probability that some significant species were missed in the final inventory cannot be ignored. This probability is underscored by the obvious nature of what was absent from the botanical inventory table (multiple wetlands, trees standing isolated in fields, large willow trees visible from space, species with signs indicating their presence, etc.).

With respect to Ecoplans assessment of the percentage of native plant species, Ecoplans once again seems to have misplaced plant species (in this case, 10 plant species). Ecoplans states (page 25): 151 vascular plant species were identified, 55 (39%) of which were nonnative. These numbers do not add up (or, to be more precise, do not divide out). It appears Ecoplans misplaced 10 species and divided 55 by 141 to obtain 39%. (Misplacing 10 species does not inspire confidence in Ecoplans ability to keep track of the biodiversity present in the Eramosa Karst ANSI.) The correct figure (based on Ecoplans incomplete data) is $55/151 = 36\%$. Since the majority of the species found by volunteers appear to be native (Table A: $9/10 = 90\%$), it raises the possibility that Ecoplans staff are somehow selectively deficient in their ability to identify native species. (This deficiency would also mean that Ecoplans staff would be more likely to miss rare species or species at risk.) Ignoring Ecoplans’ deficiency and pooling all the data, the best estimate of the percentage of nonnative species present in the ANSI is $56/161 = 35\%$. Conversely, the majority (65%) of the species present in the ANSI are native.

In the “alternatives chart” (see discussion on Appendix C below), Ecoplans implies that leaving the ANSI-to-be-razed areas undisturbed (Alternative 1) increases the risk of invasive species entering the Eramosa Karst Conservation Area more than the razed development alternatives (4 and 5). This is incorrect on two grounds: First, it is well known from the ecology literature that the potential of spread of invasive species is greatly increased after the types of disturbance that alternatives 4 and 5 promote. Second,

after the construction phase is over it is likely the resulting plant communities will be majority NONNATIVE as opposed to the majority native that they are now. Therefore, alternatives 4 and 5 pose a much greater risk to the Eramosa Karst Conservation Area than alternatives 1 or 2 do. The EA should not be accepted with this error in place.

Comments on Faunal Inventory

A major problem with the all of the faunal inventory work is that the last faunal inventory work done in the karst ANSI by Ecoplans is now more than two years stale. The Ecoplans faunal observations were made between March 27 and October 4, 2007. This period was extremely dry with only 50% of the normal rainfall over the 192 day observation period (normal: 513 mm, 2007: 257mm). (Precipitation data from Hamilton Airport, climate norms based on the data from 1971-2000. Precipitation data compiled by Glenn Rivers.) The dry weather, combined with the limited time for field regeneration (since agriculture stopped on the subject lands in 2003) results in the photos attached to the Ecoplans EA. (The Ecoplans photomosaics are misleadingly labeled: the mosaics are labeled 2009 but the pictures taken in them were all taken in 2007.) The Ecoplans survey refers to “a near total absence of ground cover”, but this is an inaccurate description of the current conditions in the ANSI-to-be-razed lands. For less stale observations, please refer to the photos on this DVD, particularly those labeled photos\groundcover. As can be seen, the current conditions of the ANSI-to-be-razed lands are a near total *presence* of groundcover: averaging waist high, frequently chest high, and occasionally more than head high. The Ecoplans survey says there are no vernal pools present, but in 2009 there was standing water in multiple locations scattered all over the ANSI-to-be-razed lands not only in the spring but also all summer long (see photos\vernalpools). The Ecoplans survey found no frogs in the ANSI-to-be-razed lands. In 2009 two species of frogs were found in locations scattered all over the ANSI-to-be-razed lands (see photos\greenfrog and leopardfrog). The Ecoplans EA grossly mischaracterizes the **existing conditions** of the ANSI-subject lands, and it should be rejected as inaccurate.

Throughout this document, terms ANSI-subject lands and ANSI-to-be-razed lands are used interchangeably. Most of the area of the ANSI-subject lands is contained in ANSI-Area H.

Avifaunal Inventory

Amongst the many things missing from this study is any professional assessment and disclosure with respect to limitations of the study. Birds come and go in patterns with varying time constants (e.g., diurnal, nocturnal, seasonal). What types of either daily (e.g., nocturnal) or seasonal (e.g., winter migration) movements that could have been missed are not discussed. Birds wiggle, fly, and hide. There is no mention of birds that were seen but not identified. I find it hard to believe that Ecoplans staff were able to identify all of the birds that were present during their field surveys.

This section continues the obfuscation of referring to the areas in question as “Area H” and “ANSI-Core” which is misleading because Area H is also part of the ANSI. I will be referring to “ANSI-Area H” as “ANSI-to-be-razed”, since this is what will occur to “ANSI-Area H” if Ecoplans/ORC’s alternative 5 is approved.

It would be helpful to everyone trying to decipher Ecoplans’ work if Ecoplans could impose some form of order on its data in the Avifaunal Inventory (e.g.,

alphabetically order the scientific names as was done for the botanical inventory). The lack of order seems to be confusing even Ecoplans, since two species of birds disappeared from one table and reappeared on the other between 2008 and 2010 (compare ea2008\Ecoplans75-77 with ea2010\AppendixE).

Perhaps this confusion can be excused as the 2008 inventory was only “draft”, but then it must also be recognized that the entire public consultation process occurred with its leader (Ecoplans) in a state of confusion.

Putting aside the confused public consultation process, Ecoplans avifaunal work is still confused even in its “final” form. The “final” EA states:

“A total of 46 bird species (breeding and fall surveys) was recorded for the entire study area including Parcels E-H and adjacent lands (Appendix E).”

However, if you examine the Tables in Appendix E (and sort through their disorganized state) you find that the number of species recorded in Ecoplans’ surveys is in fact 45 (not 46).

Since 45 is the real number for the bird species found by Ecoplans in their surveys, I will be using this number in the discussion below.

I conducted a few casual bird observations during walks in the karst ANSI, and those are summarized in Table D. I observed all of these species personally, but some of the photographs were taken by others (in the ANSI) and donated to me (they are designated with the last name of the donor). All of these species (except Hummingbirds) have been observed on the ANSI-to-be-razed lands.

Table D: Bird species observed in the Eramosa Karst ANSI but not seen by Ecoplans

Common name	Scientific name	Photos on DVD: photos\
Cooper’s hawk*	<i>Accipiter cooperii</i>	Raptor_tid_E
Mallard duck	<i>Anas platyrhynchos</i>	Mallards_F
Ruby throated hummingbird**	<i>Archilochus colubris</i>	Welch_hummingbird_CA
Long-eared owl	<i>Asio otus</i>	Owl_CA (x4) Baker_owlet_CA (x3)
Chimney swifts (Threatened)	<i>Chaetura pelagica</i> (Threatened)	Hard to photograph “swifts” (they are very swift)
Palm warbler	<i>Dendroica palmarum</i>	Palmwarbler_DT
Northern shrike	<i>Lanius excubitor</i>	Shrike_G (x2)
Mockingbird	<i>Mimus polyglottos</i>	Mockingbird_D

Threatened Chimney swifts were seen feeding over ANSI-to-be-razed wildflower fields)

*this photo taken in ANSI-to-be-razed. Ecoplans observed Cooper’s hawks, but not in ANSI-to-be-razed.

**Hummingbirds observed only in ANSI-Core.

The photos were all taken in the Eramosa Karst ANSI. For exact locations, see locations table at the end of this document (the letter at the end of the file name (_X) for the photo corresponds to the letters designating the location in the locations table). All of these species have been seen on ANSI-to-be-razed lands with the exception of the hummingbird.

So a few casual observations by a single volunteer found 7 bird species not found by Ecoplans. The professional Ecoplans survey found 45 species. This means that the Ecoplans survey is AT BEST 87% complete. The Ecoplans avifaunal inventory missed A MINIMUM of 13% of the bird species present in the ANSI. It is not surprising, therefore, that a few casual observations by a single volunteer found a Species At Risk (Threatened) not found in the Ecoplans survey. The ANSI-to-be-raised lands are also suitable habitat for other avian species at risk, such as yellow-breasted chat (*Icteria virens*), loggerhead shrike (*Lanius ludovicianus*), short-eared owls (*Asio flammeus*), and nighthawks (*Chordeiles minor*).

Avifaunal notes:

Migratory stopovers

The palm warbler (photo\palmwarbler_DT) was observed on September 2, 2009 at the ANSI-subject lands western hedgerow with a small mixed flock of palm warblers and yellow-rumped warblers. This would appear to have been a “migratory stopover”. The same can be said for the Northern shrike migratory stopover (photos\shrike) at the ANSI-subject lands eastern hedgerow on February 12, 2010. Since these observations (2009, 2010) are much more recent than the stale Ecoplans 2007 faunal observations, it would appear that the “existing conditions” are that the ANSI-subject lands are Significant Wildlife Habitat for Migratory Stopovers. The Ecoplans Environmental Assessment, due to the outdated data in its 2007 avifaunal survey, underestimates the wildlife habitat significance of the ANSI-Subject lands.

Long-eared owls

This Environmental Assessment does mention long-eared owls (*Asio otus*) as being a Regionally Rare species occurring on “adjacent ANSI lands” (Chapter4, page 42). This description is both inaccurate and incomplete. First, “adjacent ANSI lands” is misleading with respect to the fact that the subject lands are also *part* of the ANSI, and are not *adjacent* to them. This deception occurs in many forms throughout the Environmental Assessment and they all need to be corrected. In fact, the entire public consultation process was tainted by this and other abuses of planning language.

The description does not capture the fact that the long-eared owls were observed nesting and rearing young in the ANSI by many people. On the morning of October 2, 2009, I observed one flying from the ANSI-subject lands western hedgerow (approximately “DV” from the locations table) into the ANSI-subject lands woodlot (approximately “M”). It is not surprising that the owls would make use of the ANSI-subject lands, because the entire ANSI-Area H region is heavily populated with owl food. This food includes *Peromyscus*, *Microtus*, and *Blarina* (see photos\Peromyscus (x6), vole (x5), and shrew). In fact, if you turn over any of the many boards scattered around ANSI-Area H, you will almost always encounter either rodents or signs of recent rodent activity.

Many people observed the long-eared owls and their owlets, and several took pictures (photos\owls and Baker\owlets). This makes this the first confirmed breeding record for long-eared owls in the Hamilton Study Area since 1969. Reference:

Curry, R. 2006. Birds of Hamilton and surrounding areas. Hamilton Naturalists Club.

The Hamilton Study Area is a 40 km radius circle centered on downtown Hamilton. It also encompasses the municipalities of Milton, Oakville, Grimsby, Smithville, Cayuga, Hagersville, Brantford, and Cambridge. So, the long-eared owl breeding habitat in the Eramosa Karst ANSI is not only specialized wildlife habitat, it is also unique habitat within a 5026 km² region. It is the only confirmed breeding record within that 5026 km² region in more than 40 years. This observation affects many of the lists, and conclusions based on those lists, in the EA. Therefore, the submitted EA does not accurately reflect the existing conditions of the Eramosa Karst ANSI.

Hawthorn-hedgerow shrike habitat. I observed and photographed Northern shrikes (*Lanius excubitor*) on two different locations within the ANSI-subject lands (photos\shrike). The ANSI-subject lands are specialized wildlife habitat for shrikes because they contain both a year round food source for shrikes (see owl section above) plus another habitat component peculiar to shrikes (hawthorn caching hedges). Shrikes are also known as butcher birds. Shrikes are predatory passerines that lack the claws of raptors. To compensate, they impale their prey on hawthorn thorns to both facilitate dismemberment and also for caching food for later consumption. Please correct the relevant portions of the Environmental Assessment.

Apodiformes Species Observed in the Eramosa Karst ANSI but not seen by Ecoplans

Ruby throated hummingbird**	<i>Archilochus colubris</i> ANSI-Core	Welch_hummingbird_CA
Chimney shifts (Threatened)	<i>Chaetura pelagica</i> ANSI-Subject lands	Hard to photograph “swifts” (they are very swift)

On the evening of July 28, 2009 I went on a walk in the Eramosa Karst ANSI with Professor Christine Wilson, Professor Jim Quinn, and Professor Doug Welch. Dr. Welch brought a nice camera, and took the pictures in photos\Welch_. One is a photo of an indigo bunting that was taken in the ANSI-Core. Also photographed in the ANSI-Core was a hummingbird. We then proceeded out to the ANSI-Subject lands, where Dr. Welch photographed the cedar waxwings at the southwest corner of the ANSI-Subject lands woodlot. Between photographing the hummingbird and the waxwings, we observed multiple individuals of two different Species at Risk feeding in the fields of the ANSI-Subject lands. The first species was the Species At Risk monarch butterfly (*Danaus plexippus*). They were feeding on the carpet of wildflowers that covers the ANSI-Subject lands. The second species we observed were chimney swifts (*Chaetura pelagica*). These are a Threatened Species at Risk. They were flying low over the carpet of wildflowers and feeding on the abundant insect life of the ANSI-Subject lands fields.

It got me thinking about the name “chimney swift”. Chimney swifts existed here in North America before there were chimneys. They must have nested in naturally occurring features that approximate chimneys. Immediately adjacent to the chimney swift feeding habitat (ANSI-Subject lands) is an abundance of karst features that would provide suitable nesting habitat. Swifts could travel between the two very quickly. It is truly unfortunate that Ecoplans staff have steadfastly refused to conduct a biological inventory of the karst cave features (see items 2 and 4 under aquatic cave fauna below).

The Boy Scouts volunteered their efforts and conducted a spot survey of one cave window and found a bird's nest (see photos\Lewis_PottruffCaveWindow). The nest is probably that of an Eastern phoebe (*Sayornis phoebe*), but since this is a tentative ID it is not recorded on the avifaunal table (Table D). The point is that there are cave nesting birds in the ANSI, and since Ecoplans staff failed to conduct a biological inventory of the karst cave features, chimney swift nesting in the ANSI cannot be excluded.

There is a unique opportunity afforded by the complete information we have of Apodiformes species in the Eramosa Karst ANSI. It enables us to get precise figures on the quality of survey work for this avifaunal order.

Number of Apodiformes species in Ontario: 2

Number of Apodiformes species observed in the Eramosa Karst ANSI: 2

Number of Apodiformes species seen by Ecoplans: 0

Volunteer survey success rate for Apodiformes: 100%

Ecoplans survey success rate for Apodiformes: 0.0%

For an ecological consulting company whose conclusions are based on “no species of risk found...”, a deficiency in the ability to see Apodiformes is regrettable. This is because 50% of the species in this order are Threatened. The result:

Number of Threatened Apodiformes species in Ontario: 1

Number of Threatened Apodiformes species observed in the ANSI-subject lands: 1

Number of Threatened Apodiformes species seen by Ecoplans: 0

Number of Threatened Species seen on ANSI-subject lands: 1

Number of Threatened Species seen by Ecoplans: 0

Ecoplans survey success rate for Threatened Species: 0.0%

There are numerous statements and conclusions made throughout this EA that need to be corrected to reflect this reality. I do not have the time to point them all out.

Red-tailed hawk (*Buteo jamaicensis*). A family of red-tailed hawks are year round residents of the ANSI-to-be-razed lands (photos\redtail_DS). Spend an hour there, and your chances of seeing one of them there is probably over 90%. I have seen them hunt, kill, and eat in the ANSI-to-be-razed lands. Ecoplans notes that the red-tailed hawks are “regionally significant” nesters, but then feels compelled to editorialize: “Note: This species is a very abundant breeder throughout southern Ontario and is observed routinely by Ecoplans Limited during field surveys in this part of the province.” First, what professional assessment standard prompted this gem? If Ecoplans is trying to use these various designations to make some point, then Ecoplans needs to accept the designations. Ecoplans is not COSEWIC. It is not their job to second guess the designations. Second, this reflects a bias by Ecoplans apparent throughout this EA. The Ecoplans editorializing with respect to the wildlife resources present in the ANSI is consistently in the negative direction, trying to downplay the significance of what has been observed. Not once does Ecoplans say “You know, Species X is not on the Species At Risk list but we feel it should be, so we recommend not razing this land.” Third, Ecoplans should consider that the context in which Ecoplans observations are made

render this observation meaningless. Ecoplans is hired by developers to advance their plans to convert wildlife habitat into housing subdivisions. Ecoplans shows up at wildlife habitat, renders their “professional service”, and the wildlife habitat is razed and turned into a subdivision. From the red-tailed hawk’s perspective, Ecoplans is indistinguishable from the Death Star. The point isn’t how often does Ecoplans see red-tailed hawks, but rather do any red-tailed hawks remain after the Ecoplans promoted subdivisions are built?

Mammals that exist on the ANSI-subject lands but were not observed there by Ecoplans

Deermouse	<i>Peromyscus</i>	Photos\Peromyscus
Cottontail rabbit	<i>Sylvilagus floridanus</i>	Photos\cottontail

These species are now abundant throughout the ANSI-subject lands. The failure of Ecoplans to observe them was probably due to the fact that Ecoplans conducted its faunal inventory years ago during an atypically dry year. As a result, the Ecoplans faunal survey and EA do not provide an accurate view of the “existing conditions” of the ANSI-Subject lands.

Snake species observed live in the ANSI but not seen there by Ecoplans

Eastern milk snake	<i>Lampropeltis triangulum</i>	Species At Risk
Garter snake	<i>Thamnophis sirtalis</i>	Photo\Gartreau_snake_CA

Ecoplans saw no live snakes in the ANSI in 2007. In 2009, I saw multiple garter snakes and one milk snake in the ANSI. All were motile.

Flying snakes:

From the Environmental Assessment, Appendix E, page 15: “Avifauna: An observation of Eastern Milksnake”. Snakes are not birds. I am assuming this was a misplaced record. However, it does not inspire confidence in the ability of Ecoplans to either keep track of records or edit their final EA submission for accuracy.

Species At Risk Eastern Milk Snake

The background for the following discussion relies on these excerpts from the Environmental Assessment:

“if the study area’s Eastern Milk Snake population is still extant, its long term viability is poor due to the prevalence of industrial and residential development within the immediately adjacent lands” Ch4,p.46

“One record of Eastern Milk Snake was reported in the ANSI core by a member of the public and Ecoplans concluded that suitable habitat for Eastern Milk Snake hibernation, oviposition, and foraging is available in the study area, primarily in the ANSI Core and Core Buffer areas west of Parcel H.” Ch4p49

Milk snake habitat includes: “old fields, deciduous forests, anthropogenic debris, rodent burrows (hibernation), cavities under rotted stumps (hibernation, oviposition), cavities under rocks, boards” ApEp8

“Milk snakes feed primarily on small mammals such as mice, voles, and shrews” ApEp9

“These (parcel H) fields and their associated hedgerows have little potential to serve as Eastern Milk Snake habitat, primarily due to their sparse vegetation and almost complete lack of ground cover. ... several large logs/stumps... have the potential to serve as

oviposition sites. Potential foraging habitat is also present...potential foraging habitat is provided” ApEp33

“Ecoplans Limited staff conducted road mortality surveys because Eastern Milk Snakes are susceptible to road mortality.” ApEp34

So, due to the known presence of Eastern Milk Snake in the ANSI-Core, Ecoplans admits that the ANSI-Core and Core Buffer Areas are suitable habitat. It also concludes that the ANSI-Subject lands are potential milk snake habitat.

According to Ecoplans, the reason given for the ANSI-Subject lands not being high value habitat is “due to their sparse vegetation and almost complete lack of ground cover”. This statement may have had some validity when Ecoplans did its survey during an extremely dry year three years ago in 2007, but that survey does not accurately describe the existing conditions of the ANSI-Subject lands. Please see the photos on this DVD, particularly those labeled photos\groundcover. As can be seen, the current conditions of the ANSI-subject lands are a near total *presence* of groundcover: averaging waist high, frequently chest high, and occasionally more than head high.

For examples of just a few of the many milk snake habitat features present in the ANSI-subject lands, please see the photographs: debris, rocks, rockpile, rodenthole, and stump.

According to Ecoplans: “Milk snakes feed primarily on small mammals such as mice, voles, and shrews”. There is a 100% correspondence between the list of the 3 species most favored by milk snakes for food and the three species of mammals most abundant on the ANSI-subject lands. Mice, voles, and shrews are everywhere on the ANSI-subject lands. Please see photos\Peromyscus (x6), vole (x5), and shrew). In fact, if you turn over any of the many boards scattered around ANSI-subject lands, you will almost always encounter either rodents or signs of recent rodent activity.

The hypothetical boundary between the ANSI-Core and the ANSI-subject lands is unlikely to have any meaning for milk snakes. Please look at photos\groundcover_DQ. The hypothetical boundary between ANSI-Core and ANSI-subject lands snakes irregularly through the middle of that field of wildflowers. I can’t tell where it is, and I doubt the milk snakes can either. Ecoplans concludes that the milk snake habitat on one side of that invisible line is “suitable” while on the other it is only “potential”. This implies that Ecoplans thinks that milk snakes not only have a working knowledge of karst geology, but also have access to a GPS mapping system and can remember to “buffer” in meters and not in feet. Otherwise a milksnake might find itself mistakenly on “potential” habitat. This is the type of logic that pervades this entire Environmental Assessment. This EA has to be rejected as patent nonsense. Based on the best knowledge of the “existing conditions”, the entire ANSI (Core and Subject lands) is a single, integrated milk snake habitat unit.

The Ecoplans road mortality study only implies that the Eramosa Karst ANSI milksnake population has responded to the selection pressure imposed by the roads that surround the ANSI by remaining within the ANSI. According to the City of Hamilton’s Public Works Department Engineer Gary Moore: “Highland Road and Upper Mount Albion Road are original road allowances in the Township of Saltfleet that were laid out by Augustus Jones PLS in 1791. As to the date the roads were constructed is anyone’s guess, but I can say they would have been one of the first to be traveled in the settlement

of the township.” For 200 years, milk snakes exposing themselves on the roads surveyed by Ecoplans have run the risk of having their future reproductive success decreased to 0%. The forebearers of the existing Eramosa Karst ANSI milk snake population adapted by learning to be cryptic and avoiding the roads. The results of the road survey done by Ecoplans are not surprising, and they do not support the conclusions Ecoplans tries to wring from them.

I am having trouble reconciling three proposals made by Ecoplans: 1) “Eastern Milk Snakes are susceptible to road mortality” (ApE, page 34), 2) the viability of milk snake populations is harmed by residential development (Ch.4, page 46), and 3) razing 80 acres within the ANSI for residential development and roads will not disrupt milk snake habitat. These 3 ideas are clearly in conflict. What is really amazing is that Ecoplans is trying to sell the notion that residential development that occurs *outside* the ANSI (Ch.4, page 46) is more harmful than residential development that it proposes to put *inside* the ANSI. This is, of course, insane. But it is also the contents of this Environmental Assessment. Please reject this Environmental Assessment.

Aquatic cave fauna present in both the Olmstead and Nexus Caves

A major failure of this environmental assessment is the steadfast refusal of both Ecoplans and the ORC to conduct a biological inventory of any of the numerous cave features present in the Eramosa Karst ANSI. This is despite the fact that aquatic cave organisms (described as motile aquatic fauna, probably crustacean, possibly amphipod) are known to live in both the Nexus and Olmstead Caves. The ORC was made aware of the presence of aquatic cave dwelling organisms more than two and a half years ago (September 4, 2007), but has failed to investigate what the organisms are. Since Ecoplans/ORC failed to survey the cave fauna, information with respect to what the habitat needs of and what toxic threats to these organisms are is absent from this environmental assessment. Because of this information vacuum, the Ecoplans/ORC assertions that razing 80 acres of ANSI lands immediately upstream of these caves will not affect life in the caves are clearly without merit. In order to understand the large amount of effort that Ecoplans/ORC have taken to avoid doing their environmental assessment duties, please consider the following timeline:

1) September 4, 2007: John MacKenzie, the head of the ORC, and two assistants appeared before the City of Hamilton Planning Committee to lobby for development of the ANSI-Subject lands. In Mr. Mackenzie’s presence, I appeared and spoke to the idea of not developing these lands, and mentioned that Dr. Beddows had earlier entered the Olmstead Cave and observed cave fauna there. The cave fauna was described as motile aquatic fauna, probably crustacean, possibly amphipod. (I have been subsequently informed that Dr. Beddows was accompanied by Marcus Buck on the Olmstead Cave visit, and that Marcus Buck has also observed cave fauna in the Nexus Cave.) My comments about the cave fauna appeared in the local newspaper. After this meeting, I saw Mr. MacKenzie and his assistants nearby (I believe waiting for a GO bus). I shook Mr. Mackenzie’s hand and raised one and only one issue: the importance of conducting a biological inventory of the cave fauna.

2) June 11, 2008: Public Information Centre #1. There is no mention of the cave fauna anywhere in the 26 pages of publicly displayed material. However, the material did say

that the ANSI-Core contains: “no specialized wildlife habitat components”. I informed Ecoplans staff that this statement was inaccurate in light of the information above, and specifically asked that the presence of aquatic cave life be included on the public displays. Ecoplans staff responded by saying that they had conducted no biological inventories of any of the caves, and had no intention of doing so.

3) November 4, 2008: John MacKenzie, head of the ORC, eMAILED Dr. Peck: “As part of the public process for our EA the question or (sic) whether life forms may inhabit caves downstream has come up but our biological inventory and our visits inside the caves have never revealed anything.”

4) June 18, 2009: Public Information Centre #2. There is no mention of cave fauna (per se) in the now 38 pages of public display information. The closest is an oblique reference in response to public comments regarding: “Concerns for negative environmental effects on the natural environment: flora, fauna, caves, aquatic habitat, feeder streams.” The response is: “Experts in the fields of biology, hydrogeology and water resources engineering are assessing the environmental sensitivity of these lands. The technical studies completed to date confirm no significant impacts are anticipated.” I again express my concern that the presence of aquatic cave fauna is not being included on the public displays. Ecoplans staff responded by saying that they had conducted no biological inventories of any of the caves, and had no intention of doing so.

5) August 7, 2009: Imshun Je of the ORC eMAILED to me: “I’m an Environmental Specialist at Ontario Realty Corporation working on the Stoney Creek project on the lands east of the Eramosa Karst Conservation Area (EKCA). I’ve been asked to follow up on a suggestion you made regarding consulting with a professor at Carleton University who is an expert on cave fauna. Could you please send me the name and contact information and I will call up the professor and see what would be involved in conducting an inventory of any fauna in the caves in the EKCA and we could expect to find.”

6) August 10, 2009: Imshun Je of the ORC eMAILED to me: “My apologies, I misunderstood someone. However, if you do know of a cave fauna expert at McMaster or any other university that you recommend, please let us know. We are looking into following up on your suggestion to investigate whether there are any cave fauna and document them, however, our consultants have no field experience in this type of investigation. So we are looking for experts who can lead this type of field work.”

7) August 13, 2009: Jeff Gross of Ecoplans eMAILED to me: “In addition, we would also appreciate any written comments from Dr. Beddows on the cave fauna that you might have.”

8) January 26, 2010: The final EA states the “focus should be on maintenance of the karst environment and habitat for cave fauna, IF PRESENT.” And “any POTENTIAL habitat for cave dwelling fauna”.

First of all, the nature of the proposed undertaking is being consistently misrepresented by multiple ORC employees (including the head of the ORC). Nowhere is it mentioned in the eMAILs sent to either me or Dr. Peck that the caves are inside an ANSI, and that the proposed undertaking is to raze 80 acres of land in that same ANSI directly upstream of the caves.

In the light of the events outlined above, I'm disturbed by the behaviour of the head of the ORC in this process. After reviewing the chronology above (1 through 3), it is amazing how much misleading information can be crowded into one sentence. In trying to solicit helpful information from Dr. Peck (the cave faunal expert), Mr. MacKenzie asks about the "question of whether life forms may inhabit caves downstream". Why does Mr. MacKenzie say "whether" and "may" when the facts known to Mr. Mackenzie at the time were that fauna does inhabit the caves? The statement "our biological inventory and our visits inside the caves have never revealed anything" hides many deceptions. It is misleading to suggest the "our biological inventory" has any possible relevance to the issue of cave fauna when "our biological inventory" specifically excluded visiting the caves (see numbers 2 and 4 above). With respect to "our visits inside the caves", who is being referred to in "our"? If he is talking about direct employees of the ORC or Ecoplans, then "our visits inside the caves" "never revealed anything" because they didn't occur (see 2 and 4 above). If he is talking about people contributing to the EA process, then Dr. Beddows and Marcus Buck did observe cave fauna, in both caves. Either way, Mr. MacKenzie's eMAIL appears to be deceptive. I would suggest that it is incumbent upon the provincial government to carefully examine whether this behaviour has been appropriate and ethical.

Despite Mr. MacKenzie's efforts to frame Dr. Peck's response, Dr. Peck's response is quite interesting. Even after Mr. MacKenzie says there isn't "anything" in the caves, Dr. Peck responds by saying "There are undoubtedly some invertebrates".

Why, then, does the final EA still say "cave fauna, IF PRESENT" when three cave experts (two with PhDs) have consistently said that there are? The EA should not be accepted until these factual errors are corrected. (Both the "if" and "potential" remarks are clear factual errors. Since all of the experts agree that there are cave fauna, there the cave habitat is not potential, it is real. This Environmental Assessment misrepresents the existing conditions and specialized habitat components of the Eramosa Karst ANSI.

The existence of the cave fauna was made known to the ORC more than two years ago (September 4, 2007). This time could have been spent evaluating the importance of the cave fauna and what their habitat needs are, but this was not done. This Environmental Assessment of the Eramosa Karst ANSI should have assessed the nature of the creatures living in the karst caves, but it didn't. Cave scientists Dr. Patricia Beddows and Marcus Buck both said there were cave fauna. When the ORC turned to an outside expert, the pre-eminent Canadian cave invertebrate researcher Dr. Stephen Peck, he said there were "undoubtedly some invertebrates" present. However, this "final" Environmental Assessment still uses the words "if" and "potential". This Environmental Assessment has wasted more than two years of time and has produced a less than honest result.

I agree with the portions of the EA that say the plan for the ANSI (including ANSI-subject lands) should "maintain the karst environment and habitat for the cave fauna" (striking IF PRESENT), and for "the protection of cave habitat". I do not think that these objectives can be met by razing 80 acres of land within the ANSI and placing

many permanent sources of pollution there. Promises to “mitigate” these effects ring hollow, partly because there is a need to use “enhanced” techniques because what is currently being done in the area is unacceptable. Part of the problem is that with living things you cannot learn as you go: if you kill them they are dead. You cannot subsequently bring them back with “enhancements”.

To further demonstrate that the learning curve on this EA has been too slow to allow its approval, consider that more than two and a half years after being informed of the presence of cave fauna, the final EA still treats their presence as hypothetical. In other words, this EA took two years to march away from the truth rather than towards it.

In light of this regression, the Ecoplans statement that it took “an ecosystem-based management approach” to the cave fauna seems a bit stretched. First of all, what does this mean? There is no definition, no framework, no analysis – in fact there is absolutely nothing that comes between the sentence announcing this approach and the sentence that announces the recommendations from it. It’s not that Ecoplans’ “ecosystem-based management approach” lacks specificity; the problem is that there is NOTHING there.

What is needed if this “ecosystem-based management approach” is to be taken seriously is some increased specificity on several fronts. First, there is a reason why the words “species” and “specific” are so similar. Living things have habitat needs and also need to be protected from hazardous substances (toxins). What these needs are, and what the toxins are, vary from species to species. The more precise your knowledge with respect to the species present, the more specific the resulting knowledge about potential hazards will be. The Ecoplans “ecosystem-based management approach” could take the quickest approach to obtaining knowledge about parameters for water quality needs and toxic threats: it could survey the existing cave fauna. (But this was not done.) Failing that, the Ecoplans “ecosystem-based management approach” could take a less precise path and consider what information exists regarding the cave fauna and choose a surrogate model organism. (But this was not done.) For example, the cave fauna is known to be a small (millimeter size range), motile aquatic organism, probably a crustacean. A model laboratory organism meeting these criteria not only exists, it is routinely used for testing water quality: *Daphnia magna*. The Ecoplans “ecosystem-based management approach” could then produce from the extensive published literature a table of potential toxic threats (with effective concentrations) (But this was not done.)

Next, the Ecoplans “ecosystem-based management approach” could produce a table of the types of pollutants that would be produced both during construction and by whatever exists after construction. (But this was not done.) Ecoplans “ecosystem-based management approach” could also consider what types of materials could be spilled and produce a table of those, too. (But this was not done.)

The Ecoplans “ecosystem-based management approach” could submit published literature with measurements from working examples of “enhanced” storm water management facilities demonstrating how effective they are at dealing with the various pollutants identified in the tables (But this was not done at multiple levels.) The Ecoplans “ecosystem-based management approach” could have pointed to examples of working “enhanced” facilities in the area. (But this was not done.) Finally, the Ecoplans “ecosystem-based management approach” could have provided literature from a 100 year old “enhanced” facility detailing how effective that system works over time, and how costly its maintenance was. (But this was not done.)

Since the Ecoplans “ecosystem-based management approach” seems to be remarkably unconstrained by anything approximating real world information, I guess the Ecoplans “ecosystem-based management approach” is free to conclude that razing 80 acres of land inside the ANSI and placing permanent sources of pollution there will “maintain cave habitat in full”. But then again, a plan unconstrained by data is capable of saying anything, it just isn’t a plan that should be believed by anyone who thinks. The point is that there are multiple leaps of faith in Ecoplan’s “reasoning” on page 52 (Chapter 4). “Consequently” is apparently a big word for Ecoplans, but its use is not warranted at the end of this disorganized string of factless assertions.

For concrete examples of specific hazards not contemplated by the Ecoplans “ecosystem-based management approach”, please see the discussion below (Comments on Appendix C, page 1, item 1, alternative 2.)

Species At Risk Monarch Butterfly

It is disappointing that this Environmental Assessment contains so little ecological thinking from the ecologists at Ecoplans. When, a Species At Risk is discovered on the subject lands, the Ecoplans ecologists spend little time trying to consider what the habitat needs of that species are, or how they could be protected.

Instead the Ecoplans ecologists launch into a legalistic dodge about how the responsibility for protecting the habitat of this Species At Risk is everyone else’s but their own. Ecoplans wants the bulk of the sacrifices to be made by the Mexican people, rather than by Ecoplan’s comparatively wealthy clients. As for any considerations made within Canada, Ecoplans proposes they can be made anywhere but on their client’s property.

A fair and unbiased ecologist could have mentioned that there is a management strategy for monarchs in Ontario:

“Three key management strategies have been identified to protect the Monarch Butterfly. Milkweeds, the larval foodplant, should be taken out of the noxious weed acts in Canada; native wildflower habitat should be protected and encouraged; and migration stopover sites should be protected from disturbance.”

http://www.rom.on.ca/ontario/risk.php?doc_type=fact&id=149&lang=en

The ANSI-subject lands can help with all three aspects of this management strategy. (But only if the Minister of the Environment rejects the Ecoplans preferred alternative.) First, there are milkweeds on the subject lands: photos\milkweed_DV. Second, 80 acres of native wildflower habitat will be protected if the Ecoplans proposal to scrape them off the surface of the planet is rejected (see photos\groundcover and Anovae). (For a monarch feeding on the wildflowers see photos\monarch_Y.) Third, a migration stopover site can also be protected if the Minister rejects the Ecoplans proposal.

In the fall, The ANSI-subject lands are a funnel for monarch butterflies heading south. They funnel through the area, traveling from North to South along the hedgerows. They stop to feed on the abundant wildflowers (see photos\monarch_DS). They remain for a few days, roosting at night in the adjacent oak tree hedgerow (see photos\monarchoak).

Please watch the QuickTime video (photos\monarchvideo_DS). I apologize for the quality, it was taken with the same \$140 camera used for the still photos. What it

does show is about 10 monarchs traveling back and forth between the ANSI-subject lands wildflowers and the ANSI-subject lands roosting tree.

The above data demonstrates that the ANSI-subject lands are a monarch migration stopover site (in accordance with the Ontario Monarch management strategy), and that the ANSI-subject lands are also significant wildlife habitat as a “seasonal concentration area” (see this EA, Chapter 4, page 48).

By preserving this monarch migration stopover site, the Minister also has the opportunity to fulfill another key component of the Eramosa Karst ANSI mandate: education. There is tremendous potential to educate on the monarch migration and how preserving it maintains the environmental integrity of the Eramosa Karst ANSI. The monarch migration was discovered by Toronto scientists working in this general area who put labels on individual monarch butterflies. Recovery of those labels showed that monarchs that lift off of the Eramosa Karst ANSI travel all the way to the mountains of central Mexico. Relative to body size, this is the longest animal migration known. I am asking that the Minister reject the Ecoplans recommendation of the proposal to destroy all of this valuable wildlife habitat by scraping it into a pile (see photos\razed and misc\ekdev).

Comments on Appendix C: Assessment of Alternatives to the Undertaking

The problems with this assessment of alternatives are numerous. Statements are made that are not supported by any fact or documentation, are inconsistently applied across alternatives, and are frequently wrong.

If documentation cannot be supplied for the claims made in this chart, the environmental assessment should be rejected until they can be produced (if that is even possible...)

Time does not allow for me to cover all of the inaccuracies in this chart.

The Ecoplans/ORC preferred alternative (5) is said to be favored because it fixes perceived problems with “actively farmed lands on Parcel H”. There are no actively farmed lands on Parcel H (part of the ANSI), and there haven’t been for many years. None of the ANSI lands that the ORC proposes to raze have been farmed since 2003. Therefore the “actively farmed lands” statement is simply factually incorrect. Please look at misc\ekandag, and at photos\groundcover. ANSI-Parcel H is entirely north of Rymal Road, and the difference between these non-farmed lands and the farmed lands south of Rymal road is evident from space. The EA should not be accepted with this false statement in place.

The Ecoplans/ORC preferred alternative (5) is said to be favored because it “provides balanced economic benefits to the taxpayers of Hamilton”. No documentation is provided to support this claim, and it is almost certainly incorrect. Due to the nature of the Provincial rules regarding residential development charges, full cost recovery of all the costs incurred by residential development are rarely achieved in Ontario, and even less so in Hamilton. For example, the Province will not allow development charges to cover the increased waste management charges that will be incurred if the new homes are built. The result is that the unrecovered costs are shifted onto the property taxes of existing homeowners (e.g., me). The negative economic “benefits” of the development Alternative 5 will be even harder on Hamilton taxpayers than on those of neighboring

municipalities. The cities of Mississauga and Burlington have actively worked to minimize the negative economic “benefits” of residential development by increasing their development charges. The City of Hamilton tried to follow suit, but the effort was blocked by a “freeze” on development charges (at artificially low levels) that occurred after a successful lobbying effort by area homebuilders. Their chief lobbyist was, in fact, a person who was paid as a consultant on this EA. So not only is this claim not true, a paid consultant on this EA actively worked to make it untrue. The conflict of interest is quite high, and this EA should be redone after the people in conflict have been removed from the process.

This chart continues the practice pervasive in this document of attempting to hide the fact that the proposed development will in fact raze 80 acres of lands that are part of the ANSI. So when page 1, item 1, alternative 5 of the chart says that this razing will have “No direct impacts on the ANSI” this is a factually incorrect statement. The EA should not be accepted with this falsehood in place.

When page 1, item 1, alternative 1 lists as a concern “potential for intrusion of exotic and /or invasive species into the Conservation Area” it is inconsistent by not mentioning that the risk of this happening is highest under the development alternatives (4 and 5). The scientific literature in ecology is very clear in stating that the risk of spread of invasive species is highest after disturbance of habitat, such as will occur in the ANSI-Area H if alternatives 4 or 5 are pursued.

When page 1, item 1, alternative 2 lists as a concern “potential risk of contamination from accidental spills” it lacks balance in not also listing that the development alternative (5) will greatly increase these risks by increasing traffic on the designated roads. It also fails to mention that the potential of spills and other environmental insults directly on ANSI lands during the construction phase of alternative 5, and the permanently increased risk of spills and other environmental insults from the developments that alternative 5 proposes to place directly on ANSI lands. The proposed mitigation measures (stormwater ponds) have not been studied for their effectiveness in the long term. Two stormwater ponds have been built in the immediate area. One badly damaged karst features and the other does not provide the type of protection proposed in this chart. For this reason, any computer model that proposes that “enhanced” ponds will do better in the future is an untested extrapolation from life in the real world. To proceed based on these wild extrapolations without addressing the current real world problems with the existing ponds is an irresponsible experiment to be conducting on ANSI lands.

This environmental assessment is deficient in that it does not seriously consider what types of environmental insults will occur on the ANSI both during construction and into the future. Therefore, all of the promises that all possible effects of all possible “substances” (the word used by the engineers) can be successfully “mitigated” for all time ring hollow due to a total lack of specificity. This is particularly true with respect to the cave fauna known to be living in both the Nexus and Olmstead caves. Because this EA failed to investigate what these organisms were, it is blind with respect to what the habitat needs of these organisms are, and what is toxic to them. This blindness is doubled by the fact that this EA fails to address which particular “substances” could be a problem. And the EA is triply blind because it cannot predict with any specificity what nonexistent “enhanced” ponds will do with respect to unknown “substances” acting on unsurveyed organisms. Perhaps this is why the engineer’s report on stormwater ponds concludes

with: “Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibility of such third parties. A.J. Clarke and Associates Ltd. Accepts no responsibility for damages, if any, suffered by any third parties as a result of decisions made or actions taken based on this report.”

As an example of but one of many of the types of problems not considered in this EA, but which would increase in probability under the development alternative (5), consider the following: Last week (March 23rd, 2010) I saw a water main break at Mohawk and Garth. It was one of nine that occurred in Hamilton on that day. While tap water was not considered as a “substance” of concern as part of this EA, it turns out the chlorines and/or chloramines that it contains are highly toxic to aquatic organisms. A standard bioassay for toxic substances in water is the *Daphnia magna* test. Hamilton tap water is 100% lethal to *Daphnia* in this test. Absent any other data (and this EA failed to gather any), there is no reason not to expect that a water main break would be 100% lethal to the aquatic organisms living in Nexus and Olmstead caves. The alternatives chart fails to include the fact that the development alternative (5) would greatly increase the chances of toxic spills occurring in the ANSI.

Appendix F, pages 53, 56, 60, 61, 81, 82 (and probably others): The engineering report states that for these areas to be built INSIDE THE ANSI: “Quality control will not be required for this runoff as it is considered clean water.” This runoff will be discharged WITH NO QUALITY CONTROLS into “receiving watercourses”. This means any potential spills onto these areas will both contaminate the ANSI directly and then be discharged to contaminate downstream areas in the ANSI. All promises in this report with respect to the stormwater management ponds solving all the problems associated with the risks of developing in the ANSI (alternative 5) are therefore moot.

Page 1, item 2, alternatives 2 and 5. The chart again states “elimination of agricultural uses” and “actively farmed lands on Parcel H”. To repeat: There are no actively farmed lands on ANSI-Parcel H, and there haven’t been for many years. None of the ANSI lands that the ORC proposes to raze have been farmed since 2003. Therefore the “agricultural uses” statements are simply factually incorrect. Please look at misc\ekandag, and at photos\groundcover. ANSI-Parcel H is entirely north of Rymal Road, and the difference between these non-farmed lands and the farmed lands south of Rymal road is evident from space. The EA should not be accepted with these false statements in place.

Page 2, item 2, alternative 4 and 5: the chart twice states “over uncontrolled agricultural field discharge”. To repeat: There are no actively farmed lands on ANSI-Parcel H, and there haven’t been for many years. None of the ANSI lands that the ORC proposes to raze have been farmed since 2003. Therefore the “agricultural field discharge” statements are simply factually incorrect. Please look at misc\ekandag, and at photos\groundcover. ANSI-Parcel H is entirely north of Rymal Road, and the difference between these non-farmed lands and the farmed lands south of Rymal road is evident from space. The EA should not be accepted with these false statements in place. It should also be noted that if agricultural discharge from outside the study area is the concern, then alternative 2 should be chosen because it protects the environmental integrity and discharge properties of over 99% of the Nexus Creek watershed.

Page 2, item 3, alternatives 2 and 4: “woodlot”. The consultants who prepared this EA need to check it for consistency. The “woodlot” referred to here is not mentioned in the botanical inventory chart (Appendix E).

Page 2, item 3, alternative 4 and 5: Direct effects are not limited to the removal of hedgerows and a woodlot, but rather include the complete razing of over 80 acres of land in the ANSI (including large fields composed mainly of wildflowers). Please refer to section above in this document on razing. Most of the biodiversity of this part of the ANSI will be lost, as well as the loss of ecosystem services from these lands. The air filtration capabilities of 80 acres of vegetation will be replaced with multiple new sources of air pollution. Potential indirect effects on adjacent ANSI should not be expected to be minor, since the areas of the ANSI that Ecoplans/ORC proposes to raze are tightly interlaced with the other areas of the ANSI, magnifying harmful edge effects from the razing. The long term survival prospects for the many species present in the ANSI will be greatly reduced since the razing will reduce the contiguous wildlife habitat by over 44% (please see discussion of island biogeography above). The species known to exist in the ANSI whose survival chances will be reduced by the development alternative (5) include 4 listed species at risk (monarchs, butternut trees, chimney swifts, milk snakes).

Elsewhere in this EA, it is suggested that “these lands can be developed without impacting the environmental integrity of the ANSI”. It is difficult to see how this conclusion could be reached, considering the definitions of the words used:

Environment: the complex of physical, chemical, and biotic factors (as climate, soil, and living things) that act upon an organism or an ecological community and ultimately determine its form and survival

Integrity: 1. an unimpaired condition; soundness 2. firm adherence to a code of esp. moral or artistic values; incorruptibility 3. the quality or state of being complete or undivided; completeness syn see HONESTY

Ecology: 1. a branch of science concerned with the interrelationship of organisms and their environments 2. the totality of pattern of relations between organisms and their environment

(Webster’s Ninth New Collegiate Dictionary)

These are basic definitions that are known to most Ontario school children. When people with university degrees in ecology are paid to conclude that razing the habitat of hundreds of species is not “harmful to environmental integrity”, it is difficult to comprehend what this has to do with either “the environment” or “integrity”. This EA is deficient in that it simply asserts that the proposed undertaking will not harm the environmental integrity of the Eramosa Karst ANSI without first making a clear and complete statement of what that integrity is. The EA is also missing an explanation of how professional ecologists have ignored the habitat needs of the species present in forming their conclusions.

Page 3, NES, Alternative 1. “negative effects to the Conservation Area” of doing nothing. This concern does not belong here (under Alternative 1), because the risk to the CA is much greater under the development alternatives 4 and 5. The disturbance caused by the razing of the land under alternatives 4 and 5 will greatly increase the risk of invasive species spreading into the CA. Furthermore, the percentage of exotic species on

the reconstituted land is likely to be higher than on the existing land, which is currently mostly native vegetation (65%, see discussion of botanical inventory). Therefore, this risk belongs under alternatives 4 and 5 both during the construction phase and during the post construction period.

Page 3, NES, Alternative 2: Again, this risk from spills is not consistently applied across the chart and is probably highest under Alternatives (4 and 5). See discussion above.

Page 3, NES, Alternative 3: Ecoplans says: “*Negative effects*” of agriculture “*to continue*”. This is again factually incorrect. There has been no agriculture on the subject lands for over 6 years.

Page 3, NES, Alternatives 4 and 5: The characterizations of the existing conditions on the subject lands (which are part of the ANSI) are incomplete and misleading. The natural features on the ANSI-subject lands also include a wetland and vernal pools (with two species of frogs) that were missed by Ecoplans staff. They also include an oak-hickory woodland, hedgerows dominated by native vegetation, and fields dominated by native vegetation. Once again, NONE of the subject lands are “*actively farmed*”. The statement was false in complete form, and it is just as false in summary form. There are no actively farmed lands on ANSI-Parcel H, and there haven’t been for many years. None of the ANSI lands that the ORC proposes to raze have been farmed since 2003. Therefore the “*actively farmed*” statements are simply factually incorrect. Please look at misc\ekandag, and at photos\groundcover. ANSI-Parcel H is entirely north of Rymal Road, and the difference between these non-farmed lands and the farmed lands south of Rymal road is evident from space. The EA should not be accepted with these false statements in place.

Pages 3-4, NES, alternatives 4 and 5: The statement: “*Indirect effects to the ANSI are limited due to the recommended buffers for the ANSI*” is grossly misleading in many ways. It bypasses that obvious fact that razing 80 acres OF THE ANSI has obvious direct and significant effects TO THE ANSI. The statement about “*recommended buffers for the ANSI*” leads me to question if Ecoplans/ORC actually comprehend what a buffer is. A buffer is something that you ADD around a feature that you wish to protect. In this case the feature is the ANSI. I think that a “*buffer for the ANSI*” would be a great idea, but a buffer “*for the ANSI*” cannot be taken from INSIDE the ANSI (as Ecoplans/ORC are suggesting). This EA cannot be accepted as factual with this abuse of planning language in place. And until this assessment is redone by someone who understands the meaning of “*buffers*”, the vague promise of “*additional buffers (if necessary)*” is meaningless. It is a farce to talk about “*limited indirect effects to the ANSI*” when the proposal is to raze 80 acres of the ANSI.

Page 4, SEE1: This entire section is totally out of line with the reality of what is happening in Hamilton now. The HW Catholic District School Board is not interested in building on this site. The City’s Official Plan favors alternatives 1 or 2 over 4 and 5. This section needs to be rewritten based on current reality, with the “*High*” and “*Low*” designations flipped to reflect this reality.

My lack of comments about the rest of this chart (or for that matter the rest of the EA) does not imply that I agree with those parts, but rather just indicates that my fingers are tired.

MISCELLANEOUS

I am curious about the identity of this aquatic isopod found in the ANSI-Core: photos\aquaticisopod_CAD. What is it? Is it significant?

As an aside, the Minister should request that Ecoplans/ORC have a discussion with the Privacy Commissioner regarding the inappropriateness of using black “pop-up” windows to block out personal information in the EA (the comments section) that is posted at the ORC website. As the name implies, these windows “pop-up” after the personal information is displayed. If your computer is primitive enough (as mine is) there is a delay in the “pop-up” which allows the personal information to be read.

This EA and the public consultation documents are being vague when they speak to the need to provide an “Enhanced” level of protection. More specificity is needed with respect to what “enhanced” is, and how that compares with whatever “nonenhanced” is. This vague language frustrates any effort to talk about specific protection measures, and is being used to obscure the fact that the “nonenhanced” construction that has taken place in the area is inadequate. This confused mess is the direct outcome of having people work on this EA who are in a conflict of interest with respect to their profiting both from this process and the “nonenhanced” development that has taken place in the area. It is also likely that they will profit from the development that will occur if the proposed alternative (which they are being paid to promote) is accepted. This EA needs to be redone after the people involved in this conflict have been removed from the process.

Comments on Appendix F

Highlights from the engineer’s report (Appendix F) include:

- 1) There is a standard engineering approach to building in these situations, which is computer modeled in the report.
- 2) The conditions required for building in the Eramosa Karst ANSI are quite different, and the engineers do not agree with them.
- 3) The engineers first conclude “that there are two conflicting design criteria for this project”. This conflict cannot be resolved without reviewing the Davis Creek SWS to either “confirm, clarify, or update” design criteria. (This has not been done.)
- 4) The engineers further conclude: “Until the SAFETY HAZARD is verified the design criteria are unclear due to conflicting objectives.”
- 5) The engineers count again and change their conclusion to: “There are three conflicting design criteria for this project.” (page 74) The unresolved conflicts involve a “SAFETY HAZARD”.
- 6) The engineers remain confident that they can deal with whatever rules may be determined in the future with respect to these unresolved conflicts, but provide no estimates with respect to the costs that could be incurred. This is probably because cost estimates cannot be reliably determined when design criteria are unknown.
- 7) The engineers’ final conclusion is: “Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibility of such third parties. A.J.Clarke and Associates Ltd. accepts no responsibility for

damages, if any, suffered by any third parties as a result of decisions made or actions taken based on this report.”

As a result of all of the confusion outlined above, it is fair to say from a real estate perspective that this is a “tainted property”. Currently the engineers do not know which rules will apply with respect to the ANSI and therefore did not accurately forecast either costs or probabilities of success of dealing with them in the long term. (In light of this knowledge vacuum, claims to the effect that all potential effects to the environment of the release of unspecified “substances” in the ANSI can be controlled for indefinite periods into the future are clearly specious.) It is all well and good for engineers to say that it is POSSIBLE to deal with any possible outcome from this mess, but is it economically PRACTICAL? It is “possible” to put a man on the moon but it hasn’t been done in the last 37 years because of prohibitive cost.

The Province needs to consider what its liability will be if it attempts to sell this property for development without prominently displaying all of this uncertainty on the FOR SALE sign. These problems are analogous to a real estate agent trying to unload a home that has been used as a marijuana grow-op. If the agent knows that there are potentially costly problems associated with the property and fails to disclose them at point of sale, costly lawsuits will ensue. In this case the real estate agent is the Ontario Realty Corporation, and the ORC is in a much worse position than the owner of the grow-op home. This is because the costly uncertainties of dealing with this property are spelled out in gruesome detail in this EA. Will potential buyers be asked to sign a document saying that they have read and understood all of the EA (including these comments)? Will the buyer also have to sign a statement saying they understand that the engineer “accepts no responsibility for damages, if any, suffered by any third parties as a result of decisions made or actions taken based on this report”?

Other Species Known to Exist on the ANSI-Subject lands but either not seen or not reported by Ecoplans

(Please look at the photos in photos)

It was my intent to make a table describing the contents, but I have run out of time. Please look at the photos anyway. Many of the photos depict species seen on the ANSI-subject lands but that were not covered in the Ecoplans Biological Inventory.

Legend for Photo files names

All photos were taken in the Eramosa Karst ANSI.

Most were taken in the “subject lands” (those areas of the ANSI, principally parcels E-H, that the ORC is proposing be sold for development). These photos end in “_X” where X is a letter designating the more specific location as indicated in the Locations Table.

The minority of photos taken in the ANSI core area are marked “_CA”.

Most photos were taken by me and are not labeled with my name. For photos taken by others and sent to me, the file name begins with “Lastname_”.

For my photos, the time taken can be seen in the image information under “date taken”. “Date modified” is not an accurate indication of when the photo was taken because in some cases to image was cropped to facilitate eMAILing for identification.

LOCATIONS TABLE (all in Eramosa Karst ANSI areas the ORC wants to raze, unless description starts with CORE or NEARBY)

D	N 43°10'50.7"	W 79°47'46.9"	ANSI East hedgerow
E	N 43°10'54.3"	W 79°47'51.6"	ANSI Area H Field Central
F	N 43°10'58.1"	W 79°47'50.6"	ANSI Area H Field Central
G	N 43°10'52.3"	W 79°47'46.3"	ANSI East hedgerow
H	N 43°10'54.2"	W 79°47'54.6"	ANSI East hedgerow
I	N 43°10'48.3"	W 79°47'47.9"	ANSI East hedgerow
J	N 43°10'45.7"	W 79°48'00.8"	ANSI West hedgerow
K	N 43°10'54.2"	W 79°47'44.6"	ANSI Area H Field East
L	N 43°10'46.3"	W 79°47'59.8"	ANSI Area H Field Central GW no photo yet
M	N 43°10'59.5"	W 79°47'53.5"	ANSI Area H Woodlot
N	N 43°10'55.1"	W 79°47'56.9"	ANSI Area H Field West SR no photo GW
O	N 43°10'56.3"	W 79°47'45.5"	ANSI Area H Field Central
P	N 43°10'46.3"	W 79°47'48.8"	ANSI East hedgerow
Q	N 43°10'50.1"	W 79°47'47.3"	ANSI East hedgerow
R	N 43°10'53.7"	W 79°47'46.0"	ANSI East hedgerow
S	N 43°10'56.4"	W 79°47'44.9"	ANSI East hedgerow
T	N 43°10'58.5"	W 79°47'55.2"	ANSI Area H Woodlot
U	N 43°10'58.5"	W 79°47'46.4"	ANSI Area H Field Central
V	N 43°10'56.2"	W 79°47'44.6"	ANSI Area H Field East
W	N 43°10'52.2"	W 79°47'57.9"	ANSI West Hedgerow
X	N 43°10'47.0"	W 79°47'58.6"	ANSI Area H Field Central
Y	N 43°10'49.9"	W 79°47'57.0"	ANSI Area H Field Central
Z	N 43°10'44.2"	W 79°48'03.5"	ANSI Area H Field West
DD	N 43°10'47.5"	W 79°48'02.2"	ANSI Area H Field West
DE	N 43°10'52.3"	W 79°47'45.4"	ANSI Area H Field East
DF	N 43°10'49.7"	W 79°47'58.7"	ANSI West hedgerow
DG	N 43°10'56.0"	W 79°47'55.8"	ANSI West hedgerow
DH	N 43°10'57.8"	W 79°47'52.1"	ANSI Area H Field Central
DI	N 43°10'56.3"	W 79°47'57.8"	ANSI Area H Field West
DJ	N 43°11'00.0"	W 79°47'50.6"	ANSI Area H sinkhole
DK	N 43°10'31.5"	W 79°48'24.2"	NEARBY construction practice
DL	N 43°10'35.6"	W 79°48'26.2"	NEARBY construction practice
DM	N 43°10'44.1"	W 79°47'53.9"	ANSI Area H Field Central
DN	N 43°10'59.0"	W 79°47'51.2"	ANSI Area H Woodlot
DO	N 43°11'06.6"	W 79°47'51.8"	ANSI West hedgerow
DP	N 43°11'02.2"	W 79°47'52.6"	ANSI Area H Field Central
DQ	N 43°10'49.6"	W 79°48'03.3"	ANSI Area H Field West
DR	N 43°10'56.4"	W 79°47'48.3"	ANSI Area H Field Central
DS	N 43°10'53.2"	W 79°47'56.4"	ANSI Area H Field Central
DT	N 43°11'02.3"	W 79°47'53.5"	ANSI West hedgerow
DU	N 43°11'01.5"	W 79°47'54.6"	ANSI Area H Field West
CAA	N 43°11'11.4"	W 79°48'25.8"	CORE ANSI Nexus boardwalk wetland

CAB	N 43°11'11.1"	W 79°48'25.4"	CORE ANSI Nexus boardwalk wetland
CAC	N 43°11'07.4"	W 79°48'35.2"	CORE ANSI Watercress wetland
CAD	N 43°11'11.8"	W 79°48'36.9"	CORE ANSI Watercress wetland
DV	N 43°11'04.5"	W 79°47'52.4"	ANSI West hedgerow
DW	N 43°11'01.1"	W 79°47'53.8"	ANSI Area H Woodlot
DY	N 43°10'47.2"	W 79°47'55.4"	ANSI Area H Central Field Tree

As I watched monarch butterflies and Threatened chimney swifts criss-crossing across the hypothetical border that exists between the ANSI-Core and the ANSI-Subject lands, it occurred to me that for these Species At Risk the Eramosa Karst Area of Natural and Scientific Interest functions as an integrated whole. While Ecoplans says that the ANSI-Core is actual habitat for Species At Risk milk snakes and the ANSI-Subject lands are only potential snake habitat, I doubt that the snakes know not to cross this unmarked boundary.

Since scraping the surface off of 80 acres of land within the Eramosa Karst Area of Natural and Scientific Interest will clearly disrupt its environmental integrity, the “conclusions” of this Environmental Assessment cannot be accepted as factual. It should be rejected.

Sincerely,
Joe Minor
B.S., Biology
Ph.D., Biology

FOOTNOTE: As I was preparing to send this (at the deadline), it has come to my attention that there are some details that I would amend if time permitted. It is not that I am aware of any errors, it is just that some of the points are complex and need elaboration. That being said, none of the major points are affected.