Brunton Consulting Services

216 Lincoln Heights Road, Ottawa, Ontario K2B 8A8
Phone: (613) 829-7307 *Fax*: (613) 829-4688
e-mail: bruntonconsulting@rogers.com

January 13, 2011

Review of Natural Environment Existing Conditions, Johnston Road Study Area

Natural and near-natural areas within the Johnston Road study area has been the subject of various investigations over the years. The following represents a 'table top' review and summary of the documentation for those landscapes in and about the area considered during the present Johnston Road study.

1. Existing Conditions

Two Urban Natural Areas (UNAs) contain the remaining habitat of the study area (figure, below), with the remainder of the study area being transformed into a built landscape of residential, commercial and industrial development. The two remaining natural areas are summarized below.

UNA 151 (Conroy Swamp) - this low area south of the railway yard (also known by the local community as Greenboro Turtlehead Nature Area and as Natural and Open Spaces Study (NOSS) areas 3502 and 3504 (Environmental Management Branch 1998), is dominated by swamp forest and swamp thicket vegetation (Brunton 2005a). It was described in Brunton (1993) as follows:

"The site occupies a depression in the broad clay plain forming the bottom of a post-glacial drainage channel formerly connecting the Rideau River corridor with the Mer Bleue lowland. It is dominated by a scrubby swamp thicket (willow-Red-osier Dogwood-buckthorn) surrounding a small submature to mature Green Ash - [hybrid (Red x Silver)] Maple swamp. The thicket swamp has substantial stands of non-native Canary-grass (*Phalaris arundinacea*)-Purple Loosestrife (*Lythrum salicaria*) marsh vegetation in areas of deeper water.

The swamp forest is on thin organic substrate over clay upon which standing water occurs in shallow pools. The diverse herbaceous undergrowth includes Sensitive Fern (*Onoclea sensibilis*) and Swamp Willowherb (*Epilobium ciliatum*) with uncommon elements such as Turtlehead (*Chelone glabra*) and Drooping-woodreed grass (*Cinna latifolia*). Few non-native elements are evident within the mature swamp forest".

Gore & Storrie (1994) note that the undeveloped area in the Conroy Woods north of the railway tracks is an important source for the surficial water supporting the native vegetation of the Conroy Swamp.

The UNA report (Brunton 2005a) indicates that the Conroy Swamp site suffers from a severe infestation from a variety of non-native invasive plants but supports a modest native biodiversity (153 native plant species), some uncommon vegetation elements (the swamp forest over clay substrate) and provides local wildlife corridor functions. It was a High rated UNA, that rating being primarily on the basis of its relatively large size (28 ha) and its representation of habitats found rarely within the urbanized portion of Ottawa. Its size has subsequently been dramatically reduced, however, with the western third of this site now transformed into residential housing. Accordingly, the appropriate contemporary UNA rating is Moderate.

UNA 152 (Conroy Woods) - this upland area north of the railway tracks is also known as Natural and Open Spaces Study (NOSS) area 3403 (Environmental Management Branch 1998) and is dominated by young hardwood forest. It is described in Brunton (1995) as follows:

"This [area] is predominately composed of dense, virtually pure, young (less than 8m tall) Field Birch *(Betula populifolia).* This ... constitutes a scrub forest that only slowly is succeeded by typical eastern Ontario early successional forest species (e.g. Trembling Aspen *(Populus tremuloides),* White Birch *(Betula papyrifera),* etc.). The undergrowth consists of a sparse association of field species, including raspberry *(Rubus* spp.), Canada Golden-rod *(Solidago canadensis),* Meadowsweet *(Spiraea alba)* and White Aster *(Aster lanceolatus).* The density of such scrub forest, often with the birch in association with scattered Trembling Aspen and dense

growths of Black Buckthorn *(Rhamnus frangula)*, precludes the development of a diverse ground flora. Such habitat is of very limited representative natural significance in eastern Ontario.

A single pure grove of young Trembling Aspen (ca. 50 m across) occurs ca. 150 m east of the CNR training centre. Scattered Choke-cherry *(Prunus virginiana)* occur across the stand. Most trees are small, with a maximum girth of 22 cm. The undergrowth, like much of the Field Birch scrub forest, is severely infested with the non-native Black Buckthorn, which is increasingly replacing natural understory vegetation. Herbaceous (non-woody) vegetation is sparse here".

The small copse of Trembling Aspen is unremarkable in itself and was not found to support rare or unusual plant or animal species. The tree composition of the woodlot is homogenous and was deemed capable of sustaining itself for a considerable period.

A small population of a regionally rare plant species, the sedge *Carex cumulata*, occurs at the western edge of the UNA area.

This is a common, naturally occurring vegetation association. It is rates as a Low significance UNA (Brunton 2005b). It supports no features or functions confirmed to be Regionally Significant (exceptional in a City of Ottawa context)[1].

2. Ecological Significance

The swamp forest south of the railway tracks is considered to have significance by virtue of supporting ecological values not commonly found in the urbanized portion of Ottawa. The hydrological system required to support these floristic and ecological values may have been compromised in recent years, however, by the destruction (infilling) of the thicket swamp vegetation occupying the western third of the UNA. After substantial impact by residential development in the western portion of the site, the rating for UNA 151 (The Conroy Swamp) would be reduced from High to Moderate.

Gore & Storrie (1994) and Gore & Storrie (1995) concur with the overall assessment of earlier investigations and emphasize that sustaining existing swamp hydrology was critical to the long-term survival of the wetland habitat. Subsequent assessments of the Conroy Swamp (Greenboro Turtlehead Nature Area) provide management prescriptions designed to ensure that surficial and ground water contributions from adjacent lands. Particularly important is surface flow from the

[1] The wetland herb Turtlehead (*Chelone glabra*), the namesake of community nature area, has been described as a significant (even rare) natural features within the Conroy Swamp. This is a regularly occurring element of wetland forests throughout the Ottawa Valley, however. It is uncommon in the City of Ottawa (Brunton 2005c) but, at most, only locally significant away from major watercourses such as the Ottawa and Rideau Rivers.

north in and around Conroy Woods, and that from the development area to the west (ESG International (2000) and CH2M HILL (2001)).

The woodland to the north (UNA 152), with a greater degree of disturbance evident, is less intrinsically significant. Its ecological value pertains largely to the presence of a remnant population of a Regionally rare sedge species that was last reported here in 1995. This area also represents about 45% of the drainage area of the Conroy Swamp south of the railway tracks (Gore & Storrie 1995). As noted above, ESG International (2000) and CH2M HILL (2001) describe the importance of sustaining the surface water flow from here for the long-term maintenance of wetland habitats in the Conroy Swamp to the south. UNA 152 (The Conroy Woods) remains a Low rated natural area.

Scrubby regenerating pasture and other remnant agricultural/ undeveloped areas elsewhere within the overall study are severely disturbed, retain few natural features, and support no intrinsic natural environment values.

3. References Citec

Brunton, D. F. 1993. *Ecologically Significant Areas (ESAs) within the City of Ottawa*, Danie Brunton Consulting Services, Ottawa.

Brunton, D. F. 1995. *Natural Environment Assessment of the Conroy Industrial Park*. [Unpublished report], Daniel Brunton Consulting Services, Ottawa.

Brunton, D. F. 2005a. *UNA 151: Conroy Swamp (Greenboro Turtlehead nature Area)*, in Muncaster Environmental Planning and Brunton Consulting Services. 2005. *Urban Natural Areas Environmental Evaluation Study, Final Report*. Planning and Growth Management Department, City of Ottawa, Ottawa.

Brunton, D. F. 2005b. *UNA 152: Conroy Woods)*, in Muncaster Environmental Planning and Brunton Consulting Services. 2005. *Urban Natural Areas Environmental Evaluation Study, Final Report*. Planning and Growth Management Department, City of Ottawa, Ottawa.

Brunton, D. F. 2005c. *Vascular plants of the City of Ottawa, with identification of Significant species*, Appendix A of Muncaster Environmental Planning and Brunton Consulting Services. 2005. *Urban Natural Areas Environmental Evaluation Study, Final Report*. Planning and Growth Management Department, City of Ottawa, Ottawa.

CH2M HILL. 2001. *Greenboro Turtlehead Nature Area Background Review Report*. CH2M HILL Canada Ltd., Ottawa.

Environmental Management Branch. 1998. *Montfort Woods area*, in *Natural and Open*

Spaces Study (3 volumes). Department of Urban Planning and Public Works, City of Ottawa, Ottawa.

ESG International Inc. 2000. *Greenboro Turtlehead Nature Area* Management Plan. ESG International Inc., Ottawa.

Gore & Storrie. 1994. City of Ottawa Conroy Swamp Investigative Study, Final Report. Gore & Storrie, Ottawa.

Gore & Storrie. 1995. City of Ottawa Conroy Swamp Hydrologic Study, Final Report. Gore & Storrie, Ottawa.

Daniel F. Brunton