

Figure 3. Hooker's Orchid (*Platanthera hookeri*) in mixed woodland south of existing gravel pit.

Purple Trillium (*Trillium erectum*) was found at four different locations in the mixed, secondary woodland to the south of the existing gravel pit (see plant list for map coordinates for each clump of plants).

Survey Date: June 7, 2003

Submitted by:

Botanist: Ruth E. Newell, BSc.(Hons.), M.Sc.

Wolfville, NS

5.2.3 Potential Effects and Proposed Mitigation

During their respective floral surveys, Ms. Newell and Mr. Jotcham were unable to find any sensitive or rare plant species at the Site. In the vicinity of the current and proposed expanded gravel pit, Ms. Newell did find some plant species with some conservation concern. These species were located in the mixed woodland habitat situated immediately south of the existing gravel pit and the proposed gravel pit. To protect this area from potential impacts such as destruction of habitat, the proponent will maintain a set back area of 30 meters. To the north of the proposed gravel pit, the proponent will maintain a set back of 50 meters from the area, which Mr. Jotcham refers to as the wetland meadow (see Figure 1, pp. 10). The proponent will as well suggest to the property owner that botanical gardens be given the opportunity to remove plant species of interest from the proposed pit expansion area before the expansion commences (i.e., if approved by NSDEL).

5.3 Rare and Sensitive Fauna

5.3.1 Description of Existing Environment

Faunal Analysis of a Proposed Pit Expansion

Cambridge, Kings County, Nova Scotia

Submitted by W. George Alliston, Ph.D. – 31 December 2002

INTRODUCTION

This report assesses the potential use of an aggregate pit proposed by Lawson Bennett Trucking Ltd., and the woodlands and agricultural lands adjacent to this site, by species of amphibians and reptiles, breeding birds, and mammals currently considered at risk in Nova Scotia; the possible impacts that aggregate extraction operations might have on these species; and possible mitigative measures that might be taken.

METHODS

In this report all species currently designated by the Nova Scotia Department of Natural Resources as colour rank red (at risk) or yellow (sensitive to human activities) are referred to as “species at risk”.

The common names of plants and animals are used in this report. The common and scientific names are listed alphabetically in Appendix 1.

I visited the property four times between 21 September 2002 and 15 November 2002. The timing of the study made it impossible to obtain direct information regarding use of the area by reptiles and amphibians, most breeding birds, and some mammal species. The possible use of this area by most species at risk had to be inferred from an assessment of the suitability of habitat and known ranges of these species as determined from personal knowledge, the literature and personal communications with knowledgeable individuals.

During my first visit on 21 September 2002 (9:35 a.m. to 12:20 p.m.), I conducted a brief reconnaissance of the entire property. During the second visit, on 4 November 2002 (1:15 p.m. to 4:30 p.m.), I mapped the proposed aggregate pit using a Garmin GPS 76 and evaluated habitats within this area with reference to their suitability for use by species at risk.

Since noise produced by the pit operation could impact sensitive species at risk using adjacent habitats, adjacent properties were briefly examined during my visits on 21 September 2002 and 4 November 2002. Good potential nesting habitat for Northern Goshawk existed on properties belonging to other landowners adjacent to the proposed extraction site. The Northern Goshawk is considered to be one of the species at risk that is most sensitive to human disturbance. Since the Nova Scotia Department of Natural Resources could place restrictions on activity occurring within 0.5 km of a known

Northern Goshawk nest site, this study was extended to cover appropriate Northern Goshawk nesting habitat within a 0.5 km of the proposed extraction site.

Northern Goshawks that have maintained a breeding territory for a number of years generally have constructed several nest sites within the portion of their home range that provides the required nesting habitat. Nest structures are generally placed in the lower branches of mature trees and are quite easy to see. This is particularly so in deciduous trees after leaf fall.

A property to the east of the proposed pit supported a mature forest that provided an extensive area of good potential Northern Goshawk nesting habitat. The proposed pit site contained only spotty, at best marginal, potential Northern Goshawk nesting habitat. Adjacent properties to the west contained some smaller areas that might be moderately attractive to nesting Northern Goshawks.

On 10 November 2002 (8:55 a.m. to 3:50 p.m.), I again visited the site along with Mr. Bernard Forsythe, a very experienced amateur ornithologist and field naturalist who has studied raptorial birds for almost thirty years. During this visit, we conducted searches for Northern Goshawk (and, indeed, all raptor) nest sites within the proposed aggregate pit site and in the mature forest to the east of the site. In the proposed pit, where there were only pockets of marginal potential Northern Goshawk nesting habitat, we located and searched these areas. In the mature forest area, since practically the entire area afforded good potential Northern Goshawk nesting habitat, a systematic search was conducted. We positioned ourselves approximately 30 m apart and followed transect lines back and forth through the woods guided by GPS and compass, with each transect covering a 60 m wide strip. Eight such transect lines were completed. There was snow cover on the ground on 10 November 2002 which permitted better observation of the tracks of mammals using these areas. All birds observed during our search were recorded.

On 15 November 2002 (1:20 p.m. to 4:50 p.m.), I again visited the site completing two additional 30m wide transects in the mature woodland east of the pit. To the west of the pit, the patches of woodland that provided some potential nesting habitat for Northern Goshawks were visited and examined for nest sites. In addition all the field/forest “edges” within the vicinity of the proposed pit were examined for nest structures made by large birds (American Crows, Common Ravens, hawks). The Long-eared Owl, a species at risk, uses nests built by other birds and appears to have a preference for nest sites located within these edge habitats.

AGGREGATE PIT OPERATIONS

Site Description

The proposed pit site is approximately 7 ha in extent and is situated near the southern extremity of a 58 ha property (PID 55156681), the northern boundary of which extends to Highway 1, in Cambridge, Kings County, Nova Scotia. The proposed pit area includes a 1 ha section in which extraction has already been approved and commenced in 2002

(Figure 1). The remainder of the proposed pit area is primarily woodland. This mixed woodland contains some large pine trees (mostly White Pines with some Red Pines); however, much of the forest is younger, early successional species including poplars, Paper Birch and White Spruce. Young Sugar Maples, American Beech (badly infected with “beech bark disease”), Red Spruce, Eastern Hemlock and Balsam Fir are scattered throughout this area. Red Oaks were present mainly as scattered saplings.

Immediately to the east of the proposed pit is a mature forest dominated by Eastern Hemlock, Red Spruce, and White and Red Pine with scattered Yellow and White Birch, and Sugar and Red Maple. A stream (Tupper Lake Brook) flows through this woodland and feeds the pond at the northeast of the property. To the west of the proposed pit are scattered sections of moderate aged, mixed forests and a deciduous forest in the lowland area along a second stream that passes south and west of the pit site. In the deciduous forest, dominant species included Sugar Maple, Red Maple and White Ash.

To the north of the proposed pit is mainly agricultural land currently being intensively used for cash crop production.

There are no streams or wetlands within the proposed pit area.

Aggregate Pit Activities

Aggregate extraction at the current pit site began in 2002. It is expected that extraction will continue in the expanded pit at rates similar to that experienced in 2002 for an estimated 10 to 15 years.

Equipment that will be used at the expanded site will be an excavator, a crusher and a front-end loader. Large trucks will be loaded continually during periods of active demand. Demand, and therefore pit activity, will vary throughout the year with peak demand from May through September, trailing off during fall, winter and early spring. Activities at the pit will generally be conducted between 6:00 a.m. and 7:00 p.m. Crushing operations will not be continuous but will occur only sporadically on an “as needed” basis. Explosives will not be used in the extraction process.

Site Reclamation

As sections of the aggregate pit become exhausted, they will be covered with previously removed overburden and forest regeneration, through natural successional processes, will be allowed to proceed.